



**FAO/GLOBAL ENVIRONMENT FACILITY  
PROJECT DOCUMENT**



**PROJECT TITLE:** Integrated national Monitoring and Assessment System on Forest Ecosystems (SIMEF) in support of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.

**PROJECT SYMBOL:** GCP/CHI/032/GFF

**RECIPIENT COUNTRY/IES:** Chile

**RESOURCE PARTNER:** GEF

**FAO PROJECT ID:** 616813

**GEF/LDCF/SCCF PROJECT ID:** 4968

**EXECUTING PARTNER(S):** Ministry of Agriculture (MINAGRI) through the National Forestry Institute (INFOR), National Forestry Corporation (CONAF) and Renewable Resources Information Center (CIREN)

**EXPECTED EOD (STARTING DATE):** November, 2014

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<b>CONTRIBUTION TO FAO'S STRATEGIC FRAMEWORK</b>	<p><b>a. Strategic objective/Organizational Result:</b> Strategic Objective 2 (SO2), Outcome 3 (OO3)</p> <p><b>b. Regional Result/Priority Area:</b> Climate Change and Environmental Sustainability</p> <p><b>c. Country Programming Framework Outcome:</b> Priority Area: Natural resources management and adaptation to climate change. Outcome: Improve management and sustainable production of agricultural, forestry and fisheries systems and their adaptation to climate change</p>
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**GEF FOCAL AREA:** Multi-focal (Biodiversity, Climate Change, SFM/REDD+)

**GEF STRATEGIC OBJECTIVES:** BD-2; CCM-5; SFM/REDD+ -2

**ENVIRONMENTAL IMPACT ASSESSMENT CATEGORY (INSERT √):** A B C √

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<u>Co-financing:</u>		
National Forestry Institute (INFOR)	USD	12 205 241
National Forestry Corporation (CONAF)	USD	7 340 940
Renewable Natural Resources Information Center (CIREN)	USD	2 032 290
Ministry of Environment (MMA)	USD	611 056
Aerial Photogrammetric Service (SAF)	USD	3 026 504
FAO	USD	392 000
Subtotal Co-financing:	USD	25 608 931
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## EXECUTIVE SUMMARY

Chile hosts an extraordinary diversity of ecosystems and habitats as well as outstandingly high levels of endemism that are amongst the highest in Latin America and the Caribbean region. Four of the country's 12 ecoregions are recognized as global priorities for conservation: Central Andean Dry Puna, Central Chile Scrubland, Winter Rainfall forest–Valdivian Temperate Rainforest, and the Magellanic Patagonian Steppe. The Central Chile Scrubland, the Temperate Rainforests of Valdivia and the Patagonian Steppe are listed as Critically Endangered, while the Central Andean Dry Puna is listed as Vulnerable under World Wide Fund's (WWF) Global Priority Ecoregions. The Central Andean Dry Puna also represents part of Conservation International's (CI) Tropical Andes hotspot and the Patagonian Steppe has been named one of 37 Wilderness Areas of the World as defined by CI.

The country's natural forests cover 13.6 million ha and possess almost one-third of the world's few remaining large tracts of relatively undisturbed temperate forest. Virtually every type of temperate forest native to the Southern Hemisphere can be found in Chile. Further they hold a range of forest related species that can only be found in Chile and as such represents high level of endemism. These forests are of great ecological and conservation value. They store significant quantities of carbon, control flooding, purify water, cycle nutrients and soil, and house an incredible array of species that provide the genetic material for valuable new products and a foundation for the resilience of natural systems.

The Government of Chile has developed relevant instruments to monitor these forest ecosystems, namely the Vegetation Cadastre and the National Forest Inventory (NFI), which have greatly improved the availability of data on the status and conditions of the forest ecosystems, leading to improved policies and practices stopping overall deforestation. However, two major concerns remain. One is the continuous degradation of forests (an estimated 77,000 ha/year with 1,000,000 ha currently affected), in particular those forests concentrated in the center and southern part of the territory with a surface of over 4 million ha, recognized to have unmeasured consequences for ecosystem functions especially biodiversity. The second issue is the increasing demand of energy in support of economic development involving excessive carbon emissions and the generalized non sustainable uses of wood biomass to cover household heating demand, which imply a serious threat to the forest ecosystem integrity. Around 85% of the consumed fuel woods every year come from natural forests (9 million m<sup>3</sup> per year).

Adequate monitoring and assessment of forest ecosystems and use of the generated information to overcome the above-mentioned threats is constrained by: 1) Limited interinstitutional coordination and management structure for integrating on-going forest related monitoring and assessments and ensuring participation of local stakeholders; 2) Gaps in technical capacities for implementation of an integrated forest monitoring and assessment system; 3) Coverage gaps in current national forest monitoring and assessment both in terms of forest areas covered and data and indicators covered which leaves to incomplete information on the current situation and trends for decision makers and planners to take action; 4) Lack of cost-effective integration and coordination of information and monitoring systems; 5) Limited availability and use of forest monitoring and assessment data and information by national policy and regulation formulators and decision makers; 6) Limited availability and use of forest monitoring and assessment data and information by regional and local development and land use planners and decision makers; and 7) Limited availability and adequateness of forest monitoring and assessment data and information for local SFM practitioners and decision makers and lack of technical support for the adoption of SFM practices.

The project aims at removing these barriers by developing and implementing an Integrated Forest Monitoring and Assessment System including carbon stocks and biodiversity in Forest Ecosystems (SIMEF for its Spanish abbreviation) supporting the National Greenhouse Gases Inventory and the development of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.

The **project's global environmental objective** is to develop, and implement an Integrated Forest Monitoring and Assessment System on carbon stocks and biodiversity in Forest Ecosystems (SIMEF for its Spanish abbreviation) supporting the National Greenhouse Gases Inventory and the

development of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems. The project's **development objective** is to support government institutions, the private sector and CSO at all levels with improved data and information and its application for better decision making on forest policies, land use planning and regulations as well as on resources management by local communities to guarantee their sustainable use for improving livelihood conditions, providing them with an efficient structure securing bottom – up communication on a continued improvement of the SIMEF to serve their needs. To achieve these objectives the project will be implemented through the following components:

- 1) Development of institutional coordination framework and capacities for the implementation of the SIMEF
- 2) Operational implementation of SIMEF
- 3) Application of the information generated by SIMEF in local, regional, and national policies and regulations, land-use planning and in support of SFM incorporating REDD+

Expected outcomes include the following: i) Steering Committee, Executive Secretariat, Technical Advisory Committee and 15 Regional Participation Committees operating and effectively fulfilling their management, coordination and implementation roles in accordance with the Annual Work Plan and promoting the use of SIMEF (Baseline: No current inter institutional coordination and work/management structure for implementation of SIMEF); ii) 4 data collection protocols supplemented, validated and standardized facilitating the collection and analysis of high quality data (Baseline: protocols for collection and analysis of data for monitoring and evaluation of forest ecosystems exist but some need to be supplemented and/or validated and standardized); iii) 286 (at least 40% women) staffs of INFOR, CONAF and CIREN (120), RPC members (30) and data collection brigades' members (136) trained achieving a score of at least 75% in the final training assessments (Baseline: the expansion of the NFI to SIMEF will require more personnel trained in data collection protocols, analysis and development of SIMEF indicators and products); iv) Carbon stocks of 2 GtCO<sub>2eq</sub> inventoried in an additional 3,4 million ha (for all pools) (Baseline: Carbon stocks of 5.7 Gt CO<sub>2eq</sub> estimated for 10 million ha covering total above-ground tree biomass); v) 13,6 million ha of habitats for Chile's endemic biodiversity including Araucaria forests, temperate rainforests, Alerce forests and Mediterranean forests monitored (Baseline: No current forest biodiversity monitoring); vi) One Integrated National Forest Monitoring and Assessment System (SIMEF) functioning at national level and providing updated and compatible information on carbon stocks and flows, biodiversity of forest ecosystems, interlinkages between socioeconomic drivers and land use changes, and forest fragmentation and degradation rates (Baseline: Cadastre and NFI but no integrated information system); vii) 10% increase in core areas and 10% increase in average areas of patches in the O'Higgins and Los Rios Regions 5 years after end of project (EOP) (Baseline: core areas in O'Higgins and Los Rios are 183 and 860,338 ha respectively and average areas of patches are 104 and 227 ha respectively); viii) Forest degradation rate reduced by 20% over the baseline with a 15% margin of error by EOP (Baseline: forest degradation rate is estimated in 77,000 ha/year with a 45% margin of error affecting an estimated 1,000,000 ha); ix) 4,300 ha of degraded forests under rehabilitation by EOP and 100,000 ha under rehabilitation 20 years after EOP (Baseline: estimated 500 ha under rehabilitation); x) 40.6x10<sup>6</sup> t CO<sub>2eq</sub> in avoided emissions from forest degradation and 13.5x10<sup>6</sup> t CO<sub>2eq</sub> sequestered by forest rehabilitation resulting in a net carbon balance of -54.2x10<sup>6</sup> t CO<sub>2eq</sub> (38% uncertainty); xi) Populations of key threatened tree species stabilized, facilitating passive restoration with avellanita (*Avellanitabustillosii*) southern belloto (*Beilschmiedia berteriana*) northern belloto (*Beilschmiedia miersii*) (Baseline: Although these species are recognized as vulnerable, baseline information is still poor, and will be validated during project implementation).

The project will be financed by a USD 6.3 million grant from GEF and USD 25.6 million in co-financing provided by government institutions and FAO. The project will be executed by INFOR in close collaboration with CONAF, CIREN and other national and local government partners as well as small forest owners, the forest industry, research institutions and NGOs. FAO will be the GEF agency providing supervision and technical support to the project throughout its implementation.

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## CHAPTER 1 GLOSSARY OF ACRONYMS

AIFBN	Forestry Engineers Group for Native Forests
ASIMAD	Guild Timber Industry Association
AWP/B	Annual Work Plan and Budget
BH	Budget Holder
CBD	Convention on Biological Diversity
CEO	Chief Executing Officer (GEF)
CESCO	Economic and Social Community Council
CI	Conservation International
CIREN	Center for Natural Resource Information
CONAF	National Forestry Corporation
CONAMA	National Environment Commission
CONECIF	National Corporation of Students of Forestry Sciences
CORE	Regional Council
CORMA	Chilean Timber Corporation
CSO	Civil Society Organization
CTF	Forestry Workers Confederation
EP	Executing Partner
ES	Executive Secretariat
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FPMIS	Field Project Management Information System
FRA	Global Forest Resources Assessment
FSC	Forest Stewardship Council
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
GEFSEC	GEF Secretariat
GHG	Greenhouse Gas
GORE	Regional Government
INDAP	Agricultural Development Institute
INFOR	National Forestry Institute
LTO	Lead Technical Officer
LTU	Lead Technical Unit
LULUCF	Land Use and Land Use Change and Forestry
M&E	Monitoring and Evaluation
MINAGRI	Ministry of Agriculture
MMA	Ministry of Environment
MRV	Monitoring, Reporting and Verification
MUCECH	United Farmers and Indigenous Peoples Movement of Chile
MZ	Macro Zones
NAMA	National Appropriate Mitigation Action
NFI	National Forest Inventory
NGO	Non Governmental Organization
NPD	National Project Director
NSC	National Steering Committee
PBCCh	Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile
PIF	Project Identification Form (GEF)
PIR	Project Implementation Review
PLADECO	Communal Development Plan
PPG	Project Preparation Grant (GEF)
PPR	Project Progress Report
PRODESAL	Local Development Programme implemented by INDAP
PRODOC	Project Document
PSC	Project Steering Committee

PY	Project Year
RDS	Regional Development Strategy
RPC	Regional Participation Committee
SIMEF	Integrated National Monitoring and Assessment of Forestry Ecosystems System
STAP	Scientific and Technical Advisory Panel
SUBDERE	Regional and Administrative Development Sub-secretariat
RDS	Regional Development Strategy
REDD+	Collaborative Programme for Reduction of Emissions from Deforestation and Degradation of Forests
RLUP	Regional Land Use Plan
TAC	Technical Advisory Committee
TCI	Investment Centre Division (FAO)
TNC	The Nature Conservancy
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WWF	World Wide Fund

## SECTION 1 – RELEVANCE (strategic fit and results orientation)

### 1.1 GENERAL CONTEXT

#### *a) General development context related to forest ecosystems in Chile*

Chile is located in the southern cone of South America and is bordered by Argentina, Chile and Peru. Continental Chile has a surface area of 756,000 km<sup>2</sup>, a coastline of approximately 4,300 km from North to South and an average width of 180 km. Chile's population is 17.5 million with 89% living in urban areas and 11% in rural areas. For administration purposes, the country is divided into 15 regions.

Chile has two structural relevant features with a latitudinal gradient ranging from 18° to 56° South latitude and altitudinal gradient ranging from ocean trenches 8000 meters deep to 7000 meters above sea level at some points. Rainfall patterns also generate gradients varying from areas with one of the lowest rainfall records in the North to the heaviest rainfall in the South with only 24 days per year without rain. Furthermore, the country is isolated from other large landmasses by the Andean range in the East, the Atacama Desert in the North, and the Pacific Ocean in the West. The highly heterogeneous environmental conditions and the natural isolation provide an extraordinary diversity of ecosystems and habitats including expansive arid desert, remote Pacific islands, a Mediterranean ecosystem, high-altitude grasslands and wetlands, and temperate rainforests, among others, as well as outstandingly high levels of endemism that are amongst the highest in Latin America and the Caribbean region. Chile hosts around 30,000 species. The high level of endemism is reflected for instance in terrestrial plants where 55% of dicotyledons, 33% of gymnosperms and 29% of ferns and lycopods are only found in Chile. Insect endemism reaches 50% in the order lepidoptera, 45% in coleoptera, 53% in diptera and 92% in heteroptera. Almost 78% of amphibians and 59% of reptiles are endemic.

Four of the country's 12 ecoregions are recognized as global priorities for conservation: Central Andean Dry Puna, Central Chile Scrubland, Winter Rainfall forest–Valdivian Temperate Rainforest, and the Magellanic Patagonian Steppe. The Central Chile Scrubland, the Temperate Rainforests of Valdivia and the Patagonian Steppe are listed as Critically Endangered, while the Central Andean Dry Puna is listed as Vulnerable under World Wide Fund's (WWF) Global Priority Ecoregions. The Central Andean Dry Puna also represents part of Conservation International's (CI) Tropical Andes hotspot and the Patagonian Steppe has been named one of 37 Wilderness Areas of the World as defined by CI.

Chile is a country that has been recognized for its economic performance and low levels of corruption in a functioning democracy. Governmental programs seek to respond to the public demand ensuring continued economic growth, overcome poverty and significantly increase the level of life and implement public policies toward sustainable development to ensure the conservation of natural resources and the sustainable use of forests and forest products. Chile relies heavily on its natural resource base for employment and exports. Environmental conditions are highly favourable for its natural resource-based industries; including forestry, fisheries, and agriculture. The forestry industry is the country's second source of income generating



130,000 direct and formal jobs. Around 260,000 rural households are involved in forestry family farming practices representing 85% of the agricultural production units. Forestry farming systems cover 8.2 million hectares (ha) and benefit around 1.2 million people. Out of Chile's total 75.6 million ha, 45% (around 33.8 million ha) of the lands have appropriate conditions to develop forestry activities. Forestlands cover 16.2 million ha equivalent to 21.48 % of the total land area. This area includes 13.6 million ha of natural forests and 2.6 million ha of planted forests, mainly pine and eucalyptus. According to the Global Forest Resources Assessment (FRA 2010 ) elaborated by FAO, Costa Rica, Chile, and Uruguay are the only Latin American countries that have increased forest cover during the last decade. Moreover, Chile has made great efforts in protecting its natural heritage. The National Protected Areas System administrates 102 protected areas, distributed in 37 national parks, 49 national reserves, and 16 natural monuments, covering around 14 million hectares, representing 20% of the national territory. The estimated forest area in protected areas is around 3.9 million ha. Yet, despite its natural assets and economic development, the country is challenged by environmental problems including among others, forest degradation and biodiversity loss due to past and current malpractices. Although protected areas cover a significant percentage of the territory, large expanses of forestlands are still located in the productive landscape. Climate change is also exacerbating land degradation through changes in rainfall quantity and regimen, and rising temperatures.

*b) Global Environmental Benefits (GEB), provided by Chile's forest ecosystems, status, threats and causes*

Chile's natural forest covers 13.6 million ha and possesses almost one-third of the world's few remaining large tracts of relatively undisturbed temperate forests ranging from Chilean palm forests and Sclerophyllous forests (composed of tree species adapted to drier climates), in north-central Chile, to prehistoric Araucaria forests, temperate rainforests, and Alerce forests (the Southern Hemisphere's largest conifers which can be over 3,000 years old -the "redwoods of the Andes") to the South. Virtually every type of temperate forest native to the Southern Hemisphere can be found in Chile. These forests are of great ecological and conservation value. They store significant quantities of carbon, control flooding, purify water, cycle nutrients and soil, and house an incredible array of species that provide the genetic material for valuable new products and a foundation for the resilience of natural systems. According to the National Forest Inventory (NFI) the 10 million ha of Chile's natural forests currently covered by the NFI, are sequestering at stem level a total of 0.094 GtCO<sub>2-eq</sub>/year as a result of their natural growth and, represent a total stock of 5.79 GtCO<sub>2-eq</sub>.

Natural forests have in the past century accounted for 16.6 million ha. According to the first NFI performed in 1944-45, the total annual industrial cutting was 37.5 million m<sup>3</sup> but the indicated annual renewal in terms of growth was only 20.6 million m<sup>3</sup> resulting in an unsustainable demand causing deforestation. This information was certainly one of the most important results of this first NFI. Although, the results of this forest inventory were acknowledged by the relevant authorities, few actions were evidenced in forest policy or new legal instruments at the time to obtain sustainability in the use of forest resources.

During 1993-97, the National Environment Commission (CONAMA), governmental institution in charge of the environment, requested the implementation of a national land vegetation cover cadastre of the whole country, known as the National Vegetation Cadastre. The cadastre, implemented by the National Forestry Corporation (CONAF), allowed the authorities and various stakeholders to gain information in the form of comprehensive reports about the spatial distribution of forest types and their species composition for the whole country. During the years 2000-2004, after several attempts to obtain funding, the second NFI was implemented by the National Forest Institute (INFOR). Since 2005 the NFI receives financial support from the Ministry of Agriculture (MINAGRI) on a regular basis. The NFI was designed to provide solid statistical sampling applying the concepts of multi sources, multi levels, and multi resources and a permanent forest inventory focusing on forest ecosystem goods and service's state and conditions and, covering up-to-date a total of 10 million ha of Chile's forest (leaving 3.6 million ha of Chile's natural forest unmonitored). These improvements in official data on the status and conditions of forest ecosystems in Chile have led to improved policies and practices stopping overall deforestation. However, two main issues related to forest ecosystems have been of major concern during the last decade: i) the continuous degradation of native forests, and ii) the increasing demand of energy in support of economic development.

**Forest degradation.** Chile does not face a deforestation problem, which is considered as controlled and negligible, but its major concern is forest degradation, which is mainly concentrated in the center and southern part of the territory, between the regions of Maule and Los Lagos, with a total forest area close to 5.0 million ha. The most relevant forest types found in this area are the Roble-Raulí-Coihueforests (*Nothofagus oblique*, *Nothofagus alpine*, *Nothofagus dombeyii*) and the Evergreen forest types. The degradation rate in general is roughly estimated to 77,000 ha/year with a total of 1,000,000 ha currently affected.

For at least a decade, the native forests were substituted by plantations of exotic species. Although there is currently no more substitution there is an increasing demand of areas for agricultural uses especially livestock production. This has derived in an increase of forest fragmentation and a reduction in the area occupied by native forests mainly due to a long degradation process. There is no accurate national level information to assess the level of forest degradation and its drivers. Researchers in particular regions and rural areas have identified poverty, technology restrictions, limited access to markets, changes in forest types, geographic characteristic, and land tenure as the driving forces for deforestation and forest degradation. Communities are more interested in investing in economic activities that will generate short term income such as cattle rising instead of more medium and long-term income generation from products from sustainable managed forests. Forest fires also contribute to forest degradation, and according to the Vegetation Cadastre in some regions the forest cover has decreased around 33,000 ha because of fires.

Forest degradation occurs mainly at the level of small landowners. The main driver in this case is the poverty condition or subsistence needs, since small landowners use the forest as a financial buffer when facing economical needs. According to the last agricultural census (2007), there are around 300,000 properties including small, medium and large-scale owners. Small and medium sized properties represent 84% of the total lands registered. The census identified that around 184,000 agricultural

properties (61% of the total number) are unable to produce enough to cover the minimum wage for a family.

The regions of Araucania, Los Rios and Los Lagos contain 4.5 million ha of native forests, which stand for 35% of the country's forest area. These forests are the most affected by degradation. Nearly 22% of the native forestlands in these regions are owned by small holders, who apply malpractices such as unsustainable extraction of firewood and use the forest for cattle grazing and shelter, with negative impacts on the natural regeneration. Harvesting practices do not include sustainable cutting limits related to a particular management regime based on natural regeneration rates conserving the forest. The volume of trees cut and wood extracted is based on the currency needs of the landowner at the moment. A INFOR study undertaken in the regions of Los Rios and Los Lagos to assess the level of sustainability of forest harvesting by different landowner categories (Chilean small farmers, entrepreneurs, immigrants and indigenous peoples) concluded that in average 37% of the surveyed landowners carried out unsustainable harvesting. Considering each category, indigenous peoples, whom are amongst the poorest and most vulnerable, incurred in the highest rate with 43% of surveyed landowners harvesting unsustainably.

In the Mediterranean forests in the center of the country, urban expansion and the advance of industrial crops exert pressure on the forests. Large forestry companies in principle apply management practices, although mainly for plantations of exotic species (pine and eucalyptus). However, clearcutting is the typical harvesting method employed in plantations where most or all of the trees are uniformly cut down, leaving the soil uncovered and subject to erosion especially in areas with slopes, and altering the water quality and flow.

***Increasing demand of energy.*** The increasing demand of energy in support of economic development involving excessive carbon emissions (Chile has doubled its emissions since 1990) and the generalized non-sustainable uses of wood biomass to cover household heating demand, imply a serious threat to the forest ecosystem integrity. According to INFOR (2008) around 85% of the consumed fuel woods every year come from natural forests, i.e., 9.0 millions m<sup>3</sup> per year. The strong demand of fuel wood comes from the people living in the big cities and towns, covering household heating needs based on burning wood biomass.

### ***Status and perspectives of Global Environmental Benefits provided by Chile's forest***

Both the need for financial resources on one side, and the increasing demand coming from cities and big towns explain the degradation of forests every year. Thus, stress on forest ecosystems in Chile is deeply-rooted in socio-economical issues which are still not adequately monitored, analyzed and understood. The consequences of the worrying rate of degradation affect the forest structure and carbon sequestration capacity as well as the biodiversity related to forest ecosystems and its resilience to climate variability and changes. Forest degradation reduces the growth rate of native forest, having a negative impact on its carbon sequestration capacity. This effect has an impact on the existing positive green gas emissions related to agroforestry practices.

Forest biodiversity, including species and genetic diversity and ecosystems/habitats, is vital for human well being. Biodiversity, as a key element for sustaining ecosystem functions, is affected by the process of forest degradation by slowly, but systematically, reducing habitats. For instance, habitat fragmentation of the biological corridor from the coast to the Andes in the Valdivian eco-region is estimated to affect 35,000 ha. In Southern Chile (Los Lagos Region) 500,000 hectares suffer fragmentation and it is estimated that the patch density for the period 2010-2020 will decline, and that total forest area and patch proximity will further decline as a result of forest fragmentation. In the Southern Central Chile coastal range (Maule and Bio Bio regions) 578,164 hectares of land are subject to forest fragmentation associated with a decrease in forest patch size, associated in turn with a rapid increase in the density of small patches (<100 ha), and a decrease in the area of inner forest and in connectivity among patches. Other studies showed that in the Andean and coastal areas of South-central Chile (Maule and Bio Bio), forests are affected by high fragmentation with areas of very low size. Other consequences include changes in species composition, losing keystone species (such as *Quillajasaponaria*, *Cryptocarya alba* and *Peumusboldus*) including important pollinators, all of which unfortunately are among the several issues that still remain un-monitored. In general, Chile faces un-mapped and un-monitored consequences on populations of birds, arthropods, rare species/habitats, mammals and others organisms which strongly depend on, and interact with forest ecosystems including pollinators and keystone species. This lack of systematic understanding of current biodiversity and habitats trends and dynamics does not allow for focused conservation actions.

*c) Institutional and policy framework for forest monitoring and management*

***Institutional framework***

The main central government institutions related to sustainable forest management and biodiversity conservation are the Ministry of Agriculture (MINAGRI) and the Ministry of Environment (MMA).

The **Ministry of Agriculture (MINAGRI)** is responsible for promoting, guiding and coordinating agricultural, forestry and livestock production of the country. Its objective is to augment national production; conserve, protect and improve the renewable natural resources; and improve the population's nutrition status. MINAGRI comprises several services that are key to the implementation of the ministry's multiple tasks, among them the National Forestry Institute (INFOR), the National Forestry Corporation (CONAF), the Renewable Natural Resources Information Center (CIREN) and the Agricultural Development Institute (INDAP).

**INFOR** has the mission of creating and transferring high quality scientific and technological knowledge for the sustainable use of forest resources and ecosystems, product development and derived services as well as generating relevant economic, social and environmental information for the forestry sector. To undertake its mission, it implements six main research programmes: i) National Forest Inventory; ii) Forestry Strategic Information and Analysis; iii) Native Forest Management and Rehabilitation; iv) Conservation and Genetic Improvement; v) Climate Change and

Water; and vi) Support to Forestry and Timber Small and Medium Size Enterprises (SMEs)

**CONAF** is a private entity of the MINAGRI<sup>1</sup> with the mandate of managing Chile's forestry policy and promoting the development of the sector. Its mission is to contribute to the country's development through the sustainable management of forest ecosystems and mitigation of climate change impacts by means of promoting and monitoring the implementation of the forest and environmental regulatory framework; protecting the vegetation resources and managing the State's protected areas. CONAF manages 100 State protected areas. CONAF also develop the National Vegetation Cadastre.

**CIREN** is in charge of providing information on the country's renewable natural resources, agricultural, forestry and livestock production, and food and productive resources. It hosts the largest georeferenced database on soils, climate, water resources among others providing access to public and private institutions with the purpose of facilitating decision making and design of productive development and land use planning policies.

**INDAP** is in charge of supporting activities to promote and finance the sustainable productive development of small and medium scale producers by developing their capacities and strengthening the integration of small farming products and services in the national and international markets. INDAP pursues an inclusive development by providing loans to small farmers who do not have access to private banking services, improving coverage and quality of development programmes that address vulnerable populations, promoting productive investments and training to improve individual and organizational competitiveness.

The **Ministry of Environment (MMA)** is the State institution mandated with the design and implementation of environmental policies, plans and programmes; protection and conservation of biological diversity and renewable natural and water resources; promotion of sustainable development, integrity of the environmental policy and its regulatory framework. In regards to biodiversity, the MMA is responsible for ensuring that the protected areas system fulfils its role of adequately protecting biodiversity, issuing regulations for sustainable use of natural resources (e.g. soils and water), and establishing preventive criteria and measures to favour conservation and recuperation of the country's biodiversity. In terms of information generation and management, the MMA is responsible for elaborating periodic reports on the state of the environment and manages the National Environmental and Territorial Information System.

The **Regional and Administrative Development Sub-secretariat (SUBDERE)** was established to coordinate, promote and evaluate regional development and investment. At the same time, it collaborates in implementing public modernization and administrative reform. SUBDERE supports the regional governments in the development of their regional development strategies.

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<sup>1</sup> Under the new administration it is foreseen that CONAF will be reformed to a public entity still under MINAGRI

**Regional Governments (GORE)** are responsible for the administration of the 15 regions into which Chile is divided. GOREs are mandated with promotion of the social, cultural and economic development of the regions. Each GORE is headed by an *Intendente* designated by the President and a Regional Council (CORE), which members are elected. The main responsibilities of the GOREs are to: (1) elaborate and approve the regional development policies, plans and programmes and their corresponding budgets; (2) guarantee the legality of the administration; (3) promote the harmonious and equitable development of the territory; (4) decide on the investments of the National Fund for Regional Development; (5) ensure equity, efficiency and effectiveness in the allocation and use of public resources; and (6) promote the preservation and enhancement of the environment. The CORE has technical planning units responsible for advising, coordinating, monitoring and evaluating the appropriate investments to guarantee the results under the aforementioned responsibilities.

**Local Governments** are represented by the Municipalities, which are autonomous public bodies with legal status and assets of their own. Their purpose is to satisfy the needs of the local community and ensure their participation in economic, social and cultural development of the commune. The Municipality is responsible for preparing and approving the Communal Development Plan (PLADECO). It may implement environmental protection activities directly or in coordination with other public institutions. The municipality is advised by an Economic and (CESCO), made up of representatives of the main sectors and community organizations.

Non Governmental Organizations (NGO) have a relevant participation in environmental issues and especially in regards to conservation of the forest ecosystems of Chile. **World Wide Fund (WWF)** works in the Valdivia eco region developing biodiversity conservation initiatives with communities, management of forests and plantations. **The Nature Conservancy (TNC)** purchased in 2003 the Chaihuin Venecia property and established the Valdivia Coastal Reserve in 2005 focusing their activities toward this forest ecosystem. More recently the scope of the NGO's has expanded to include the ecosystems of the Mediterranean ecoregion, especially in the Aconagua Province of the Valparaiso region. The **Forest Stewardship Council (FSC)** in Chile groups more than 70 environmental NGOs and works in promoting forest certification under the FSC standards, which have been mainly implemented by large forestry companies. The **Forestry Engineers Group for Native Forests (AIFBN)** works along lines related to forest monitoring, education, community forestry and forest policy and legislation. Its members are highly qualified professionals. The **Group Sustainable Los Lagos Ecoregion** promotes the implementation of the Local Agenda 21 Ecoregional Programme. Its objective is to implement local and regional planning and management processes based on a landscape approach that strengthens intersectoral coordination and participation for a more sustainable regional development. The NGO had an active participation in the design of the Los Rios Regional Development Strategy preparing the baseline assessments of the communes.

With regard to the **private sector** three main groups participate in the forestry sector mainly working in planted or plantation areas: (1) large international companies with high negotiation and transaction capacity; (2) small forest landowners with less than 100 hectares each, covering 50% of the total forest plantations and including areas

owned by Mapuche Indigenous Peoples; and (3) forestry sector workers. The **Chilean Timber Corporation (CORMA)** is the main forestry sector organization and groups nearly 150 private sector actors who are responsible for more than 55% of the surface area planted with trees and 85% of exports. The **Timber Industry Association (ASIMAD)** and the **United Farmers and Indigenous Peoples Movement (MUCECH)** both represent small and medium size forest landowners. These two groups promote small and medium forestry enterprises, through market analyses to strengthen productive chains and regional clusters to provide advice and guidance for development of the forestry enterprises seeking to contribute to supply the domestic and international markets with products of greater added value MUCECH is a member of INFOR's Board of Directors and develops work with MINAGRI, CONAF and INDAP. The **Association of Forestry Engineers** groups forestry professionals, teachers, and researchers while students are organized in the **National Corporation of Students of Forestry Sciences (CONECIF)**. CONAF unions and the **Forestry Workers Confederation (CTF)**, represent employees in the forestry sector.

### *Policy and regulatory framework*

The **Native Forest Recuperation and Forestry Promotion Law** (Native Forest Law) N°20.283 was passed in 2008 with the objectives of protecting, recuperating and improving the native forests to ensure the implementation of the environmental policy and the sustainability of forests. With the issuance of this law, Chile has a modern regulatory framework for the sustainable development of the natural forest resources and promotion of the sustainable social and economic development of rural communities. To support the implementation of the law the Government established the “**Native Forest Conservation, and Sustainable Management Fund**” and the “**Native Forest Research Fund**” both implemented by CONAF.

Chile has developed a number of policy and strategic instruments aiming at the conservation and sustainable management of forest ecosystems and biodiversity. The **National Biodiversity Strategy** was developed in 2003 and its **Action Plan** in 2005 (NBSAP). Its overall objective is the conservation and sustainable management of the country's biodiversity to protect its vital capacity and guaranteeing access to its benefits for the well being of present and future generations. The NBSAP strategic lines are: i) to ensure ecosystem conservation and restoration; ii) to ensure the conservation of species and genetic resources; iii) to promote sustainable productive practices that ensure maintenance of biodiversity; iv) to strengthen interinstitutional and intersectoral coordination for a comprehensive management of biodiversity; v) to establish formal and informal mechanisms for an optimal management of biodiversity; vi) to strengthen environmental education, public awareness and information access; and vii) to strengthen and coordinate research. The strategy is currently being updated with expected submission to the UNCBD in June 2015.

The **National Climate Change Strategy and National Climate Change Action Plan** (2008-2012) includes as one of its priority strategic lines the analysis of the potential effects of climate change on biodiversity with a focus on ecosystems and species that maybe more vulnerable to potential changes in climate. The plan articulates a set of guidelines for public policy, organized in three types of actions: i) adaptation to climate change impacts; ii) mitigation of emissions; and iii) capacity

building, with the main purpose of generating short-term information needed to prepare national and sectoral plans for climate change adaptation and mitigation. Within the framework of the national strategy and action plan the MMA has prepared a proposal for a Biodiversity and Climate Change Plan.

The **National Forest and Climate Change Strategy** is an institutional initiative developed by CONAF which seeks to implement a National Appropriate Mitigation Action (NAMA) for the forestry sector and contribute to a 20% reduction in Greenhouse Gas (GHG) emissions. The strategy aims to institutionalize climate change mitigation and adaptation practices within the public and private forest sectors, and provide alternative incomes to forest landowners by trading carbon credits.

The regions have several types of strategic planning instruments. The **Regional Development Strategy** (RDS) is the long term planning instrument (10 years) that defines the development priorities and objectives of the regions. The strategies were initiated in 1990 thereby most regions are currently implementing third generation strategies which have gradually incorporated environmental issues. In 2002 the MMA promoted the elaboration of **Regional Biodiversity Strategies** with the overall objective of establishing, for each region, a strategy and 5-year action plan setting the priorities and actions agreed by key stakeholders for conservation and sustainable use of biodiversity. To implement the strategies Regional Biodiversity Operational Committees were established. The regional strategies are currently undergoing an updating process. Another key instrument is the **Regional Land Use Plan** (RLUP). Land use plans serve to narrow down the economic, social, cultural and environmental objectives contained in the RDS at landscape level, and identify the limitations and potentials for the sustainable development of each territory.

The **Communal Development Plan** (PLADECO) is the main planning instrument at local level. It is an indicative instrument prepared by each commune and serves the purpose of guiding the development of the commune in economic, social, educational, health, cultural, environmental and security issues. PLADECOs have a minimum duration of four years and are approved by the Municipal Council.

### **1.1.1 Rationale**

*a) Baseline projects and investments for the next 3-5 years addressing the identified GEB threats and causes in Chile's forest ecosystems*

The Government of Chile implements a number of initiatives addressing conservation of biodiversity, climate change mitigation and sustainable forest management. This includes several funds to finance the implementation of the environmental legal framework. These funds provide financial resources to national, regional and local level environmental initiatives, including forest management, biodiversity conservation and climate change related projects. To implement the Native Forest Law the Government established the “**Native Forest Conservation, and Sustainable Management Fund**” and the “**Native Forest Research Fund**” both implemented by CONAF (see further details below under thematic area 7 and 2, respectively).



The **MMA's Environmental Protection Fund** finances through calls for proposals initiatives within the framework of the Environment General Bases Law N°19.300 that aim at the protection of the environment, sustainable development, preservation of nature, and conservation of the environmental heritage. One of its funding lines targets the promotion of environmental networks, with the objective of creating, maintaining and strengthening virtual and/or physical environmental networks. Current projects cover issues such as local environmental management, environmental protection and management by indigenous peoples, environmental networks, and environmental information and research. Universities, research centers and local organizations are the main beneficiaries of these funds.

The **Innovation for Competitiveness Fund** was established in 2006 and is the main funding instrument to finance innovation initiatives at regional and local level. The fund operates on the basis of calls for proposals and finances scientific research, entrepreneurial innovation, technology transfer and entrepreneurship. The main implementing agencies are Innova Chile of the Production Promotion Corporation (CORFO), Foundation for Agrarian Innovation, and Millennium Scientific Initiative.

Chile has made the commitment within the framework of the UNFCCC to reduce its GHG emissions by 20% by the year 2020 (base year 2007). One of the initiatives to meet this commitment is the *Mitigation Options for Addressing Climate Change Project (MAPS Chile)* a nationwide initiative of the **MMA** supported by a high level committee of ministers to provide mitigation alternatives to several productive sectors. The *MAPS Chile* seeks to develop: 1) quantified scenarios and mitigation options for Chile in 2020, 2030 and 2050 together with a detailed analysis of possible mitigation actions per the selected sectors (energy, transportation, mining, agriculture, forestry and wastes); 2) dissemination of information materials for different target audiences, including policy briefs for public and private decision makers; 3) information and knowledge management tools through a web platform; 4) design of a low-emission development strategy for the country; 5) good practices in multi-stakeholder participatory processes. The *MAPS* ended its second phase, which includes activities such as defining the baseline for 2013-2050; identifying mitigation measures and scenarios, qualitative assessment of externalities and co-benefits and macroeconomic modelling, in this task a consortium INFOR-INIA took care of the whole Forest and Agricultural sector respectively

The MMA has identified strategic focus areas for priority biodiversity and is working toward the establishment of the Biodiversity and Protected Areas Service for a comprehensive management of biodiversity in the country, including private protected areas. MMA is also working in the establishment of rules and regulations for the sustainable use of soil and water. Another priority area is the definition of criteria and measurements to enhance the recovery and conservation of flora and fauna, particularly threatened species (critically endangered, endangered and vulnerable species). Chile has also agreed on the elaboration of a National Biodiversity Policy.

In addition to these more crosscutting baseline initiatives and available funds for investments (constituting potential sources of co-financing to be leverage during project implementation with the exemption of the contributions from MMA's initiatives which have been committed at this stage), there are several initiatives

closely related to the project that will provide co-financing (most of it confirmed in commitment letters amounting to USD 25.6 million, but some will also be leveraged during the implementation of the project, please see section 1.1.1.c on incremental reasoning below for details on amounts from each source). These initiatives are described below within seven thematic areas of relevance for the SIMEF implementation and continued operation as well as utilization of the information generated for improved forest policies, regulations, planning and management.

## **1. Institutional coordination participation and management framework for the operation of the SIMEF**

**MINAGRI** and **MMA** promote stakeholder participation in their initiatives at regional level. **MINAGRI** through **CONAF** has promoted the establishment of forestry roundtables to foster stakeholder consultation and coordination of forestry initiatives. Valparaiso, Maule, Bio Bio, Los Rios and Magallanes regions currently have active roundtables. The **MMA** on its part has established Regional Biodiversity Operational Committees with the main objective of ensuring stakeholder participation in the design of the Regional Biodiversity Strategies and comprising ministries and representatives of civil society and productive sectors in the regions. These are important existing structures to build on for the regional coordination and involvement in the establishment and operation of the SIMEF.

## **2. Improving technical capacities in forest ecosystem monitoring and assessment**

Chile has made advances in terms of developing and implementing data collection methodologies and protocols for carbon stocks and biodiversity in forest ecosystems. Regarding methodologies and protocols to assess carbon stocks, biomass functions have been developed by **INFOR** and **Universidad Austral de Chile** for a number of native tree species and for Roble-Rauli-Coigue and evergreen forest types. The NFI (**INFOR**), since 2004, are collecting data on species composition, diameter at breast height, tree height, status, form of the trunk, canopy coverage and sub-analysis of natural regeneration and soil, among other variables and prepare the annual report on the Status of Chile's Forest Ecosystems, including carbon stocks in trees (above and below-ground biomass, dead wood debris coarse and fine).

To improve their own technical capacities on carbon stock assessment and monitoring, **CONAF** contracted the **Universidad Austral de Chile** and began implementing in 2013 the project *Dendro-energy and Forest Carbon Monitoring System* in native forests located in the regions from Coquimbo to Magallanes. **CONAF** is also working in developing complementary allometric functions for carbon stock assessments for some native species and has elaborated a "Compendium of allometric functions to estimate the biomass of forest species of Chile". **On the same line CONAF** contracted the **Universidad Mayor** to develop allometric functions for three Mediterranean forest species, namely *Quillajasaponaria*, *Cryptocaria Alba*, *Acacia caven* and *Peumusboldus*.

**INFOR** on its part is developing allometric functions for forage producing forest species in Coquimbo region, namely *Atriplexnumularia*, *Prosopistamarugo* and *Acacia saligna*. In the case of native shrub species allometric functions for only 9 species have been produced. Furthermore, information on the ratio between below-

ground and above-ground biomass (R) has been developed for the native species in the Roble-Rauli-Coigue and evergreen forest types in the regions from Bio Bio to Los Lagos.

In terms of biodiversity methodologies and protocols the INFOR's NFI includes a biodiversity monitoring protocol designed for collecting data on tree and shrub species and vegetation of the temperate forests in the south-central Chile. In 2013 protocols were designed for non-plantae reign and some field tests were undertaken to assess the design in the cases of arthropods, fungi and birds and medium size mammals. The protocols is being piloted in the field during 2014 in an area of approximately 260,000 ha.

**INFOR** has also produced and tested a protocol to identify forest degradation at stand and landscape level. At stand level, NFI ground based stock information on the relationship of the Basal area/ha and Trees/ha has been used as an efficient mechanism for the evaluation of forest degradation. Results are presented through the use of a stock chart that relates data of basal area ( $m^2/ha$ ) and Number of trees per hectare of the tree stand. At landscape level degradation monitoring are based on remote sensing pattern recognition, additionally estimating fragmentation and connectivity. A proposal has been developed for a methodology that combines diversity, richness, species composition, structure and anthropogenic disturbance with spatial attributes of the landscape such as size, shape, connectivity, isolation, and the core area of the forest fragments, using generalized lineal models. Moreover, a protocol for description of occupation pattern of populations of species in native forest remnants has been developed to assess the relations between landscape indices and vegetation structure variables. This protocol links information at landscape level from satellite images with field measurements on vegetation structure to assess the conservation status of threatened species populations that cover restricted territories. In regards to pressure indicators the NFI developed a protocol for a supplementary socioeconomic survey that contains 58 variables related to natural, financial, physical and social assets. The protocol has been piloted in 2012 and 2013 in Los Rios region and the Osorno Province of Los Lagos region.

The **Native Forest Research Fund** issues yearly calls for proposals to which individual and institutional researchers may apply to undertake scientific research that will positively contribute to maintaining the native forest and its biodiversity. The main beneficiaries of this fund have been national universities and INFOR and it is an important financing source for improving scientific and technical capacities for native forest monitoring and assessments. More than 60 research projects have been financed on subjects such as biodiversity monitoring, forest growth, soil conditions, natural pollinators, endemic plants and others.**3. Monitoring and assessment of forest ecosystems**

**INFOR** implements the NFI Programme, which seeks to continuously maintain and improve the development of methodologies, technologies and capacities for forest ecosystem inventory and monitoring in order to respond in a cost-effective manner to the information needs on the status and conditions of the natural forests of the country. Under this programme, INFOR implements the NFI since 2001-2004 with the permanent financial support of the MINAGRI since 2005. The NFI is a statistical tool that provides data and information on the status and conditions of natural forests

from the regions of Coquimbo to Magallanes covering up to date 10.33 million ha, which represent 76.6% of Chile's native forest resources. The inventory provides information on stand, growth, mortality and woody debris, surface area, quality and goods and services provided by forests such as landscape scenic value, carbon sequestration, and others.

The NFI provides data based on measurements in permanent plots that combined with biomass or volume equations and technical coefficients allowing for estimation of carbon contents in the biomass of living trees. Biomass and carbon stock in stand dead trees and coarse woody debris ( $\geq 10$  cm in diameter) (dead wood) are also measured and quantification based on the plots. This information allows estimating the carbon stock per area unit and forest type and combined with the information of area per forest type of the Vegetation Cadastre allows estimating the carbon stored per total area. Carbon flows are estimated through the gain/loss method based on growth increases. Based on NFI information INFOR has published reports on the sustainability of the native forest in Chile. Moreover, INFOR has been for the past two years (2012 and 2013) undertaking the socioeconomic survey of native forest landowners covering the region Los Rios and the Osorno province of the region Los Lagos.

INFOR also implements since 2003 a Climate Change Programme comprising six components: forestry and climate change; vulnerability of native and exotic forest ecosystems; monitoring of forest ecosystems and native forest; detection and evaluation of degraded native forests; and strategic planning to confront climate change. INFOR maintains six inter-related research programmes: 1) national forest inventory; 2) forest strategic information and analysis; 3) management and recuperation of native forests; 4) conservation and genetic improvement; 5) climate change and water; and 6) support to forest and timber small and medium size enterprises. The integration of these programmes allows INFOR to provide methodological approximations to detect and monitor degraded areas within the framework of REDD+ at landscape and tree stand levels.

**CONAF** implements the Native Vegetation Resources Cadastre and Assessment since 1997. The cadastre has the objective of monitoring land uses and producing information on the distribution, coverage and dominant species of the country's native forests. The cadastre applies a 'wall-to-wall' methodology. The maps generated by the cadastre are based mainly on air photographs but lately satellite material, mainly SPOT, has been applied. The Chart of Land Occupation (COT) classification methodology is applied to vegetation based on structural characteristics. This methodology was developed in Montpellier in mid 70's and modified to suit the conditions of Chile. The aim of the COT method is to characterize the vegetation by physiognomic observation, where the degree of 'artificiality' is also estimated by applying discrete classes in a set of known samples. The spatial resolution is 6.25 ha which is currently being increased targeting 1 ha.

**Aerial Photogrammetric Service (SAF)** is managing the SSOT Chilean satellite also known as FASAT C and has since 2012 provided high resolution imageries for the whole country and it is mainly used by the NFI. SAF will provide imageries at a preferential price allowing access to important best quality material.

The project *Sustainable Forest Management of the Andean Patagonian Nothofagus Forests: climate change adaptation and mitigation strategies for management and conservation*, implemented by the **Tropical Agricultural Research and Higher Education Center (CATIE)** and **INFOR** has the objective of identifying the regeneration potential of *Nothofagus* forests under a climate change scenario. INFOR is undertaking a case study in Araucania region to detect and monitor forest degradation of the roble-rauli-coigue forest type and piloting a methodology to monitor changes in stock, which could serve to indicate the improvement in the status of the forest passing from a degraded forest to the full stock forest. By applying this methodology INFOR has produced in 2012 and 2013 forest degradation maps for the Valdivia province in Los Rios region and the Araucania region.

### **3. Information systems and products with relevance for planners and decision makers with influence on forest ecosystems at all levels**

Chile has several non integrated information databases and systems that include information and produces partial thematic reports on different topics related to forest ecosystems. These reports include the CBD reports, UNFCCC GEI report, OECD report and FAO-FRA report among others. These databases and systems include the NFI (INFOR) and the Vegetation Cadastre (CONAF). CIREN elaborates reports for each Chilean Region related to Soils Erosion, Erosion Risk Assessment, Rural Properties. This information is available in the Integrated Cartographic Platform under the Sub-secretariat of Agriculture and can be downloaded from CIREN website. The NFI/INFOR, CONAF and CIREN are currently undertaking an integration process which is an important step to build on when developing the SIMEF.

The FAO technical cooperation project (TCP) "Exemplary Sustainable Forest Management Cases in Latin America and the Caribbean. Strengthening national policies and programs" (TCP/RLA/3404) has the participation of Chile implemented with CONAF. Three main components are included: (1) national capacity building for the evaluation of SFM method; (2) the documentation of SFM good practices in countries to be systematized according to evaluation method; and (3) Virtual exchange of experiences using an electronic forum. Technicians, forest decision makers, forest academia are invited to participate on the discussion forum, and results are to be presented during the next Latin American Forestry Commission, a statutory body of FAO.

### **4. Improving national forest policy, legal and regulatory framework**

Chile has taken an important step forward in the legal framework for forest conservation and management by passing the Native Forest Recuperation Law and the Forestry Promotion Law (see section 1.1.c policy and regulatory framework above) and establishing funding mechanisms for their implementations including the Native Forest Conservation and Management Fund and the Native Forest Research Fund. This is an important baseline that will allow the SIMEF generated information to inform the operational regulations that now needs to be prepared under these laws.

Likewise the SIMEF generated information will also be an important input to other key baseline policy and strategy processes linked to the countries obligations under

the UNCBD and the UNFCCC. MMA is currently leading the process of updating the National Biodiversity Strategy and Action Plan and the 3<sup>rd</sup> National Communication for the UNFCCC is also being prepared, which should be followed by an updating of the National Climate Change Strategy and the National Climate Change Action Plan. Finally, the MMA has also developed a proposal for a national Biodiversity and Climate Change Plan integrating both these issues which is expected to be adopted by the new government.

## **5. Mainstreaming SFM in regional development and land use planning**

The regions of Los Rios and O'Higgins have been selected for regional and local pilot interventions under this thematic area 6 and the thematic area 7 below in this proposed GEF Project.

The **government of Los Rios** has prepared its Regional Development Strategy for the period 2009-2019 and is undergoing the preparation of its Regional Land Use Plan. The **government of O'Higgins** has a Regional Development Strategy for the period 2011-2020 and is implementing its Regional Land Use Plan for 2010-2014. These instruments and their implementation could be an important tool for avoiding degradation of forest ecosystems. The land use planning process is conducted in a participatory manner. Different actors are called for the preparation of an integrated plan, including social, cultural, environmental and financial aspects. The planning process is conducted by the principles of decentralization, social participation, environmental sustainability and integration. Plans included natural resources risk assessment, coastal areas management including forests, protected areas and touristic concessions, among others. Plans are based on the Strategic Environmental Guidelines for Territorial Planning Management. The four pilot communes (Panguipulli, Las Cabras, Coltauco and Doñihue) each have their respective PLADECOS.

An important initiative by **local governments and the MMA** is the Municipal Environmental Certification system based on ISO 14001 standards and the European Commission Eco-Management and Audit Scheme. The municipal certification system promotes the participation of stakeholders in implementation of actions for the protection of the environment and natural resources (e.g. recycling, rational use of water, protection of soil). The certification cycle lasts two years and comprises three certification levels: 1) basic where the parties show their interest in participating; 2) intermediate which certifies progress in implementation of actions; and 3) certification for excellence which certifies the results achieved. There are currently 124 municipalities participating in the system. The communes of Las Cabras and Coltauco have begun a certification process under this Certification System. Las Cabras commune has received a basic environmental certification and two agricultural education schools in Coltauco received an agricultural environmental certification. A total of 29 projects related to natural resources management including natural forest were approved in 2014, to support small enterprises under the umbrella of Model Forest Organization, now led by a community woman. The importance of these projects rests in the fact that local stakeholders acquire the same standard code on forest ecosystems to communicate their interest and problems.

## 6. Conservation, management and sustainable use of forest ecosystems (SFM)

Within the framework of the **Ibero-american Model Forest Network**, Chile has promoted four Model Forests<sup>2</sup>: 1) Panguipulli (Los Rios region), Cachapoal (O'Higgins region), Araucarias del Alto Malleco (Araucania region) and Chiloe (Los Lagos region). The Panguipulli and Cachapoal Model Forests have been selected in the context of this proposal as local level pilot sites within the afore-mentioned regions.

The **Panguipulli Model Forest** was established in 2005 in the Panguipulli commune covering 329,000 ha and a population of 32,000 inhabitants. Members include among others the Municipality, CONAF, INFOR, Secretariat of Agriculture, indigenous communities, Universidad Austral de Chile and Huilo Huilo Foundation. In this Model Forest CONAF implements a forestry extension programme that assists small landowners in preparing technical studies and carrying out forest management practices. Universidad Austral is implementing the *BEST-P Project (Bridging Ecosystem Services and Territorial Planning: a southern South American initiative)*, which includes the preparation of a participatory mapping of ecosystem services. INFOR implements a demonstration area where research on adaptation of forestry to climate change is carried out and has a network of 20 biodiversity monitoring plots in montane forests.

The **Cachapoal Model Forest** was established in 2007; involving 150,000 ha in the communes of Las Cabras, Coltauco and Doñihue with a population of 58,000 inhabitants. The three above mentioned municipalities, CONAF, INFOR, MMA, the Doñihue Communal Association of Neighbours' Councils, and the Association of Beekeepers of Las Cabras, among others, are members of the Model Forest. In this Model Forest CONAF implements management plans focused mainly in managing *quillay (Quillajasaponaria)* and *boldo (Peumusboldus)* for timber and non-timber products as well as fire management practices in agricultural production by issuing fire use permits. The University of Chile undertakes research in Las Cabras commune focusing on the rehabilitation of native forests emphasizing in *quillay* and *boldo*. The municipalities, INDAP and INFOR have established networks to promote and strengthen organizations of small forest landowners.

The main planning instrument of the communes is the Communal Development Plan (PLADECO).

**INDAP** implements the Local Development Programme (PRODESAL) with the objective of improving small farmers' agricultural and livestock production through technical assistance and investment projects. PRODESAL is executed through municipalities, which receive funding to implement a technical team in charge of

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<sup>2</sup>A Model Forest is defined by the Ibero-american Model Forest Network as a sustainable human development landscape that combines agricultural and livestock production, forestry, conservation and tourism and where the local population is organized and plans the management of the natural resources. Fifteen countries are members of the network, which has the objective of promoting knowledge management and exchange of experiences between Model Forests on natural resources management.

providing technical assistance to beneficiary farmers. PRODESAL is implemented at national level, and as such, has interventions in Los Rios and O'Higgins including in the Cachapoal Model Forest.

The objective of the **Native Forest Conservation and Sustainable Management Fund** is to enable the regeneration, recuperation and protection of the xerophytic formations with high ecological value and the preservation of native forests; it also supports the sustainable harvesting of non-timber forests products as well as promotion of sustainable forest management practices in native forests. The research fund promotes scientific research, technology, biodiversity conservation, ecosystem research, training, and assessment of intervention and impact.

**World Wide Fund (WWF)** implements the Temperate Forest Fund with the support of the Committee for the Defence of Flora and Fauna (CODEFF), a Santiago based NGO. The fund supports conservation initiatives in Araucania and Los Lagos regions that generate experiences in the sustainable use and management of native forests and promote the participation of local communities in conservation.

## **7. Carbon baseline and methodologies for Monitoring, Reporting and Verification (MRV) systems**

Within the framework of its own strategy (the National Forest and Climate Change Strategy) **CONAF** established in 2012 the *Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile (PBCCh)*, which seeks to promote market-based approaches and results based payments by linking private forestry initiatives with the carbon markets through trading emission reduction certificates generated by forestry projects. The platform has initially focused its work in developing carbon sequestration project typologies, including definition of technical and legal requirements, and international norms and standards for forest carbon projects. Within the framework of the strategy, the Forest Carbon Partnership Facility (FCPF) approved a Readiness Grant in 2013 that will aid Chile in carrying out a series of activities in the short and medium term, in order to advance its readiness towards results-based REDD+ payments. Chile is expecting to achieve significant advances towards its readiness by the first quarter of 2015, with the formal presentation of a Readiness-Package to the FCPF. Moreover, a *Nationally Appropriate Mitigation Action (NAMA)* in the forest sector has been registered. Both the FCPF grant and the NAMA will support the development of the sequestration project typologies as well as other cross-cutting technical, economic, social and environmental themes.

### *b) Remaining barriers to address threats on global environmental benefits generated by Chile's forest ecosystems*

During preparation of this project baseline studies and assessments identified eight main barriers, linked to the thematic areas mentioned above, that currently prevent an adequate monitoring and assessment of forest ecosystems countrywide and the use of the monitoring information to improve the policy and legal framework as well as the promotion of SFM, incorporating REDD+ and conserving global environmental benefits provided by forest ecosystems.



### **Barrier #1: Limited interinstitutional coordination and management structure for integrating on-going forest related monitoring and assessments and ensuring participation of local stakeholders**

Chile current forest monitoring is based on the Vegetation Cadastre (CONAF) which is devoted to land use monitoring and the NFI (INFOR) which focus on the quantification and the state and condition of forests ecosystem by means of permanent sample plots. CONAF has also started in 2013 the project *Dendro-energy and Forest Carbon Monitoring System* in native forests located in the regions from Coquimbo to Magallanes which will provide information on growing stock. However, this data is actually overlapping with data already generated by the NFI initiative, which is causing inefficient use of resources for forest monitoring.

Although the cadastre and NFI are complementary, CONAF and INFOR apply their methodologies separately and they are not coordinated nor harmonized. These two institutions, as well as other institutions, that are relevant to forest monitoring, work with their own objectives which are not always in accordance with the assignments in the LAW, which is: CONAF is responsible for the monitoring of Land Use and reinforcements of the law meanwhile INFOR is responsible for monitoring growing stock and the state and condition of forest ecosystems. Although they share information there are no formal procedures for better coordination and enhancement of efficiency. Until recently there has also been a strong asymmetry in the budgetary provision between the two institutions also affecting the effective coordination. The lack of coordination is also compounded by the lack of a shared vision between CONAF and INFOR regarding the complementarity of the NFI and the Vegetation Cadastre, resulting in sometimes even contradictory and confusing information and/or products generated by the two programmes. This leads to poor usefulness for decision-makers and other organizations related to the formulation of policies and regulation. This situation affects important decisions and remedial actions related to REDD+ and the conservation of forests ecosystems and biodiversity.

Stakeholder participation is a key aspect for the success of an integrated monitoring and assessment system given the multiple stakeholders involved in the conservation, management and use of forest ecosystem services and biodiversity. The GEF financed *National Capacity Self-Assessment (NCSA) for Global Environment Management*<sup>3</sup> concluded that in practice, participation in Chile has been scarce and needs to be corrected; agreements between the multiple public and private stakeholders are key for the implementation of policies, strategies and plans in order to move forward in the knowledge, valuation, conservation and sustainable use of biodiversity with social support. Although there is a long-standing tradition of participating in bodies such as committees, commissions and councils, there is a certain dissatisfaction, especially of the civil society, given the lack of decision capacity of these bodies, hence participation results in a mere formality. At local level, very few local governments have personnel trained in environmental matters and particularly in forest ecosystem, biodiversity and climate change, which may hinder their chance of participating in coordination or implementing bodies. Moreover, local NGOs and CSOs are in general committed with their day-to-day activities and have a low financial capacity to

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<sup>3</sup>CEAM/UACH 2008. GEF/NCSA project, Chile Self-evaluation of national capacity for biodiversity, climate change and fighting against desertification. Final report and recommendations.

participate and sustain a frequent attendance to meetings that are often held in cities distant from their locations. Locals often have a low level of use of information and communication technologies, which can also hamper participation.

**Barrier #2: Gaps in technical capacities for implementation of an integrated forest monitoring and assessment system and production of timely information on carbon stocks, land use dynamics and the state of forest ecosystems (degradation, biodiversity and habitats).**

As described in the baseline above, the forest monitoring and assessment is in general quite advanced with several new ongoing and planned technical improvements. However, some important shortfalls remain in order to capture threats on global and local environmental benefits generated by forest ecosystems.

The cadastre applies a wall-to-wall methodology where the baseline corresponds to 1997. Although the vegetation cadastre delivers national level information the updating time of the cadastre at regional level does not cover the whole country in one or two years, given the available budget associated to the current methodology. The intercensal periods are different for each region, between 5 and 10 years. This hinders the possibility of updating land use information every two years as required by the UNFCCC. Another shortfall of the cadastre is that it does not identify degraded areas.

The NFI applies remote sensing methodologies, digital terrain models, cadastre maps and every available auxiliary information to provide timely information under a solid statistical sampling targeting the forest ecosystems as a whole and, not only trees. Everything within the limits of the sample is measured and registered from soil to large trees, and visible arthropod, mammals, birds and other animals. Even though the sampling grid is permanent, not all points were measured the first time for logistical reasons. Some points are re-measured in each cycle allowing for calculating mortality and growth and incorporating new measuring points. The period elapsed between measurements is five years but should be shortened to two years to be able to better combine with a future biannual land-use cadastre as per UNFCCC requirements.

The involved institutions in forest monitoring (INFOR, CONAF, CIREN) have the technical capacity to undertake forest inventories, however the number of trained staff is low. INFOR, CONAF and CIREN currently have only 30 trained staffs. INFOR has five data collection brigades (total of 15 members) that collect field data for the forest inventory. Availability of specialized personnel in biodiversity (e.g. taxonomy, zoology, botany) is low. There is a lack of trained staff to monitor carbon in the different components of the forest ecosystem. Expansion of the NFI to an integrated monitoring and assessment system will require that a higher number of personnel be trained in data collection protocols, data processing and development of indicators and products. Incorporation of biodiversity, land use and socio-economic dynamics will require an additional number of field brigades to support collection of data on these variables.

Monitoring of carbon stocks and biodiversity in forest ecosystems faces several constraints. Carbon monitoring must cover the whole country as well as the different forestry ecosystem's sources and sinks and the key IPCC carbon pools. To meet these requirements the existing methodologies and protocols need to be revised and

adjusted as follows: 1) currently, not all forest areas of the country are covered and samplings must be done for the in inaccessible forests and temperate forests of the southern islands from Chiloe to Magallanes; 2) biomass pools are missing or incomplete, namely understory (shrubs and herbaceous plants), fine woody debris, litter and soil carbon; 3) allometric functions for tree and shrub species need to be developed; 4) the relationship between below-ground biomass and above-ground biomass in different vegetation formations has to be estimated; and 5) monitoring indicators need to be developed.

Regarding biodiversity monitoring the relevant institutions (e.g. MMA, INFOR, CONAF) need to harmonize their methodologies and variables in accordance with the NBSAP to ensure that the existing initiatives may be integrated in a single national monitoring system. The NFI's sample design was developed based on the temperate forests of south-central Chile. Mediterranean forests have a different distribution and structural pattern due to excess use and degradation (fragmentation) therefore the sample design must be adjusted. This implies a modification or an intensification of the network of sampling plots under the same sampling design. As afore-mentioned several monitoring protocols have been developed. The sample design for biodiversity monitoring is being currently piloted (2014) in a demonstration unit in Los Rios region; and the protocols for identification of degradation are being applied in Los Rios and Araucania regions. Countrywide application of these protocols however faces the need for budgetary increments.

There is a low level of available information on fauna and flora in general and specifically on fungi and invertebrates, as well as a lack of local indicators. In Chile only 3% of species in fungi and invertebrates have been classified and the classification methodology is based on a public consultation protocol that may not be sufficiently objective. The NFI lacks a number of tools for biodiversity monitoring, namely: inventory of herbaceous plant species; species indicators for mammals, amphibians, birds, functional indicators and anthropic pressure indicators for the different zones of the country (e.g. in south-central Chile the main pressures are firewood extraction and grazing; in north-central Chile the main pressure is agricultural expansion).

Monitoring and assessment of socio-economic drivers of land use change, deforestation and degradation are also missing due to the lack of data and indicators. For instance, grazing in the forests is mentioned as one of the most important drivers of degradation, but the NFI includes only records that need to be developed into statistically useful data to design appropriate indicators. Socio-economic surveys have only been recently incorporated into the NFI (2012, 2013) and piloted in Los Rios and the Osorno Province of Los Lagos.

**Barrier #3: Coverage gaps in current national forest monitoring and assessment both in terms of forest areas covered and data and indicators covered which leaves to incomplete information on the current situation and trends for decision makers and planners to take action.**

The NFI and the Vegetation Cadastre are recognized as important tools to monitor the state and condition of forest ecosystems and targeting sustainable forest management (SFM) and conservation initiatives. However, the current coverage of the NFI is

partial, reaching 76% of the total forest area in the country, and still lacks data and information on: 1) 3.6 million ha of non-direct productive forest ecosystems not covered by the current NFI which contains important biodiversity endemic to Chile in particular the native prehistoric Araucaria forests, Temperate Rainforests, and Alerce forests) in the southern part of the country; 2) all carbon pools for Arica and O'Higgins regions and Southern Islands making stock estimations less precise; and 3) land use changes and socioeconomic drivers affecting the forests. These gaps in information on forest ecosystems affects the usefulness of the current monitoring and assessment efforts for decision making on policies and regulations to target root causes of forest degradation and improve the implementation of SFM incorporating REDD+. Data have been collected for 10 million ha and are lacking for the remaining 3.5 million ha of native forests. There is limited information on native forest biodiversity therefore it is necessary to undertake a national level inventory, including the island areas. Degradation related aspects have not been quantified; this information is of high relevance for the elaboration of sustainable forest management plans, rehabilitation and biological corridors recuperation. Moreover, socio-economic related aspects will allow determining factors that condition or promote deforestation and degradation of forest ecosystems, and on the other hand factors which may incentivise their sustainable use.

**Barrier #4: Lack of cost-effective integration and coordination of information and monitoring systems for an adequate monitoring of forest ecosystems, biodiversity, carbon stocks and land use changes at national level.**

The lack of coordination and integration between in particular the Vegetation Cadastre (CONAF) and the NFI (INFOR), but also other systems and institutions involved in forest monitoring and assessment, makes the entire processes from data collection, processing, and the development of final information products somewhat cost-ineffective. Some efforts have been made to improve the inter-institutional coordination on forest monitoring and assessment, but with little or no results until now.

Mechanisms for collecting and processing of data and development of indicators on coverage, biodiversity, carbon and socio-economic drivers differ between institutions. INFOR, CONAF and CIREN have different data integration and geo-referenced information systems. These three models are not completely compatible therefore the exchange of data between the institutions is difficult. The lack of a single system makes the process of populating the databases and analyzing information inefficient, makes the work of the institutions' personnel more difficult, and deprives users from access to a single national information source, that would ensure the coherence of the national information. The lack of agreed data standardization and management protocols does not allow meeting the demands for user-friendly and harmonized information products to be used by planners and decision-makers at all levels involved in forest use and management. It also hinders the integration of the different institutions' staff, comparison between regions and analysis of trends

The current information - databases, maps, and electronic platforms - is made available through the CONAF, INFOR and CIREN websites but a wider dissemination is limited. There is no mechanism to assess the level of utilization of such information and the relevance of the information generated and offered through

the websites and some publications. For this reason there is no systematic continuous improvement and adaptation of the formats and products for transmitting the information to the various users' needs. The institutions lack a strategy to communicate and disseminate the information targeting the wide range of user groups (national, regional and local governments, NGOs, CSOs, private sector, academia) in a user-friendly format that will promote the use of information in the development of policies, plans and regulations and in SFM incorporating REDD+.

The information generated by the NFI and the Vegetation Cadastre must be adjusted to reach a wider target audience, including planners and decision makers at national, regional and local level. Publication of data in a simple and effective format and disseminating it through user friendly means (e.g. maps of forest ecosystems, biodiversity indicator species, carbon stocks, coverage and land use and land use change) is required to ensure informed decision making processes.

**Barrier #5: Limited availability and use of forest monitoring and assessment data and information by national policy and regulation formulators and decision makers**

The policy, legal and regulatory framework at national and regional levels lack comprehensive and non for formulation of policies, laws and regulations impacting the management, use and conservation of forest ecosystems. Formulation of the legal and regulatory framework is based on the criteria of forestry experts. Although they are renowned experts in the field, their proposals are not always based on hard data to allow for adequate and focused proposals addressing forest degradation drivers and an informed decision making.

The adoption of the Native Forest Law is an important step forward but its operational regulations have not been developed based on concrete information and knowledge on degradation trends and drivers, which is hindering the full implementation of the law and its objectives.

**Barrier #6: Limited availability and use of forest monitoring and assessment data and information by regional and local development and land use planners and decision makers**

Regional and local level planners and decision makers lack comprehensive, non ambiguous, and adaptable to local needs information for an integrated regional and local development and land use planning incorporating the conservation of the integrity of forest ecosystems and promoting their sustainable use. Regional Development Strategies, Regional Land Use Plans and Communal Development Plans are designed with information coming in great measure from the population and agricultural census, that is, basically sector specific information. Comprehensive information from the different sectors, including the forestry sector, accessible and adaptable to local level needs is lacking.

**Barrier #7: Limited availability and adequateness of forest monitoring and assessment data and information for local SFM practitioners and decision makers and lack of technical support for the adoption of SFM practices**

SFM experiences in Chile's native forests have been scarce, punctual and short-lived. Until now only four management plans (harvest authorizations) have been authorized and financed since the Native Forest law was passed in 2008 covering less than 100 ha. Although a research fund has been implemented to improve native forest management, research in this sense has not been sufficient. During the first four years of implementation of the law less than 5% of the available funds were executed. The reasons refer to cumbersome procedures, low amount of financial incentives and lack of permanent and long-term assistance. Realistic economic incentives and SFM practices for native forests need to be established. Other constraints to SFM are the lack of research to determine sustainable harvesting limits of timber products and lack of baseline information on the value of the volume of plantations of native species to determine the harvesting limit of these species. A wide array of non-timber products is used in Chile from medicinal plants, seeds, utensils, edible fungi and others; however they are mostly sold in informal markets, which make it difficult to quantify the transacted volume and value of these products. Furthermore, there is no current information on the monetary contribution of native forest timber and non-timber products to the forestry gross domestic product. Local knowledge of small farmers and indigenous peoples – both men and women - are essential to improve the comprehensive knowledge of forest resources and the formal and informal governance of the resources and needs to be taken into account. Consultation mechanisms need to be established to systematize this knowledge and use it to establish realistic criteria for the development of sustainable forest management plans.

**Barrier #8: Lack of harmonized baseline information to be used in MRV systems needed by forest climate change mitigation projects in order for them to access funding from voluntary carbon markets**

CONAF has begun to explore the trading of carbon credits from forestry initiatives in the voluntary market. However, the development of MRV systems is incipient. A national typification of the vegetation systems has been developed but the information for carbon monitoring needs to be updated permanently and a harmonized MRV system needs to be developed for areas with potentials for generating carbon credits to ensure access to the carbon markets.

*c) Incremental reasoning for the use of GEF resources*

The proposed long term solution to these shortcomings is developing an integrated forest ecosystem monitoring and assessment system expanding the NFI to the whole country and incorporating carbon stocks and biodiversity to support the development of policies, regulations and SFM practices and incorporating REDD+ and biodiversity conservation in forest ecosystems. This will ensure systematic monitoring of forest ecosystem goods and services, cost-efficient and timely supply of information and data on the state of the forests and the trends in land-use dynamics, and support the biannual reporting on GHG inventory and carbon balance to the UNFCCC. To address the above-mentioned barriers and achieve global and local environmental benefits from Chile's forest ecosystems, the GEF resources will be incrementally invested to the above-mentioned baseline initiatives, as detailed below:

## **Component 1: Development of institutional coordination framework and capacities for the implementation of the SIMEF**

In order to overcome barriers #1 and #2 (see subsection 1.1.1.b), Component 1 will seek to establish a coordination mechanism and develop the required capacities among all institutions related to forest ecosystem issues to secure the implementation of the SIMEF initiative and the timely supply of information necessary to report on carbon stock changes, land use dynamics and forest ecosystems integrity status and trends.

Co-financing under Component 1 will address the establishment and operation of the SIMEF's interinstitutional framework comprising the National Steering Committee, Executive Secretariat, Technical Advisory Committee, Regional Participation Committees, as well as capacity building through the development of protocols for data collection and processing and training for institutional staffs and key stakeholders.

Co-financed activities include: i) establishment and operation of the National Steering Committee, Executive Secretariat, Technical Advisory Committee, and Regional Participation Committees (including meetings, official travel, hiring of personnel, elaboration of annual work plans and preparation of progress reports); ii) review and adjustment of existing methodologies and protocols (carbon stocks, biodiversity, land use, socio-economic dynamics); and iii) capacity building of INFOR, CONAF and CIREN staff, data collection brigades and Regional Participation Committees (design and implementation of training workshops and courses, official travel, venues, trainers). To implement these activities, in-kind co-financing contributions have been committed as follows:

- CONAF will provide an amount of USD 271 800;
- INFOR will provide an amount of USD 271 800;
- CIREN will contribute USD 63 600;
- MMA will provide the sum of USD 185 605; and
- FAO will provide USD 55 000

The GEF incremental financing of USD 1 082 516 for Component 1 will address the strengthening of the institutional framework and capacity development through: 1) technical expertise for operation of the SIMEF Executive Secretariat (General Coordinator, four Heads of Programmes and Administrative Assistant); 2) travel expenses for supporting and monitoring activities of the Executive Secretariat, Technical Advisory Committee and Regional Participation Committees; 3) international technical assistance to develop a protocol for data collection and monitoring of land use and land use changes; 4) national and regional level training workshops for INFOR, CONAF and CIREN staff, Regional Committees, and data collection brigades.

## **Component 2: Implementation of SIMEF**

With the objective of removing barrier #3 and part of barrier #4 (see subsection 1.1.1.b) Component 2 will support expanding the current NFI to cover the whole country and adding socioeconomic indicators to the vegetation attributes and land-use

changes monitoring, amplify the monitoring of biodiversity data and indicators, and add biomass pools to carbon monitoring to obtain a complete operational SIMEF. The component will support the collection and analysis of statistically valid data and information covering forest ecosystems country wide, and the calculation of indicators for: a) carbon stocks; b) forest habitat conditions for biodiversity; c) drivers for land-use changes impacting forest ecosystems; and d) socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+.

Data standardization and management protocols and a data integration model will be jointly developed by INFOR, CONAF and CIREN as part of the establishment of the SIMEF platform. The information generated by the SIMEF will be disseminated through thematic maps on forest ecosystems, species distribution, carbon stock and land use changes supported by a geo-database and a WEB based information system giving user groups easy access to the generated data and information. Furthermore, thematic reports oriented to different users will be published on forest carbon stocks and fluxes, forest ecosystem biodiversity status, dynamics in land-use changes impacting forest ecosystems, or socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+.

In this context, cofinanced activities under Component 2 will include: i) development of data integration model for the information system; ii) development of a data standardization protocol; iii) design of a web mapping system; iv) assessment of institutional data and capacities v) establishing the interoperability between the databases and information systems in the participating institutions; vi) collection, processing and analysis of biophysical, biodiversity and land use information using the protocols developed under Component 1 and uploading to the SIMEF database; and vii) preparation and dissemination of maps and reports to the target audiences. To implement these activities, the following cofinancing has been committed:

- INFOR will provide USD 9 715 223 (USD 3 907 745 in cash and USD 5 807 469 in kind);
- CONAF will cofinance the sum of USD 4 893 778 (USD 1 631 320 in cash and USD 3 262 458 in-kind);
- CIREN will cofinance an amount of USD 1 676 931 (USD 1 542 339 in cash and USD 134 591 in-kind);
- MMA will provide USD 134 591 in-kind cofinancing;
- SAF will provide in-kind co-financing in the amount of USD 3 026 504; and
- FAO will provide a cash contribution of USD 67 000 through a technical cooperation project and USD 20 000 in-kind.

The GEF incremental financing of USD 3 753 917 for Component 2 will provide assistance for the implementation of the SIMEF through: i) field brigades for collection of biophysical, biodiversity and socio-economic data; ii) consultants for the development of the SIMEF data model, data standardization protocol, webmapping system and data quality control; iii) establishment of the baselines for the pilot sites where the Component 3 pilots will be undertaken; iv) studies on land use change (data collection, processing and development of SFM practices); tree biomass and shrub biomass; v) procurement of satellite images to support field data collection and studies; and vi) procurement of equipment to support the implementation of SIMEF



(e.g. webmapping server, field equipment for brigades including datalogger, GPS, laser distance meter, vertex).

### **Component 3: Application of the information generated by SIMEF in local, regional, and national policies and regulations, land-use planning and in support of SFM incorporating REDD+**

In order to overcome barriers #4-8 (see subsection 1.1.1.b) Component 3 will facilitate that the information generated by the SIMEF is used to improve policies, regulation and planning processes that promote SFM, REDD+ and conservation of biodiversity in forest ecosystems at local, regional and national levels. To this end this component will support the development and application of a special tool for tracking and assessment of the utilization of data, maps and reports generated by the SIMEF by local, regional and national governments and other institutions. It will also support the implementation of a SIMEF communication and dissemination strategy and provide technical assistance to a series of pilots on the utilization of the information generated by the SIMEF to be implemented at national, regional and local levels. These pilots are: 1) strengthening forest legal and regulatory framework with SIMEF information at the national level; 2) mainstreaming SIMEF information in RLUPs and PLADECOS at the regional and communal level; 3) improving local SFM guidelines and practices with SIMEF information at local level; and 4) establishing the carbon baseline for MRV system with SIMEF information.

In-kind cofinancing contributions have been committed to undertake the following activities: i) design and implementation of an outreach strategy targeting different audiences; ii) participating in dialogue roundtables on the Native Forest and Forestry Promotion Laws and elaborating regulations for the Native Forest Law; iii) signing of agreements with stakeholders in pilot regions and sites; iv) data collection at pilot site level, processing and analyzing results (carbon stocks, biodiversity, land use); v) organizing and implementing stakeholder training workshops; vi) implementation of SFM demonstrations; vii) mainstreaming of SIMEF information in regional land use plans and communal development plans; viii) production of reports on emissions reductions/increases and MRV guidelines. Co-financing disaggregated by sources are:

- INFOR will contribute an amount of USD 1 684 740;
- CONAF will provide USD 1 804 237;
- CIREN will provide USD 259 912;
- MMA will contribute with USD 251 983; and
- FAO will contribute USD 180 000.

The GEF incremental financing of USD 1 158 251 for Component 3 will be used to: i) provide technical assistance to develop operational regulations for the Native Forest Law in regards to non-timber forest products, SFM/REDD+ incentives, biodiversity criteria for designation of conservation forests, and financing of technology transfer; ii) set up dialogue roundtables for the Native Forest and Forestry Promotion laws; iii) develop SFM practices and implement local SFM pilots; iv) organize and implement planning and awareness raising workshops to promote mainstreaming of SIMEF information in regional land use plans and communal development plans; v) implement an outreach strategy to disseminate regional and communal plans, and

SFM strategies; and vi) elaborate a carbon baseline for the development of an MRV system.

### 1.1.2 FAO’s comparative advantages

FAO has a long track record and significant expertise in SFM, NFI and development of national forestry policy frameworks and implementation of projects related to the forestry sector, such as: (i) mitigation of climate change through the implementation of projects related to conservation and sequestration of carbon in forest ecosystems; (ii) conservation and sustainable use of natural resources and planted forests, including aspects related to health and vitality of forests, prevention, control and management of fires, recuperation of germoplasm and genetic resources. Particularly in Chile, FAO collaborates on specific projects such as: 1) Criteria and indicators of sustainable forest management (Montreal Process); 2) Compilation of exemplary cases for sustainable forest management; and 3) Global forest resources assessment (FRA) where INFOR is a member of the advisory committee that identifies global variables for international reporting and agrees on global forestry definitions. Furthermore, forestry political and institutional aspects have also been jointly elaborated with the government of Chile as well as support to small forest enterprises and forestry information systems.

The methodology that FAO uses to support the countries in elaboration of NFIs facilitates information related to forestry resources uses. It also helps to document land-use dynamics including land-use changes, deforestation, and degradation and facilitate monitoring through permanent sample plots. This is an innovative approach compared to traditional forest inventories, relevant for a changing environment where socio economic and physical dynamics need to be monitored. This global methodology, which has been used in more than 64 countries throughout the world with national and local adaptations, allows the assessments of key common variables which have impacts on forest policies and permits monitoring not just of forest management practices but also forestry policies and legislation

### 1.1.3 Participants and other stakeholders

The table 1.1 below summarizes the key stakeholders to be involved in project implementation and their respective roles in the project.

<b>Stakeholder</b>	<b>Interest / Roles in project</b>
National Forestry Institute (INFOR)	Execution partner. Will be responsible for the management of the database, the data collection in relation to the expanded sampling of the NFI, data quality control, data processing, generation of emission factors, calculation of changes in carbon stocks, and will describe the trends of forest biodiversity and the stability of the forest ecosystems. Permanent member of the SIMEF National Steering Committee. INFOR Regional Offices will participate in the Regional Participation Committees. Project co-financier.
National Forestry Corporation (CONAF)	Co-execution partner. Will be responsible for the monitoring of land-use changes including collection of sample data, based on a methodology of multi-temporary analysis of satellite images. Permanent member of the SIMEF National Steering

<b>Stakeholder</b>	<b>Interest / Roles in project</b>
	Committee. CONAF regional offices will participate in the Regional Participation Committees. Project co-financier.
Renewable Natural Resources Information Center (CIREN)	Co-execution partner. Will be in charge of data and geo-spatial information dissemination (generated by INFOR and CONAF) under a concept of user-friendliness and using webmapping technology. Permanent member of the SIMEF National Steering Committee. As possible, it will participate in the Regional Participation Committees. Project co-financier.
Ministry of Environment (MMA)	Will be a permanent member of the National Steering Committee. Will participate in the Regional Participation Committees through the Regional Ministerial Secretariats (SEREMI). Project co-financier.
Regional and Administrative Development Sub-secretariat (SUBDERE)	Will be invited to the National Steering Committee. Will participate in the Regional Participation Committees. SUBDERE will be a key user of SIMEF information for the development of regional policies and strategies based on accurate information and will contribute to replication of mainstreaming experiences.
National Agricultural Development Institute (INDAP)	Will participate in the dissemination of regional land use plans and communal development plans that mainstream valuation of forest ecosystem services and biodiversity, contributing to replication.
Regional Governments (GORE)	Will participate in the Regional Participation Committees. GOREs and COREs (Regional Councils) will be key partners to promote local consultations for the collection of data, generation of information, and dissemination of findings. The GOREs O'Higgins and Los Rios will participate in pilot interventions addressing the mainstreaming of valuation of forest ecosystem services and biodiversity in their regional land use plans.
Communal Governments (Municipalities)	Will participate in the Regional Participation Committees. The municipalities of Panguipulli (Los Rios), Las Cabras, Doñihue and Coltauco (O'Higgins) will participate in pilot activities to mainstream valuation of forest ecosystem services and biodiversity in their Communal Development Plans. They will be key partners in supporting project activities through mobilizing local human resources, professionals and providing infrastructure and facilities.
Cachapoal Model Forest (Members: Municipalities of Las Cabras, Doñihue and Coltauco; CONAF; INFOR; MMA; Association of Neighbors' Groups of Doñihue; Beekeepers' Association of Las Cabras, others)	Project pilot site. The Model Forest will participate in the Regional Participation Committee and the Technical Advisory Committee, providing local knowledge and training on biodiversity, cultural and ethnic values.
Panguipulli Model Forest (Members: Municipality of Panguipulli; CONAF; INFOR; SAG; indigenous communities; Universidad Austral de Chile;	Project pilot site. The Model Forest will participate in the Regional Participation Committee and the Technical Advisory Committee, providing local knowledge and training on biodiversity, cultural and ethnic values.

<b>Stakeholder</b>	<b>Interest / Roles in project</b>
FundaciónHuiloHuilo; others)	
United Farmers and Indigenous Peoples Movement (MUCECH)	Will participate in the Regional Participation Committees and the Technical Advisory Committee. Will contribute with local knowledge issues.
NGOs	Will participate in the Regional Participation Committees
Universities	Will participate in the Technical Advisory Committee
Private sector	Will participate in the Regional Participation Committees; will support the design of thematic reports targeting private sector users.

#### **1.1.4 Lessons learned from past and related work, including evaluations**

In the context of National Forest Inventories and Assessment, FAO has a well-documented experience since 2000, where some activities at national scale have been implemented in Central America (Costa Rica, Guatemala, Nicaragua, Honduras) and more recently (taking in consideration REDD+ needs), Mexico, Panama, Ecuador, Peru, Paraguay and Brazil. FAO experience on NFI, has been as well supported with the lesson learned outside Latin America, in countries such as Tanzania, Congo, Zambia, Viet Nam, Lebanon among others. New protocols of data collection and tools have been developed and adapted to country specific needs. Lesson learned/experiences sharing, and south-south collaboration have been an important components of FAO support on NFI. All FAO experience and lessons learned, will be compiled in a set of Voluntary Guidelines on National Forest Monitoring, in order to facilitate activities of member countries in Forest Monitoring and Assessment. These lessons learned and guidelines will as such also benefit this project during its implementation.

A number of SFM lessons have been identified that will be taken into account especially under Component 3 of the project when designing and implementing the foreseen pilot interventions (see details in Section 2).

FAO has identified several important lessons learned from experiences in sustainable forest management in Latin America<sup>4</sup>:

- Duly organized grass-roots organizations with strong and inclusive leaderships are necessary for the success of forest management processes;
- Inclusive decision making is a constant challenge that needs to be taken into account in community forest management;
- A second tier organization that groups grass-roots organizations may be decisive to help communities advance their natural resources management processes, acting as a catalyzer of the real interests and needs of the communities;
- Systematic assistance and the joint work of diverse institutions is necessary to help young community organizations to advance toward SFM, from planning and implementation to monitoring and oversight;
- The role of the State is key when working with communities. A decisive and sustained support to capacity development in SFM is needed;

<sup>4</sup>FAO (2010). Casos ejemplares de manejo forestal sostenible en ALC. Elaborado por Casaza, J. y Sabogal, C. Junta Castilla de León/FAO. RLC. Chile

- The institutional and legal framework should be favourable for producers to respond to economic incentives. Trust between governmental authorities and the institution in charge of promoting actions or projects is a key element;
- Resources invested in the research applied to forestry, forest management and industry issues have a notable incidence in achievement of SFM as well as positive impact on economic and productive results.

The FAO financed project *Strengthening of forestry development based on a sustainable and participatory approach in Araucania* identified the following lessons (2009):

- It is essential for long term success that forest management be supported by a horizontal policy involving all environmental components that interact with forests (biodiversity, non-timber products, fauna);
- Forest landowners own a major part of the forests that can be managed in the medium and long term, therefore it is necessary to develop permanent technical assistance and training initiatives to increase coverage of landowners in the future;

The Ibero-American Model Forest Network, based on the work undertaken in the Cachapoal and Panguipulli Model Forests identified the following success factors when working at local level (2013):

- Active participation of the people within the framework of a knowledge construction process. This implies among other aspects, participatory identification of forest ecosystem services, permanent discussion in regards to the dimensions involved in ecosystem valuation (ecosystem services/functions, productive and cultural functions) through dialogues, training, field days, technical assistance and respect for the livelihoods in the territories.
- Presence of local institutions or bodies that facilitate the participation of public and private stakeholders (e.g. Model Forest, Community Environmental Committee, Water roundtable, protected area Consultative Committee);

The CONAF provincial office in Cachapoal implemented a research between 2009-2010 to develop forest management models for small forest landowners that identified the following lessons:

- Producing multiple products (timber and non-timber products) that generate incomes for landowners is important to promote the recovery and sustainable management of native forests.
- Technical assistance is key to improve production in a sustainable manner and motivate the participation of small and medium landowners in the calls for proposals of the Native Forest Fund.

The Project *Conservation and Sustainable Management of the Native Forest* implemented by CONAF-GIZ/DED (1991/2006) identified as its key lesson that it is very important for small forest landowners to receive long-term training and technical assistance and incentives to cover management costs.

### **1.1.5 Links to national development goals, strategies, plans, policy and legislation, GEF and FAO's Strategic Objectives**

#### *a) Alignment national development goals and policies*

The project is consistent with the current policy framework in Chile and policies currently under development in relation to biodiversity sustainable use and conservation and climate change mitigation from land-use-changes, deforestation and forest degradation (see section 1.1.c).

Chile has set eight development goals that cover the minimum conditions required to improve the livelihoods of the population, with specific targets in the fields of poverty, education, health, gender equality, environmental protection and development cooperation. The SIMEF is consistent with and will directly contribute continuously to Goal #7: *To ensure environmental sustainability* and particularly the following targets: 1) *Integrate the principles of sustainable development into country policies and programs and reverse loss of environmental resources*; and 2) *Reduce biodiversity loss, achieving, a significant reduction in the rate of loss*. Through systematic monitoring of forest ecosystems the SIMEF will contribute with essential and timely information to track progress towards achieving Chile's environmental development goal and targets, providing information and knowledge on current status and future trends of the global environmental benefits provided by the country's forest ecosystem services (carbon stocks, biodiversity, soil conservation and nutrients recycling).

The project is coherent with the National Forest and Climate Change Strategy. It will support the strategy by elaborating a carbon baseline that will serve as an input for the development of MRV Systems within the framework of the Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile (PBCCh). This will help advancing toward the establishment of an enabling framework for trading emission reduction certificates from the forestry sector.

The SIMEF will support the implementation of the Native Forest Law by developing operational regulations to improve the law. These regulations will target the promotion of non-timber products; defining criteria for designation of forest set-asides for conservation purposes; incentives for conservation and rehabilitation of native forests; and financing for SFM technology transfer. These regulations will also help to improve funding and incentives for SFM channelled through the law's native forest and research funds.

The SIMEF will also support the improvement of Regional Land Use Plans and Communal Development Plans by generating information to help mainstream the valuation and conservation of forest ecosystem's biodiversity and carbon stocks in these plans. Monitoring of biodiversity and carbon stocks will allow for systematic supervision of the forest ecosystems and inclusion of targeted conservation measures in land use planning and zoning and use regulations.

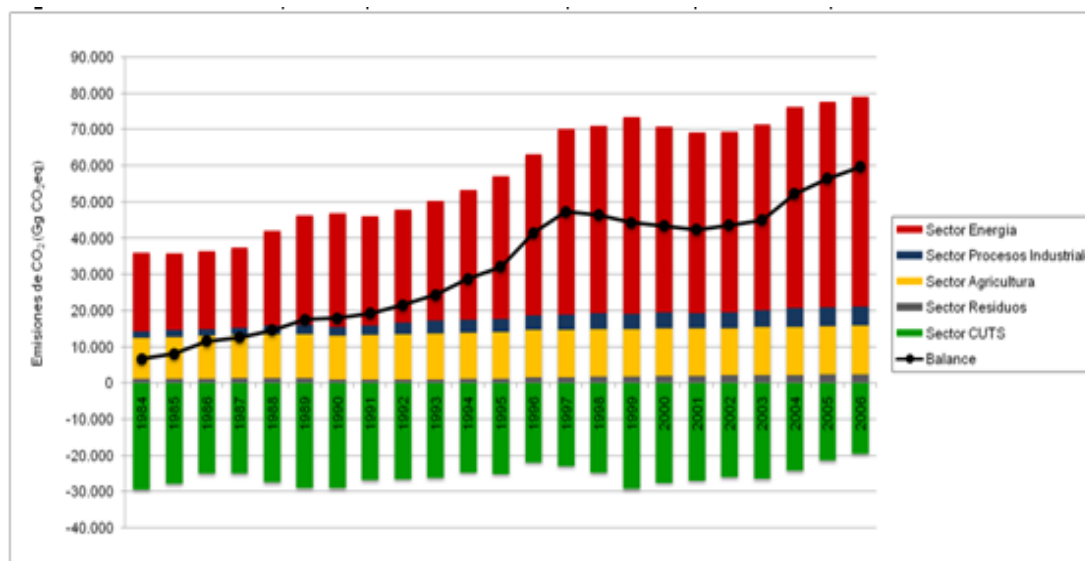
*b) Alignment with the NBSAP, NIPs, NAMA*

The project is aligned with the National Biodiversity Strategy, which was approved in 2003, and its Action Plan, approved in 2005, (NBSAP) including: ecosystem and species conservation, sustainable productive practices, intersectorial coordination, capacity building, and the enhancement of available information on biodiversity and ecosystem services and threats. The NBSAP includes two main instruments for biodiversity conservation which are the National Policy on Protected Areas under which the National System of Protected Areas has been created and the National Policy on Protection of Threatened Species. The proposed project will support the objectives of both these instruments by providing systematic monitoring and harmonized information on biodiversity in forest ecosystems which will allow for the adaptive adjustment of management plans for forest ecosystems and species conservation both outside and inside protected areas. Likewise, the monitoring of biodiversity using key indicators for forest species and ecosystem health will allow for systematic supervision of these ecosystems and species and inclusion of targeted conservation interventions in land-use planning and sector development policies and regulations as well as in the Regional Biodiversity strategies which are being developed under the framework of the NBSAP.

As part of the updating and alignment of the NBSAP with the 2020 Strategic Plan and the Aichi goals agreed under the Convention on Biological Diversity (UNCBD) the Ministry of Environment (MMA) has the objective of designing a well informed National Biodiversity policy, currently under discussion by the authorities. In this context the proposed project will provide valuable harmonized information on biodiversity and forest ecosystem on regular bases and allow for prioritizing the allocated of resources for conservation approaches to specific areas of interest and direct management instruments to threatened biodiversity and forest ecosystems. As part of the updating of the NBSAP, but also as part of the implementation of the National Climate Change Plan, the MMA has prepared a proposal for a Biodiversity and Climate Change Plan, which is expected to be approved by the new government in office since March 2014. The basic idea is to take an integrated approach to climate change mitigation and biodiversity conservation (two areas which have previously been treated separately) especially in the land-use sector. The forest ecosystem approach to inventory and monitoring of forest resources, including biodiversity as well as carbon indicators, taken by the proposed project is fully in line with this integrated approach and the proposed project will be able to inform the development of the Biodiversity and Climate Change Plan as well as the updating of the NBSAP expected to be submitted to the UNCBD in June 2015.

The project is aligned with the Second National Communication on Climate Change, 2011 to the UNFCCC secretariat. Chapter II of this document provided the estimations of GHG emissions from different sectors based on the GHG National Inventory shown in Figure 1 below. The inventory on the LULUCF (sector CUTS in Figure 1) was made using very basic information on CO<sub>2</sub> emissions and carbon sequestration from the expansion of forest biomass. Forest ecosystems seem to have an important positive impact on Chile's carbon balance even though decreasing since 1999.

**Figure 1.1** Emissions, sequestration and GHG balance in Chile (1984-2006)



In chapter VI of the second National Communication on CC, Chile’s commitment to contribute to the global efforts in climate change mitigation and adaptation is highlighted. In 2010 Chile volunteered to do an effort to reduce the countries GHG emissions assuming a commitment to remain 20% below the projected emissions for the period 2007-2020 (Appendix II Copenhagen Agreement). To achieve this goal Chile has identified priority actions in energy efficiency, non-conventional renewable energy and in LULUCF. From 2011 Chile has also began the implementation of the Agreement of Cancun that for the LULUCF and REDD requires the development of MRV systems and an increased frequency (2 years) in the reporting to the conventions on national GHG inventory. Chapter VI of the second National Communication on CC also emphasises the need of developing capacities in the country to further improve the GHG inventory report. The SIMEF and the proposed project will be a crucial support to fulfil this need and to improve the quality and frequency of the GHG inventories allowing for better prioritized actions of climate change mitigation through LULUCF and REDD+.

*c) Alignment with BD, CC and SFM/REDD+ GEF focal area strategies*

The project is a multifocal area project focusing on establishing an Integrated Forest Ecosystem Monitoring System (SIMEF) providing periodic updated information on the state of forest ecosystems the related biodiversity and carbon stocks and fluxes for improved SFM policies, regulations and practices as well as land-use planning at national, regional and local levels. It is thus consistent with the following GEF strategic objectives:

- Biodiversity Focal Area – Objective 2 (BD-2): *Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors*;
- Climate Change Focal Area – Objective 5 (CCM-5): *Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry*; and
- Sustainable Forest Management / Reduction of Emissions from Deforestation and forest Degradation, foster conservation, sustainable management of forests, and



enhancement of forest carbon stock – Objective 2 (SFM/REDD+ -2): *Strengthen the enabling environment to reduce GHG emissions from deforestation and forest degradation and enhance carbon sinks from LULUCF activities.*

In relation to the alignment with BD-2 the project will support the implementation of a periodic monitoring of habitat conditions for global important biodiversity in forest ecosystems (e.g. Valdivian Ecoregion). This information tool will support the mainstreaming of biodiversity conservation in forest landscapes and ecosystems and the LULUCF management sector. In particular this will be done through mainstreaming in policy and regulatory frameworks in the forestry sector and sectors impacting on forest ecosystems and systematic incorporation of the valuation of forest biodiversity in land-use planning at the regional and local level. The project will develop operational regulations for the Native Forest Law as well as regional and local level zoning and use regulation to stop further habitat fragmentation, facilitate medium-term improved connectivity between already fragmented habitat and support forest rehabilitation as well as specific measures for the conservation of threatened species in each pilot case. Moreover, the project will support mainstreaming of information generated by the SIMEF in regional land use plans and communal development plans. SFM pilots in forest landscapes will also be supported incorporating BD and habitat conservation based on the systematic information generated by the SIMEF. The pilot areas for these interventions are the regions of O'Higgins and Los Ríos, which are particularly affected by forest habitat fragmentation and degradation. These experiences will provide the basis for mainstreaming biodiversity conservation in forest landscapes and the forestry sector through improved policy, regulatory and planning frameworks and management strategies.

The project will support CCM-5 through the addition of a carbon monitoring component to the national forest inventory as part of the establishment of the SIMEF. This will support the enhancement of carbon stocks in land-use planning and forest and non-forest management practices supported by the project's pilots on improved forest policies and regulations, mainstreaming of forest ecosystems conservation in land use planning and improved SFM practices. The periodic carbon monitoring as part of the SIMEF will serve as an important feed back to decision-makers on the effectiveness of such planning and management practices in relation to increased carbon stocks and if any corrections in approaches needs to be taken. The pilot interventions, mentioned above, on stopping forest habitat fragmentation, facilitate medium-term improved connectivity through forest restoration and improved SFM will contribute to increase carbon stocks in particular affected regions.

In relation to SFM/REDD+-2 the project will support the development of capacities of forestry-related institutions (CIREN, CONAF, INFOR) in carbon monitoring in the different forest ecosystems in Chile by developing cost-efficient protocols to collect data and estimate carbon stocks, including all forest carbon pools. The effectiveness of SFM/REDD+ policies and practices in terms of avoiding emissions from deforestation and forest degradation and increasing carbon stocks will be periodically monitored. The SIMEF will support the establishment of Measurement, Reporting and Verification (MRV) systems through a pilot to establish the carbon baseline for an MRV system under CONAF's "Platform for the Generation and Trading of Carbon

Credits from the Forestry Sector in Chile” to help develop capacities in utilizing the SIMEF information for certifying forest derived carbon credits.

As a whole, the project will support the capacities of the public sector institutions related to promoting conservation and sustainability of forest ecosystem services in Chile based on systematic generated and timely information on key biodiversity, carbon, land-use-change and socioeconomic indicators. User-friendly information and products (e.g. thematic maps and reports) will be produced and disseminated to the different user groups (national and local governments, NGOs, CSOs, private sector) to promote utilization of SIMEF information for improved SFM and conservation of forest ecosystem services.

#### *d) Alignment with FAO Strategic Framework and Objectives*

The project is in line with FAO’s Strategic Results Framework (2014-2019) and particularly with Strategic Objective 2 (SO2) *Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner*, and its Outcome 3 (OO3) *Stakeholders make evidence-based decisions in the planning and management of the agricultural sectors and natural resources to support the transition to sustainable agricultural sector production systems through monitoring, statistics, assessment and analyses*.<sup>5</sup>

Moreover, the project is coherent with FAO’s Regional Priorities for Latin America and the Caribbean and is aligned with the priority area *Climate change and environmental sustainability*: “[provide assistance to governments for] strengthening national programmes for the sustainable management of natural resources, agroclimatic risk reduction, mitigation of emissions and adaptation of the agriculture sector to climate change, in the new context of low-carbon development”<sup>6</sup>. The project will in particular contribute to the FAO’s Regional Initiative on family farming and rural territorial development by supporting governments and other national stakeholders to reduce rural poverty, building on its comparative advantage in looking integrated at natural resource management, rural development, and sustainable livelihoods. It will bring together FAO’s expertise in areas of forestry, agriculture, land use, and natural resources management, as well as that of its strategic partners in providing technical and policy support and strengthen national capabilities. Project will provide information and data for appropriate decision making and application of best forestry practices. Project information will also be used for policy monitoring, at regional and national level.

Finally, the Project is in line with the Country Programme Framework agreed between FAO and the government of Chile for FAO collaboration with the country work in 2013 - 2014. The project will in particular contribute to the natural resource management and adaptation to climate change priority area and its outcome: *improve management and sustainable production of agricultural, forestry and fisheries systems and their adaptation to climate change*.

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<sup>5</sup> In the FAO strategic vocabulary agriculture includes the fisheries and forestry sectors

<sup>6</sup> See *Areas of Priority Actions for Latin America and the Caribbean for the Following Biennium (2014–2015)*, taking into account the summary of recommendations of regional technical commissions, 32<sup>nd</sup> FAO Regional Conference for Latin America and the Caribbean. Buenos Aires, Argentina, 2012.

Fuente: <http://www.fao.org/docrep/meeting/024/md240e.pdf>

## **SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS**

### **2.1 PROJECT STRATEGY**

The proposed project will address the threats to global environmental benefits provided by forest ecosystems in Chile by removing the identified barriers. This will be achieved through providing Chile with an excellent opportunity to expand the current NFI design to cover the whole territory of the country and including non-productive native forest, biodiversity and socioeconomic variables showing drivers for forest degradation and land-use changes, thus, creating an Integrated Monitoring System of Forest Ecosystems (SIMEF).

The project will implement actions at national, regional and local levels. The project will develop an institutional coordination framework and capacities for the implementation of the SIMEF at national and regional levels. A smooth coordination mechanism and enhanced capacities will help secure the implementation of the SIMEF initiative and the timely supply of information necessary to report on carbon stock changes, land use dynamics and forest ecosystems integrity status and trends. The coordination mechanism will build on the strengthening of the already existent institutional coordination and collaboration framework of MINAGRI (INFOR, CONAF, CIREN), MMA, Ministry of the Interior, regional and local governments and key stakeholders. Building on this existing framework will help ensure the information generated by the SIMEF is the result of user needs and demands based on a bottom-up approach. Moreover, it will contribute to the sustainability of project outcomes.

The project will expand the current NFI framework to the whole country including the islands and archipelagos in the South and adding socio-economic indicators, to better understand drivers behind land-use changes and forest degradation processes. In this regard, the necessary steps toward the implementation of a SIMEF providing efficient and timely information will include: a) calculation of suitable emission factors and National Greenhouse Gases Inventory in Chile; b) LULUCF and REDD+ processes; c) establishment of carbon baselines for MRV systems to enable the participation in carbon markets securing national and international credibility of the provided data and information; d) identifying trends and drivers related to biodiversity losses and improve conservation of biodiversity in forest landscapes; and e) accounting for forest ecosystem integrity as a whole. The establishment of the SIMEF will constitute an inter-institutional effort that will also foster an enhanced collaboration and coordination framework among the MINAGRI institutions (INFOR, CONAF, CIREN) and the MMA (Climate Change Office and Natural Resources Division).

With improved official data on the state and conditions of forest ecosystems and their services, the project will support the government to better identify suitable corrective actions on already existing instruments related to forest management such as the Native Forest Law, the Forestry Promotion Law, and regional and local development plans and, further develop and implement new policies, legal instruments and normative, all aiming at SFM and forest ecosystem conservation. In this sense, the project will implement several pilots to test the application and suitability of SIMEF

generated information to improve policies, regulation and planning processes that promote SFM, support REDD+ and conservation of biodiversity in forest ecosystems at local, regional and national levels. One national level pilot will address the use of SIMEF information to strengthen the national legal and regulatory framework. A second regional level pilot will promote the mainstreaming of SIMEF information on valuation and conservation of forest carbon stocks and biodiversity in the Regional Land Use Plans of the O'Higgins and Los Rios regions, both of them highly affected by forest degradation, and the Communal Development Plans of the communes of Panguipulli (Los Rios) and Las Cabras, Coltauco and Doñihue (O'Higgins). A third pilot will involve the implementation of local level participatory SFM practices that conserve forest ecosystem services (carbon stocks and habitats for globally significant species) in the Panguipulli and Cachapoal Model Forests. This pilot will look at how the information generated by SIMEF in practice can be used by local SFM alliances for better monitoring and understanding of the outcomes of different management practices in forest ecosystems and to improve their model through adaptive planning and management. The fourth pilot will generate a carbon baseline for the development of an MRV System in support of the ongoing CONAF programme "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile", which seeks to promote the integration of private forestry initiatives in the carbon market.

These pilots will allow assessing the usefulness and impact of the SIMEF under real conditions. Implementation of these pilots is an ambitious and challenging mainstreaming goal for INFOR and CONAF because it involves two different regional governments with different political emphasis and approaches. These differences will provide diversity in examples from the pilot mainstreaming exercise which will be the key for the further replication in a bottom up strategy for biodiversity and forest ecosystem conservation mainstreaming based on the improved access to data on forest biodiversity and other ecosystem services.

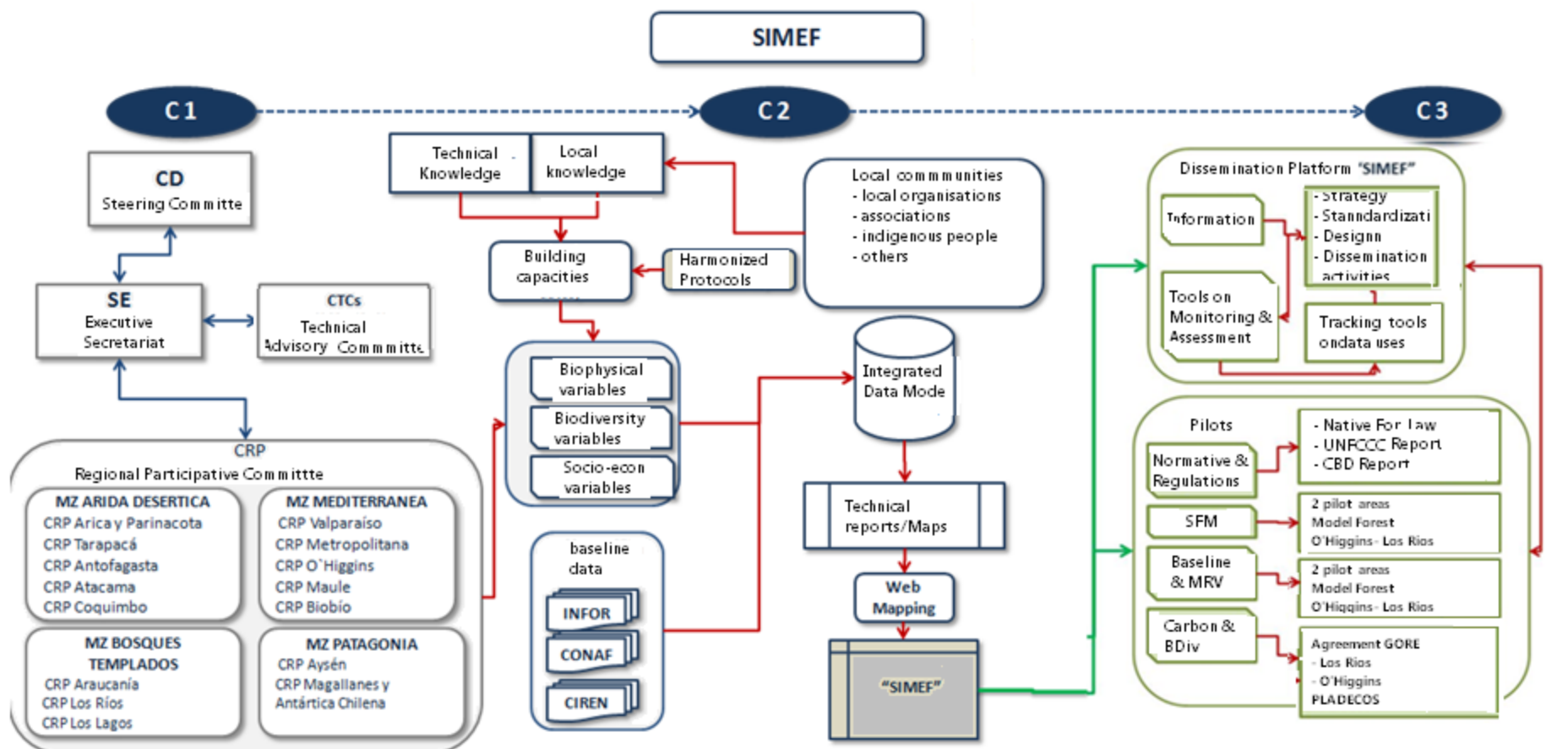
The project strategy foresees stakeholder participation in several manners. At an institutional level, Regional Participation Committees will be established in each of the country's regions and comprised by relevant public, private and civil society stakeholders. These committees will constitute the mechanism to make sure that regional and local level information needs and demands are included in the SIMEF. Biophysical, biodiversity and socio-economic variables will be developed in accordance with the priorities identified by the committees. The committees will also provide feedback on the use and relevance of the SIMEF information.

The local knowledge of indigenous communities, small farmer organizations and other stakeholders located around the sampling areas will be taken into account. To this end, the locals will train technicians so that they will be able to value the local knowledge and obtain the field information that is useful from the local perspective. The pilots will involve participatory planning, decision-making and implementation of field activities under the participatory Model Forest approach. The project will develop an outreach strategy that will serve to disseminate and communicate SIMEF information in different formats suited to the different target audiences (public, private and civil society stakeholders), as well as, to obtain feedback from these audiences that will allow for making adjustments to the SIMEF. In this manner, by increasing the degree of involvement of the stakeholders, their engagement will be

higher and, therefore, their commitment to implement measures that conserve the forest ecosystems.

Figure 2.1 below shows the key elements under the three project components associated with the strategy.

**Figure 2.1** SIMEF components and intervention strategies



## 2.2 PROJECT OBJECTIVES

The project's **global environmental objective** is to develop, and implement an Integrated Forest Monitoring and Assessment System on carbon stocks and biodiversity in Forest Ecosystems (SIMEF for its Spanish abbreviation) supporting the National Greenhouse Gases Inventory and the development of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.

The project's **development objective** is to support government institutions, the private sector and CSO at all levels with improved data and information and its application for better decision making on forest policies, land use planning and regulations as well as on resources management by local communities to guarantee their sustainable use for improving livelihood conditions, providing them with an efficient structure securing bottom – up communication on a continued improvement of the SIMEF to serve their needs..

## 2.3 EXPECTED PROJECT OUTCOMES

**Outcome 1.1:** Interinstitutional coordination and management structure functioning as the permanent basis for operation of the SIMEF. The target value for this output is:

- Steering Committee, Executive Secretariat, Technical Advisory Committee and 15 Regional Participation Committees operating and effectively fulfilling their management, coordination and implementation roles in accordance with the Annual Work Plan and promoting the use of SIMEF.  
(Baseline: No current inter institutional coordination and work/management structure for implementation of SIMEF)

**Outcome 1.2:** Increased technical capacities and knowledge at national and regional levels for implementation of the SIMEF. The target values for this outcome are:

- 4 data collection protocols supplemented, validated and standardized facilitating the collection and analysis of high quality data.  
(Baseline: Protocols for collection and analysis of data for monitoring and evaluation of forest ecosystems exist but some need to be supplemented and/or validated and standardized)
- 286 (at least 40% women) staffs of INFOR, CONAF and CIREN (120), RPC members (30) and data collection brigades' members (136) trained and achieving a score of at least 75% in the final training assessments.  
(Baseline: the expansion of the NFI to SIMEF will require more personnel trained in data collection protocols, analysis and development of SIMEF indicators and products)

**Outcome 2.1:** The National Forest Inventory expanded to a geospatial model populated with data on 13,6 million ha of native forest ecosystems covering the whole country and including an additional 3,5 million ha of native forest not included in the previous NFIs. Targeted values for this output are:

- Carbon stocks of 2 GtCO<sub>2</sub><sub>eq</sub> inventoried in an additional 3.5 million ha (for all pools)  
(Baseline: Carbon stocks of 5.7 Gt CO<sub>2</sub><sub>eq</sub> estimated for 10 million ha covering total above-ground tree biomass)
- 13.6 million ha of habitats for Chile's endemic biodiversity including araucaria forests, temperate rainforests, alerce forests and mediterranean forests monitored.  
(Baseline: No current forest biodiversity monitoring)

**Outcome 2.2:** Information system on carbon stocks and flows, biodiversity of forest ecosystems and land use changes and socioeconomic drivers operational and providing information to interested users and stakeholders. The targeted value for this output is:

- One Integrated National Forest Monitoring and Assessment System (SIMEF) functioning at national level and providing updated and compatible information on carbon stocks and flows, biodiversity of forest ecosystems, interlinkages between socioeconomic drivers and land use changes, and forest fragmentation and degradation rates.

(Baseline: Cadastre and NFI but no integrated information system)

**Outcome 3.1:** Institutions with decision making power over the national legal and regulatory framework and two regional governments (covering 45 local governments) use the information produced by SIMEF to mainstream biodiversity and carbon stock conservation and REDD+ considerations in land use planning and sustainable forest management. The targeted values for this outcome in the O'Higgins and Los Rios demonstration regions are:

- 10% increase in core areas and 10% increase in average areas of patches 5 years after end of project (EOP).  
(Baseline: core areas in O'Higgins and Los Rios are 183 and 860,338 ha respectively and average areas of patches are 104 and 227 ha respectively)
- Forest degradation rate reduced by 20% over the baseline with a 15% margin of error by EOP  
(Baseline: forest degradation rate is estimated in 77,000 ha/year with a 45% margin of error)
- 4,300 ha of degraded forests under rehabilitation by EOP and 100,000 ha under rehabilitation 20 years after EOP<sup>7</sup>  
(Baseline: estimated 500 ha under rehabilitation)
- $40.8 \times 10^6$  t CO<sub>2</sub>eq in avoided emissions from forest degradation and  $13.5 \times 10^6$  t CO<sub>2</sub>eq sequestered by forest rehabilitation resulting in a net carbon balance of  $-54.2 \times 10^6$  t CO<sub>2</sub>eq 20 years after EOP (38% of uncertainty)<sup>8</sup>
- Populations of key threatened tree species stabilized through passive restoration with: avellanita (*Avellanitabustillosii*) southern belloto (*Beilschmiedia berteriana*) northern belloto (*Beilschmiediamiersii*).  
(Baseline: Although these species are recognized as vulnerable, baseline information is still poor, and will be validated during the project implementation)

## 2.4 PROJECT COMPONENTS AND OUTPUTS

### *Project overview*

To achieve the objectives and expected outcomes indicated above, the project has been structured into three components and various subcomponents with their respective outputs as presented in Table 2.1 and described in more detail below.

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<sup>7</sup>Estimations based on the curve of adoption of the rehabilitation of degraded forests mitigation measure within the MAPS Chile Project (Mitigation options for Addressing Climate Change Project, a nationwide initiative of the Ministry of Environment supported by a high level committee of ministers to provide mitigation alternatives for several productive sectors)

<sup>8</sup> Estimated using the FAO EX-ACT carbon balance tool applying Chile Tier 2 Chile specific values for the forest ecosystems in the O'Higgins and Los Rios regions (see also page 66)



**Table 2.1:** Components and Sub-components of the project *Integrated national Monitoring and Assessment System on Forest Ecosystems (SIMEF) in support of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems*

<p><b>Component 1: Development of institutional coordination framework and capacities for the implementation of the SIMEF</b></p> <p>1.1.1 National SIMEF Steering Committee  1.1.2 SIMEF Executive Secretariat  1.1.3 Technical Advisory Committee  1.1.4 Regional Participation Committees  1.2.1 Data collection and processing protocols  1.2.2 Training in data collection uploading and analysis</p> <p><b>Component 2: Implementation of SIMEF</b></p> <p>2.1.1 Data collection on forest ecosystems country wide  2.1.2 Thematic maps and geospatial database  2.2.1 Data standardization and management protocols  2.2.2 Data integration model  2.2.3 Web mapping based on special information system  2.2.4 Thematic reports on the state of forest ecosystems</p> <p><b>Component 3: Application of the information generated by SIMEF in local, regional, and national policies and regulations, development and land-use planning and in support of SFM incorporating REDD+</b></p> <p>3.1.1 Tracking tool for assessment of the utilization of SIMEF data  3.1.2 SIMEF information dissemination and outreach strategy  3.1.3 Pilot on strengthening forest legal and regulatory framework with SIMEF information at the national level  3.1.4 Pilot on mainstreaming SIMEF information in RLUPs and PLADECOS at the regional and communal level  3.1.5 Pilot on improving local SFM guidelines and practices with SIMEF information at local level  3.1.6 Pilot on establishing the carbon baseline for MRV system with SIMEF information</p>
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**Component 1: Development of institutional coordination framework and capacities for the implementation of the SIMEF**

The objective for this component is to develop a smooth coordination mechanism and develop the required capacities among all institutions related to forest ecosystem issues to secure the implementation of the SIMEF initiative and the timely supply of information necessary to report on carbon stock changes, land use dynamics and forest ecosystems integrity status and trends. The coordination mechanism will build on the strengthening of the already existent institutional coordination and collaboration framework of the MINAGRI (INFOR, CONAF, CIREN) and the MMA.

To ensure that the required capacities are in place for the implementation of the SIMEF and for sustaining the system after the end of the project the component will support technical assistance for the development of a set of cost-efficient methodological tools and protocols for data collection, analysis and construction of indicators related to the monitoring and assessment of forest ecosystems. Capacity development will also involve on-the-job and formal training for technical staff, decision-makers, and local, regional and national interest groups. The capacity building of different stakeholders and human resources at national, regional and local level will not only sustain their active participation in the SIMEF after the end of the project but, is also crucial for supporting the use of the information generated by

the SIMEF by the various stakeholders and decision-makers for improved SFM, REDD+ and conservation of biodiversity in forest ecosystems. As such the capacity building activities in this component complemented by the technical assistance and capacity building provided in Component 3 will be important to sustain the outcomes of the project. Component 1 comprises the following outputs and activities:

**Output 1.1.1:** National SIMEF Steering Committee established and functioning with the participation of the sectoral government institutions with competencies in forest ecosystem matters (Permanent members: CONAF, CIREN, INFOR, MINAGRI, MMA, SUBDERE<sup>9</sup> and advisory members (invited on a case by case basis), and FAO (during the life of the project)).

**Target:** One Steering Committee operating with: a) Framework agreement establishing its responsibilities and procedures; b) At least 2 annual meetings with at least 80% attendance; c) Short and mid-term work plan; d) SIMEF AWP approved and bi-annual progress reports on implementation of the SIMEF AWP reviewed

The SIMEF National Steering Committee (NSC) will be a high-level management and coordination body with the purpose of providing an institutional and coordination platform for the implementation of the SIMEF at national, regional and local levels, as well as for promoting mainstreaming of SIMEF generated information in public policies. Its objectives are: a) to define the SIMEF's (and the project's) overall implementation policy in accordance with, strategies to insure coordination required for its implementation as well as national, regional and local policies linked to REDD+, SFM and LULUCF mechanisms; and b) to oversee the project's technical and financial progress, provide guidance, supervise and approve the reports related to implementation of GEF and co-financing resources.

The NSC will comprise permanent members designated by the following institutions: MINAGRI, CONAF, CIREN, INFOR, MMA, and SUBDERE. FAO will be a member during the implementation of the GEF resources for which FAO is the GEF implementing agency. Other public institutions, NGOs and small farmers and Indigenous Peoples' organizations that work in SIMEF related issues may be invited to participate as advisors.

The NSC will be established in Project year (PY) 1 through an agreement between CONAF, CIREN, INFOR, MINAGRI, MMA and SUBDERE that will include the NSC's responsibilities, as well as the management and working procedures. The NSC will be convened at least once a year (PY1 to PY4) by its Chair and will be assisted by the Executive Secretary who will provide its members with technical and financial information on Project progress. The NSC's responsibilities include: 1) overseeing the technical and financial progress of the Project; 2) supporting the inter-institutional and regional coordination in the implementation of SIMEF; 3) participating in relevant Project events at national or regional levels; 4) coordinating and supporting linkages between the SIMEF and Ministries that may benefit from the information produced to promote REDD+ and LULUCF related policies; and 5) to undertake national dialogues to promote the design of public policies on the basis of SIMEF information.

In PY1 the NSC will approve a short and medium term work plan for the SIMEF, which will be subject to a mid-term review in PY3. On a yearly basis (PY1 through PY4) the NSC will review and approve the SIMEF's annual work plans and budget, support the regional level coordination for the adequate implementation of the SIMEF, and review and approve the

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<sup>9</sup> SUBDERE in this context is under the category of "invited member" given its field of work is not forest ecosystems but territorial planning.

SIMEF's bi-annual progress reports. The NSC will also review and take action on the mid-term and final evaluation reports. Between PY2 and PY4 the NSC will promote the aforementioned national and regional level dialogues to support the development of SIMEF related public policies.

In PY5 the NSC will undertake an evaluation of its role and work for the following 5 years after the end of the Project to ensure the sustainability of the SIMEF and to secure the corresponding Budget.

**Output 1.1.2:** SIMEF Executive Secretariat (ES) established and proposing and effectively implementing the SIMEF Annual Work Plans

**Target:** One SIMEF Executive Secretariat (ES) operating and achieving at least 85% progress in annual activities and targets established in the AWP

The ES will be responsible for: 1) effectively and efficiently implementing the SIMEF at national, regional and local levels; 2) providing the NSC with timely and quality information for adequate decision making and; 3) supporting the regions in implementing the planned activities, including ecosystem inventories, Regional Participation Committees (RPC), training, outreach and management. The ES will report to the NSC and will be responsible during the project's lifetime for preparing the bi-annual project progress reports to be submitted to the NSC and FAO, and support the independent mid-term and final evaluation.

The ES will be established in PY1; it will be located in INFOR and will be comprised by a General Coordinator who will report to the NSC, four Heads of the SIMEF implementing Programmes (Inventory, RPC Facilitation, Training and Outreach) and an Administrative Assistant. Part-time technicians and professionals may be hired for specific tasks as per the planned activities (e.g. technicians to carry out field activities and data processing during ecosystem inventories; specialized training; design and updating of webpages, design and publication of printing materials, and others).

For the implementation of the SIMEF, and within the framework of Annual Work Plans (AWPs), the ES will develop and implement four programmes: 1) Ecosystem Inventory Programme; 2) Regional Participation Committee Programme; 3) Training Programme; and 4) Outreach Programme. In PY5 the ES will undertake an evaluation of its role and work for the following 5 years after the end of the Project to ensure the sustainability of the SIMEF and to secure the corresponding Budget.

**Output 1.1.3:** Technical Advisory Committee (TAC) established and functioning, ensuring a high technical quality of the SIMEF and supporting its implementation and utilization

**Targets:** One Technical Advisory Committee (TAC) established and functioning with at least 1 annual meeting and experts representing 4 Macro Zones (MZ) issuing recommendations on: a) Methodologies and protocols for data collection and processing and development of SIMEF indicators and products; and b) Access to SIMEF data and products, and training of users to ensure utilization

The TAC will be established in PY1 with the objective of proposing methodological adjustments of the SIMEF in accordance with the specific characteristics of the country's four Macro Zones<sup>10</sup> (see map in Appendix 7) seeking to produce high quality information aligned

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<sup>10</sup>Macro Zones: 1) Arid-desert located between the regions Arica-Parinacota to Coquimbo; 2) Mediterranean located between the regions Valparaiso and Biobio; 3) Temperate Forests between the regions Araucania and

with the REDD+ and LULUCF mechanisms, as well as issuing recommendations to facilitate user access to information and training. TAC members will be renowned scientists and professionals from the research centres that exist in the four Macro Zones.

The NSC and the ES will provide the means for the adequate functioning of the TAC including infrastructure, equipment, and travel expenses, among others. The main role of the TAC will be to advise the ES and especially its Inventory Programme in applying a consistent methodology adapted to the characteristics of the forest ecosystems of each Macro Zone. In this sense, it will meet at least twice a year or more often as may be required by Project implementation needs (e.g. during the design or information collection phases). Meetings may be held under different modalities depending of the nature of the subjects to be discussed (e.g. meetings per Macro Zones or bilateral meetings between a specific TAC member and the ES and the RPC).

The TAC will undertake the revision of the methodologies for the Mediterranean and Temperate Forests Macro Zones in PY1 and the Patagonian and Arid-desert Macro Zones in PY2. In PY2 and PY3 the TAC will issue for each Macro Zone recommendations for access to and dissemination of information as well as for training of users. In PY5 the TAC will undertake an evaluation of its role and work for the following 5 years after end of Project to ensure the sustainability of the SIMEF and to secure the corresponding budget.

**Output 1.1.4:** Regional Participation Committees (RCP) established and functioning, facilitating the participation of key stakeholders for an effective implementation of the SIMEF and promoting its utilization at regional level

**Targets:** 15 Regional Participation Committees (RPC) established and operating with: a) At least 2 annual meetings with 80% attendance of its members; b) Regional Annual Work Plan (RAWP) reviewed and agreed; c) 2 regional bi-annual progress reports reviewed; and d) 15 workshops for information dissemination and political advocacy held

Fifteen Regional Participation Committees (RPC) will be established during the project cycle four during PY1, five during the PY2, and 6 during PY3 to ensure a coordinated, participatory and expedite implementation of the SIMEF. Where possible, existing platforms (Forestry Roundtables and Regional Biodiversity Operational Committees) will be used for the establishment of the RPCs. The RPCs will be responsible for: 1) guiding and monitoring the implementation of the SIMEF at regional level; 2) promoting the use and mainstreaming of SIMEF information and products in regional and municipal REDD+ and LULUCF related policies and planning instruments (RLUPS and PLADECOS) and in SFM practices; 3) provide feedback on information needs and on usefulness and user-friendliness of SIMEF information; and 4) supporting awareness rising and training of decision makers and professionals in the regions.

The RPCs will be comprised by the relevant stakeholders that are related to the SIMEF and its utilization for design of regional and local public policies. Members will include, but will not necessarily be restricted to, representatives of the Regional Government (GORE), INFOR, CONAF, CIREN<sup>11</sup>, Regional Ministerial Secretariat (SEREMI) of Agriculture, SEREMI Environment, one representative of NGOs, one representative of regional small farmer's organizations, one representative of Indigenous Peoples' organizations (where relevant and in

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Los Lagos; and 4) Patagonian between the regions Aysen and Magallanes (see Map of Macro Zones distribution in Appendix 7)

<sup>11</sup>As possible given that CIREN is located in Santiago and does not have offices in the regions.

the regions where they exist), one representative of entrepreneurial organizations (when relevant), and a representative of the Regional Association of Municipalities (if existent) or other types of associations in accordance with land use planning criteria used in each region.

The RPCs will be a horizontal non-hierarchical organization where all its members will have voice and vote. A Chairperson will be elected among the members, who will convene and conduct the meetings on the basis of a pre-determined agenda. Each RPC will also have an Executive Secretary, who in a first stage will be the representative of the regional INFOR office. The RPCs will meet regularly at least two times per year or more often according to Project implementation needs (e.g. design and data collection phases). The RPC will relate with the NSC in all Project matters through the ES and with the TAC to discuss and decide on the adjustment of methodologies in order to fulfil its role of coordinating and facilitating the implementation of the SIMEF in each region in regards to forest ecosystem inventories, information dissemination and contribution to regional and municipal policies.

Each RPC will prepare a regional AWP (RAWP) and will report on the progress of activities on a bi-annual basis. During the project's lifetime the RPCs will carry out workshops to disseminate information and advocate on regional and local public policies. Likewise, the member institutions will also disseminate SIMEF results through their respective communication means. Between PY2 and PY4 the RPCs will organize regional thematic roundtables on regional and local policies and promote training courses on the SIMEF and its products. In PY5 the RPCs will undertake an evaluation of their role and work for the following 5 years after end of Project to ensure the sustainability of the SIMEF and to secure the corresponding budget.

**Output 1.2.1:** Cost-efficient data collection and processing protocols for evaluation and monitoring of forest ecosystems standardized and published in accordance with international (LULUCF, REDD+), national and regional policies and best practices

**Targets:** a) One protocol for carbon data collection (above-ground tree biomass, dead wood, litter, understory vegetation) adapted and validated with technical coefficients for 4 MZ; b) One protocol for biodiversity data collection validated and adjusted and one biodiversity monitoring protocol with communities and forest landowners; c) One protocol for updating the land use dynamics every two years; and d) One protocol for collecting data on socio-economic dynamics validated and adjusted

In PY1 the project will develop a set of cost-efficient methodological protocols for data collection, analysis and construction of indicators related to the monitoring and assessment of forest ecosystems. These protocols will be standardized and published in accordance with international policies and best practices (LULUCF, REDD+) and reporting needs of the conventions, in particular the UNFCCC, it will cover: a) carbon stocks and carbon flows; b) biodiversity related to forest ecosystems; c) dynamics in land-use changes; and d) socioeconomic drivers for deforestation and forest degradation.

The specific tasks to be undertaken by the Project are: 1) adapt and validate the existing carbon protocols for above-ground tree biomass and dead wood, and develop technical coefficients and apply the protocols for litter and understory vegetation to certain species to be identified during the first project year; 2) validate and subsequently adjust the current protocols for biodiversity and include herbaceous plants; 3) design and validate a participatory biodiversity monitoring protocol with communities and forest landowners; 4) validate the current protocol for updating of land use dynamics, organize a training course

with the participation of an international expert, and subsequently adjust the protocol; and 5) adjust and validate the protocol to collect information on socio-economic dynamics.

**Output 1.2.2:** Institutional staffs and stakeholders trained in data collection protocols, uploading of data to databases, data analysis and development of SIMEF indicators and products.

**Targets:** a) 115 staffs of INFOR, CONAF and CIREN trained in: remote sensing technology, field measurements (data uploading and validation in dataloggers), functioning of the data model and BD, C and socioeconomic protocols; b) 30 RPC members trained in: remote sensing technology, field measurements (data uploading and validation in dataloggers), functioning of the data model and BD, C and socioeconomic protocols; c) 136 members of data collection brigades trained in BD, C and socioeconomic protocols

The Project will develop and implement a capacity building programme to provide the stakeholders, involved in the implementation, dissemination and use of SIMEF results, with the capacities to effectively perform their roles and responsibilities within the SIMEF.

In PY1 the Project will design training courses for three target audiences: 1) professional staffs of INFOR, CONAF and CIREN, 2) members of data collection brigades and 3) RPC members. During PY1 and PY2 the project will organize 3 courses targeting 115 professional staffs of INFOR, CONAF and CIREN who will be trained in remote sensing technologies, field measurements (data uploading and validation in dataloggers), operation of the data model and application of the biodiversity, carbon and socio-economic protocols. Training will enable these staffs to manage the SIMEF within their respective institutions as well as coordinating field campaigns, use and dissemination of the information.

The current five brigades (15 members) in charge of collecting biophysical data for the NFI will be increased to 34 brigades (8 brigades for biophysical data, 20 brigades for biodiversity data and 6 brigades for socio-economic data) with a total number of 136 members. Three training courses will be held for these brigades; one will be carried out in PY1 for the Temperate Forests and Mediterranean Macro Zones and in PY2 one course for the Patagonian Macro Zone and another for the Arid-desert Macro Zone. Brigade members will be trained to apply the biodiversity, carbon and socio-economic data collection protocols in the field.

In addition, 30 members of the RPCs will be trained through two courses for an overall understanding of the SIMEF, in particular its objective, rationale and operational architecture, relationship with the REDD+ and LULUCF mechanisms, results achieved, their dissemination and use; hence enabling them to coordinate and implement the SIMEF in their regions. The first course will be held in PY1 targeting the Los Ríos, Los Lagos, O'Higgins, Araucanía, Maule, Biobío, Coquimbo, Aysén and Magallanes regions, while the second course will be held in PY3 targeting the Arica-Parinacota, Tarapacá, Antofagasta, Valparaíso, Atacama and Metropolitan regions.

## **Component 2: Implementation of SIMEF**

The objective of this component is to expand the current NFI (including forests within and beyond the limits of protected areas) to an additional 3.4 million ha making the NFI cover the whole country and adding socioeconomic indicators to the vegetation attributes and land-use changes monitoring as well as improving the monitoring of biodiversity and carbon equivalent to obtain a complete operational SIMEF. The project will under this component

support the collection and analysis of statistically valid data and information covering forest ecosystems country wide, and the calculation of indicators for: a) carbon stocks; b) forest habitat conditions for biodiversity; c) drivers for land-use changes impacting forest ecosystems; and c) socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+.

Based on the data collection and analysis, this component will also support the preparation and dissemination of thematic maps on forest ecosystems, species distribution, carbon stock and land use changes supported by a geo-database and a Web-based information system giving user groups (national, regional and local decision makers on forest management and land-use planning, the private sector dependent or impacting on forest ecosystems, and universities and NGOs working on SFM and REDD+ issues) easy access to the generated data and information. Furthermore, thematic reports oriented to different users will be published on forest carbon stocks and fluxes, forest ecosystem biodiversity status, dynamics in land-use changes impacting forest ecosystems, or socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+. Special attention will be given to the user friendliness of the presented data and capacity development of interest groups enabling them to analyze and interpret the information generated by SIMEF. This will also include making public the methodologies applied in data collection and analysis and the calculation of indicators.

In the development of methodologies for the implementation of the SIMEF the interest and needs of different user groups will be taken into account including the relevance of the information for the decision makers at local, regional and national level. A key aspect in this component is to provide a better understanding of land-use changes and their influence at country level on the trends in the national GHG inventory. The SIMEF should also be able of early detection of deforestation/degradation and its drivers to allow for immediate actions. For this end, the use of remote sensing covering the entire country will be necessary taking advantage of the Chilean satellite FASAT AC. Component 2 comprises the following outputs and activities:

**Output 2.1.1:** Statistically valid data and reliable field information at landscape, stand and tree level collected covering forest ecosystems country wide, and indicators calculated for: a) carbon stocks; b) forest ecosystem biodiversity; c) drivers for land-use changes impacting forest ecosystems; and c) socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+

**Targets:** a) Biophysical information on the Arid-desert MZ completed. Sample design for the Mediterranean and Southern Islands MZs adjusted. Information on all carbon pools for Arica and O'Higgins regions and Southern Islands improved; b) Non-plant kingdoms and herbaceous plants completed; c and d) Report identifying the drivers of land use change, forest deforestation and degradation, and SFM/REDD+ incentives for each MZ

This output comprises activities related with data collection, registry, information processing and narrative background, functions, factors and indicators that will populate the SIMEF data model and enable its operation. This will be based on the expansion of the NFI and its statistical design and set of procedures and protocols to cover the whole country. The NFI divides the country into four Macro Zones (MZ): Northern MZ covering the regions from Arica to Coquimbo; Mediterranean MZ covering the regions from Valparaiso to O'Higgins; Southern MZ covering the regions from Maule to Los Lagos, and the Austral MZ covering

the regions Aysen and Magallanes. The Northern and Mediterranean MZs are the object of a wider resolution sampling.

Data on the socio-economic drivers of forest ecosystem degradation will be collected in PY1, expanding the information that already was collected in 2012 for 1 million ha, to the whole country. The work will be undertaken in two groups of regions, one including Maule, Bio Bio, Coquimbo, Aysen and Magallanes, and the other Arica-Parinacota, Tarapaca, Antofagasta, Atacama and Valparaiso. The project will undertake socio-economic surveys, process the data collected, analyze results and prepare for each group of regions a report on the drivers of degradation and the links with possible REDD+ and SFM measures and recommendations.

The biodiversity sampling known as Phase II Sampling of the Continuous Forest Inventory (CFI)<sup>12</sup> will be applied to monitor other non-Plantae kingdoms, in particular, the kingdoms Fungi, Arthropoda and Animalia (birds and mammals) and non-vascular plants. The tasks to be carried out in PY1 include reviewing the protocols; undertaking consultation workshops with communities; updating the protocols on the basis of the results of the workshops and training of brigades. In each Macro Zone, field data will be collected and processed and an Inventory Report for the Macro Zone will be prepared. The inventories will be carried out in the Northern Macro Zone in PY2, in the Mediterranean Macro Zone in PY3 and the Southern Macro Zone in PY4.

The project will develop a sample design and generate biophysical information on carbon pools and biodiversity for the Southern Islands Macro Zone in PY3 and for the Northern and Mediterranean Macro Zones in PY4. Tasks to be undertaken for each Macro Zone include proposing the sample design and identifying statistical estimators. The implementation of the sample design will subsequently include improving a field manual, carrying out a field campaign, and information processing.

Additionally, reports on biophysical information, carbon pools and biodiversity for each Macro Zone will be prepared.

**Output 2.1.2:** Thematic maps on forest ecosystems, carbon stocks and land use changes prepared, published and uploaded to the geospatial database

**Targets:** a) Biophysical information maps for the Arid-desert MZ; b) Carbon stock maps for the regions from Arica to O'Higgins and Southern Islands MZ; c) Land use change maps for each MZ; d) biodiversity maps.

The project will prepare biophysical thematic maps (forest ecosystems and carbon stocks) in PY3 and PY4 by making use of data in the geospatial database, satellite imagery and interpolation methods. Land use change maps and reports will be prepared between PY2 and PY4 by applying multi-temporal images with segmentation and changes detection, classification and validation of the detected changes at field level. These maps will serve the purpose of presenting summarized versions of the information available in the SIMEF on specific subjects such as carbon stocks, biodiversity, socio-economic drivers, among others. The maps will be stored in digital format within the SIMEF data model, which will manage the information through the spatial database engine (geodatabase).

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<sup>12</sup> The National Forest Inventory Phase II Biodiversity sampling consists in a large scale sampling design built over the systematic biophysical grid of samples distributed all over the country (Phase I)



**Output 2.2.1:** Data standardization and management protocol agreed between INFOR, CONAF and CIREN

**Target:** One protocol for data standardization and management agreed

The data standardization and management protocol will be prepared in PY1 with the participation of INFOR, CONAF and CIREN. It will describe all the procedures, standards and codes for a common and single framework within the SIMEF. Thirty training workshops will be undertaken; 15 targeting INFOR, CONAF and CIREN staff and another 15 workshops targeting stakeholders in each region.

**Output 2.2.2:** Data integration model designed and implemented

**Target:** One Data integration model designed and implemented

In PY1 a data integration model will be designed on the basis of the existing experience of the executing agencies and their current integration models. The integration strategy will comprise the consumption of data and information within a scheme of inter-operability by institutional nodes. Design of the integration model will be based on assessments of the current institutional data models and the institutional hardware and software capacities. Once the design has been agreed upon the project will organize and carry out 15 training workshops targeting institutional staffs and stakeholders in the regions. Between PY2 and PY4 the model will be implemented.

**Output 2.2.3:** Web mapping based spatial information system mapping prepared and connected to the integrated monitoring and assessment system

**Target:** Web mapping based information system operating

The project will develop in PY1 a spatial module linked to the data model developed under Output 2.2.2, which, through a Web mapping<sup>13</sup> utility, will allow the dissemination of the SIMEF's geospatial products such as thematic maps, auxiliary maps and products cross-referencing data base and maps. The web mapping utility will allow user groups (national, regional and local decision makers on forest management and land-use planning, the private sector dependent or impacting on forest ecosystems, and universities and NGOs working on SFM and REDD+ issues) easy access to the data and information generated.

**Output 2.2.4:** Thematic reports on the state of forest ecosystems published based on the information generated by the SIMEF

**Targets:** 4 thematic reports published: a) forest carbon stocks and flows; b) status of forest biodiversity; c) land use change dynamics; d) drivers for deforestation and forest degradation and SFM/REDD+ incentives

The project will produce in PY3 and PY4 thematic reports on the state and condition of the forest ecosystems in regards to: 1) variations of forest carbon stocks; 2) forest biodiversity status; 3) land use changes dynamics; and 4) drivers for deforestation and forest degradation and elements that stimulate SFM and development of REDD+ initiatives and projects. These reports will serve to disseminate the main SIMEF products (information, maps, quantitative and qualitative data) and will deliver information at several levels (national, regional and macro zone).

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<sup>13</sup>Web mapping is defined as the process of designing, implementing, generating and delivering maps on the World Wide Web

### **Component 3: Application of the information generated by SIMEF in local, regional, and national policies and regulations, land-use planning and in support of SFM incorporating REDD+**

The objective of this component is to facilitate that the information generated by the SIMEF is used to improve policies, regulation and planning processes and practices that promote SFM, REDD+ and conservation of biodiversity and carbon stocks in forest ecosystems at local, regional and national levels.

To achieve this objective the component will in collaboration with the RPC of the O'Higgins and Los Ríos Regions support the development and application of a special tool for tracking and assessing the utilization of data, maps and reports generated by the SIMEF by local, regional and national governments and other institutions as well as private sector and CSO users. As tracking tools the project will use already existent tools like Google Analytics or cite tracking for project produced documents, newsletters, reports, news, or similar. The findings of this assessment will be used as important inputs to improve the information generated and presented by the SIMEF to continuously improve its relevance and user-friendliness.

Moreover, to facilitate the impact of the SIMEF the component will support the implementation of a SIMEF communication and dissemination strategy and provide technical assistance to a series of pilots on the utilization of the information generated by the SIMEF to be implemented at national, regional and local levels. These pilots are: 1) one pilot strengthening the national forest legal and regulatory framework; 2) one pilot on mainstreaming biodiversity conservation and incentives for REDD+ in RLUPs and PLADECOS at regional level in Los Rios and O'Higgins regions; 3) one pilot with local communities implementing SFM practices in the Panguipulli (Los Rios) and Cachapoal (O'Higgins) Model Forests; and 4) one pilot on local and regional MRV systems in pilot regions. Component 3 comprises the following outputs:

**Output 3.1.1:** Special tool for tracking and assessment of the utilization of data, maps and reports generated by the SIMEF by local, regional and national governments and other institutions and organizations developed and applied

**Target:** One tracking tool

The Executive Secretariat will work closely with the Regional Participation Committees to develop a special tool that will help track and assess the utilization of information and products generated by the SIMEF by the relevant stakeholders, including local, regional and national governments, private sector and civil society organizations. Between PY2 and PY4 the Project will identify suitable data in monitoring the SIMEF impact on the society, allowing for improvement or modification of the current strategy, and will produce reports and statistics of the utilization of data, maps, and reports disaggregated by user category. In PY4 feedback will be provided to the Executive Secretariat. The findings of this assessment will be used as important inputs to improve the information generated and presented by the SIMEF to continuously improve its relevance and user-friendliness.

**Output 3.1.2:** SIMEF information disseminated according to user types and levels

**Target:** Outreach strategy and web platform designed and implemented, disseminating and communicating specific reports per user category (public institutions, private sector, civil society)

To facilitate the impact of the SIMEF the Executive Secretariat in coordination with the Steering Committee and the Regional Participation Committees will design and implement an outreach strategy and a web platform with the objective of disseminating SIMEF information and products (e.g. thematic maps and reports) among decision makers and key stakeholders seeking to promote informed decision making and guide policy design and implementation in issues such as defining the main degradation drivers and strategies to reduce their impact, establishing differentiated incentives for SFM in the different Macro Zones, and incentives for biodiversity conservation.

The outreach strategy will be designed in PY1 by an external consultant and will be implemented from PY2 to PY4 at regional level by the RPCs. In PY3 the RPC will design the web platform, purchase an Internet domain and launch the platform. The web platform will be maintained and updated on a regular basis. Throughout the project's lifetime reports will be produced targeting the different user interests (public sector, academia, NGOs, private sector and civil society). The contents and formats of the reports will be adapted to each type of user and the specific messages intended for each target audience, therefore facilitating user access to information and knowledge, and their feedback. On the basis of the feedback obtained from users and lessons learned, in PY4 an external consultant will develop products, training and dissemination strategies seeking to increase access and use of the SIMEF.

**Output 3.1.3:** Forest legal regulatory framework strengthened through utilization of the information generated by the SIMEF

**Targets:** a) Information provided by the SIMEF for: i) the Native Forest Law; ii) the Forestry Promotion Law; iii) updating the National Biodiversity Strategy and the Biodiversity and Climate Change Strategy; and iv) UNFCCC National Communications; b) Operational regulations elaborated for the Native Forest Law in regards to: i) promotion of non-timber forest products for two forest types (evergreen, sclerophyllous); ii) criteria for designating forests for conservation purposes; iii) incentives for conservation and rehabilitation of native forests; and iv) financing for SFM technology transfer

The Executive Secretariat, CONAF and INFOR will seek to promote the use of SIMEF information (e.g. land use change rates, areas where changes occur at a faster pace, forest growth and areas with greater degradation, areas with species conservation problems, among others) to improve the forest legal and regulatory framework, in particular the Native Forest Law and the Forest Promotion Law. The SIMEF information will also contribute to better focus incentives for production, rehabilitation and conservation, quantifying the availability of non-timber forest products to define sustainable harvesting limits, and updating the National Biodiversity Strategy and the National Communications to the UNFCCC.

To advance the improvement of the legal and regulatory frameworks, the project will establish dialogue roundtables with the participation of CONAF and INFOR. Dialogue roundtables will be established for the Native Forest Law in PY1 and for the Forestry Promotion Law in PY2. They will have the objectives of establishing working agreements to provide SIMEF information as inputs for these laws, and particularly in the case of the Native Forest Law to propose regulations to fill in current gaps in the law. The project will elaborate in PY3 operational regulations for the Native Forest Law in regards to: 1) promotion of non-timber products for the Evergreen and Sclerophyllous forest types; and 2) criteria for designation of forest set-asides for conservation purposes, and in PY4 for: 1) incentives for

conservation and rehabilitation of native forests; and 2) financing for SFM technology transfer.

In addition, the project will undertake a workshop to update the National Biodiversity Strategy and the Biodiversity and Climate Change Strategy in PY2 and a workshop to prepare the 3rd National Communication to the UNFCCC in PY3 on the basis of the information generated by the SIMEF.

**Output 3.1.4:** Information on valuation and conservation of forest carbon stocks and biodiversity generated by the SIMEF are mainstreamed in Regional Land Use Plans (RLUP), Communal Development Plans (PLADECO) and zoning and use regulations

**Target:** Information mainstreamed in 2 RLUPs (O'Higgins and Los Rios regions) and 4 PLADECOs (communes of Panguipulli, Las Cabras, Doñihue and Coltauco) and zoning and use regulations covering 479,200 ha.

Land use in Chile is ruled by regional and local land-use plans and regulations issued by regional and local governments considering the protection of special areas and local development strategies (see section 1.1.c). This pilot will take an important first step in mainstreaming conservation of biodiversity and carbon stocks in development plans of regional and local governments, RLUPs and PLADECOs in the O'Higgins and Los Rios regions, which are particularly affected by forest habitat fragmentation and degradation.

In PY1 INFOR will sign agreements with the regional governments of O'Higgins and Los Rios to work together in the implementation of this pilot at regional and municipal level. A workshop to launch the SIMEF in the two regions will be undertaken and the detailed design of the pilots will be prepared, including a technical assistance plan and the different information levels to be delivered to the different types of users. In PY2 the data processing model to generate information per user type will be developed and implemented.

During PY3 the information on valuation of forest biodiversity and ecosystem services generated by the SIMEF will be mainstreamed in the RLUPs of the two regional governments as well as in the PLADECOs of the communes of Panguipulli (Los Rios region) and Las Cabras, Doñihue and Coltauco (O'Higgins region). The information mainstreamed in the afore-mentioned plans will include zoning and use regulation to stop further habitat fragmentation, facilitate medium-term improved connectivity between already fragmented habitat and support forest rehabilitation as well as specific measures for the conservation of threatened species in each case, thus supporting the conservation and sustainable use objectives of the regional and local development and land use plans. In this manner coherent frameworks of development plans, regulations and land-use planning in the two pilot regions will provide diverse and important examples demonstrating mainstreaming of biodiversity and forest ecosystem conservation which will be the key for the further replication in a bottom-up strategy.

In PY4 agreements will be signed with INDAP/PRODESAL, CONAF and Municipalities to apply the RLUPs and PLADECOs. Between PY2 and PY4 six workshops (1 per year per region) will be undertaken to train key stakeholders in the use and mainstreaming of SIMEF information in the development plans.

**Output 3.1.5:** Local SFM practices that conserve forest ecosystem services (carbon stocks and habitats for globally significant species) and improve livelihood conditions implemented with the support of information generated by the SIMEF

**Target:** 25% increase in number of management plans approved and under implementation based on agreed participatory practices and guidelines for SFM in 2 pilot model forests (Panguipulli Model Forest in Los Rios and Cachapoal Model Forest in O'Higgins) covering 2,000 ha, leading to conservation of forest ecosystem services (carbon stocks and habitats for globally significant species), and lessons learned published.

This pilot will be based on the experience gathered in SFM models in alliances between local communities, the private sector and government agencies under the Ibero-American Model Forest Network<sup>14</sup> and will be implemented in the Panguipulli Model Forest (Los Rios region) and the Cachapoal Model Forest (O'Higgins region). The **Cachapoal Model Forest** comprises four municipalities (Las Cabras, Coltauco and Doñihue) stretching over 150,000 ha, of which 24% are native forest. These forests are located within the Mediterranean ecorregion, one of the world's biodiversity hotspots, have a high diversity of tree species, many of which are endemic, with 22.9% of species threatened. Agriculture and livestock production represent the key threats to forest ecosystems. Expansion of crops (vineyards and fruits), grazing in the forest, use of fire and extraction of forest humus contribute to the degradation of forests. The **Panguipulli Model Forest** covers 329,200 ha, 68% of the population is rural, 86.6% of the total population of the commune is poor, and the population includes Mapuche indigenous communities. The native forest is the main natural resource in the commune. Around 10% of the area contains 85% of properties, which implies a large number of small-scale properties that have exerted pressure on the native forest. The larger forestlands (90% of the surface area containing 1% of properties) have suffered intensive logging during the past century. Current pressures on the forest are the demand for firewood and logs.

These model forests will serve as the basis for this pilot, focusing at how the information generated by SIMEF in practice can be used by local SFM alliances for better monitoring and, understanding of the outcomes of different management practices in forest ecosystems and, to improve their model through adaptive planning and management. Of particular focus in this pilot will be the capacity building of local stakeholders in relation to the interpretation and use of the SIMEF generated data and, the rehabilitation of native forest ecosystems through sustainable management and use, besides the improvement of in monitoring of ecosystem status and services. The pilot experience will also allow for adjustments in the SIMEF itself to make sure it fits the need of local and regional SFM models.

INFOR, CONAF and the directive boards of the Panguipulli and Cachapoal Model Forests will sign collaboration agreements in PY1 to implement the pilot. A participatory work plan will be prepared for each model forest, including a technical assistance plan to forest landowners identifying the types of activities to be developed in their lands (e.g. native forest management, plantation, rehabilitation, conservation of protected species, sustainable harvesting of non-timber forest products).

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<sup>14</sup> The Ibero-American Model Forest Network was established in 2002 to systematize, share, and promote best SFM practices in the South and Central American region, Caribbean, Canada, and Spain supported by international agencies including FAO. Model Forests build on SFM at a landscape level and broad representation and inclusion of all stakeholders in the forest territories

In PY2 the data processing model to generate information per user category (e.g. forest landowners, PRODESAL, public services, municipality land use planning professionals) will be developed and implemented and SFM guidelines for Panguipulli and Cachapoal model forests will be agreed through a participatory process. Participation will be promoted through the model forest participatory approach to the territorial issues of interest. Moreover, SFM plans mainstreaming conservation of forest ecosystem services (carbon stocks and habitats for globally significant species) will be prepared and implemented based on the agreed SFM guidelines. In PY4 the lessons learned will be published and disseminated.

**Output 3.1.6:** Carbon baseline provided by the SIMEF for an MRV System under CONAF's "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile"

**Target:** Carbon baseline covering a territory of 479,200 ha in the O'Higgins and Los Rios regions for the MRV System under CONAF's PBCCH provided by the SIMEF

Within the framework of the Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile (PBCCh)<sup>15</sup> INFOR and CONAF will closely work together to develop, through the SIMEF carbon reference levels, a projected reference line and monitoring system, in accordance with mitigation scenarios for different activities such as reduction of degradation, fragmentation, deforestation and increases in forest carbon stocks within the CONAF proposed jurisdictions<sup>16</sup> in the pilot regions (O'Higgins and Los Rios).

Development of the reference levels and projected reference lines will build upon the existing baseline comprising the National Cadastre of Vegetational Resources, the NFI, the dendro-energy project, country specific allometric functions and emission factors, the MAPS project, and demographic, social, economic and sectoral statistics. In PY1 updated land use maps for the pilot regions will be prepared, information collected from inventory plots (e.g. plots from INFOR's NFI and CONAF's dendro-energy monitoring project), the expected accuracy of the information (10%) for assessment of the variability of carbon stocks in the forest ecosystems of the pilot regions will be calculated according to statistical population model and, manuals for data processing and field work will be prepared. Information will be provided by output 2.2.1 and 2.2.2 of the project, and published as mentioned in output 2.2.3.

Between PY1 and PY2 the baseline sampling and monitoring procedures will be devised, sample plots will be established, information collected and processed. The reference line (land use change model) will be identified and a quality control will be applied to ensure the consistency and accounting of data and methods for GHG estimation as per IPCC guidance. Information on technical coefficients to determine carbon stocks for the land uses in the pilot regions will be also collected. Moreover, technical elements linked to the estimation of carbon stocks in the forest ecosystem such as allometric functions for biomass, determination of the above-ground biomass/below-ground biomass relationship, and determination of the other components of the forest ecosystem will be developed. The resulting information will be uploaded to the SIMEF database and the reference line projection model will be developed.

In PY3 the projection model will be applied and validated through a participatory workshop with stakeholders. Monitoring will be implemented in PY3 and PY4 through collecting and processing data on ongoing activities (land use change, degraded surface areas) and carbon

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<sup>15</sup>See description of the PBCCh in sub-section 1.1.1.a on baseline projects and programmes

<sup>16</sup> A Jurisdiction refers to a defined national or subnational territory sharing some common attributes from a biophysical, social and economic perspective.

density per carbon pools. In PY4 and within the framework of the PBCCh reports on the reduction of emissions or increases in carbon sequestration will be prepared and carbon credits will be verified in coordination with an external certifying body such as the Verified Carbon Standard (VCS), hence completing in this manner the MRV system for the two proposed areas. Based on experiences gained in each pilot, corresponding guidelines will be developed and disseminated.

## **2.5 Global Environmental Benefits**

The forest ecosystems and their resources in Chile with a productive objective are mainly providing wood for industrial use and biomass for heating or other uses which have been the focus of the NFI so far. However, the forest provides a lot broader set of goods and services, which are emergent properties generated by the natural evolution of the dynamics of the forests. These goods and services will be covered by the SIMEF to be established by the proposed project. Considering also the ability to monitor and respond to the needs for mitigation and adaptation to climate change and conserve important genetic resources and biodiversity in forest ecosystems, the forest monitoring should not only focus at the areas of productive forest. The project will allow for the inclusion in SIMEF of 3.5 million hectares of native and primary forest areas in the southern part of the country, which constitute important reservoirs of carbon and global important biodiversity found in the prehistoric Araucaria forests, the temperate rainforests, and the Alerce forests. These forest ecosystems all provide important ecosystems services to be considered when defining forest biodiversity conservation, SFM, LULUCF and REDD+ policies, regulations and strategies.

The information to be collected and monitored, based on key indicators, will provide an understanding of the integrity and stability of the forest ecosystem tailored to the needs of forest decision-makers under a solid inter-institutional coordination and financing framework insuring cost savings and effectiveness. The implementation of the SIMEF will include: a) an expansion of the NFI to cover non-productive forest; b) improvement in capacities and methodologies to monitor forest degradation and land-use changes and its impacts on carbon stocks and habitat conditions for biodiversity and the behind socio-economic drivers; c) and the integration of the NFI with the Cadastre programme into the SIMEF. The establishment of the SIMEF will allow decision-makers to perceive the value of the forests in its whole and enhance their understanding of the necessities of new policies and legal instruments and improvements on the already existing ones. SFM programmes will have the information needed in order to better target LULUCF and REDD+ and the provision of local and global environmental benefits including the conservation of habitats for endemic forest species. Likewise the expansion of the NFI to cover natural forest without a direct wood production function and the integration with land-use change data will cover important forest ecosystem biodiversity aspects allowing for enhanced conservation at a landscape level in sector policies and regulations. Finally, the financial support from GEF resources will contribute to the establishment of an MRV system to certify forest-derived carbon credits giving access to a new financing source for SFM and conservation of forest biodiversity as a co-benefit along with carbon stock conservation.

The global environmental benefits to be delivered by the project include:

Benefits from the development and implementation of the SIMEF (Components 1 and 2):

- Expansion of the NFI and integration into the SIMEF covering an additional 3.5 million hectares of native primary forest in the southern part of the country representing significant carbon stocks (more than 2 GtCO<sub>2</sub>-eq) which will be

accounted for in the National Forest Inventory laying the grounds for improved SFM and carbon stock conservation policies and regulations;

- Improved precision in the National GHG Inventory for carbon estimates in forest carbon monitoring from 10% to 7% uncertainties as a result of: inclusion in the SIMEF of the additional 3.5 million hectares of native primary forest in the southern part of the country; improvement in existing carbon data collection and processing protocols for above-ground tree biomass and dead wood, and develop technical coefficients and apply the protocols for litter and understory vegetation to certain species; and inclusion of monitoring of the impacts of illegal activities causing forest degradation (estimated 9 million m<sup>3</sup>/year).
- Improved data and information on forest habitat conditions and threats covering 3.5 million additional hectares of primary forest classified by forest types in the Southern part of the country. This forest include important primary forest habitat for biodiversity endemic to Chile in particular the native prehistoric Araucaria forests, temperate rainforests, and Alerce forests of which limited official data exist today. Chile's forest has been identified by CI and IUCN as one of 25 world hotspots for biodiversity conservation because of its unique genetic resources and habitat service to a high number of endemic species: 11 species of mammals, 24 species of amphibians, 5 species of reptiles, 13 species of birds, and 13 species of fish. A better understanding of the threats on these species from forest degradation and fragmentation of habitats in particular in the central and northern part of the country and forest degradation in the southern part of the country will be crucial for improving conservation policies and mainstreaming.

Benefits of the implementation of the pilots using the information generated by SIMEF (component 3):

- Conservation and sustainable use of forest biodiversity mainstreamed into sector regulatory frameworks as well as local and regional land-use planning, zoning and use regulation covering 479,200 hectares of forest ecosystems in two pilot regions of O'Higgins and Los Ríos resulting in: a) reduced fragmentation through 10% increase in core areas and 10% increase in average areas of patches in the O'Higgins and Los Ríos Regions 5 years after the end of Project (EOP); b) forest degradation rate reduced in 20% by EOP; c) 4,300 ha of degraded forests under rehabilitation by EOP, 20,000 ha under rehabilitation 5 years after EOP, 100,000 ha under rehabilitation 20 years after EOP, and an estimated 1,000,000 ha 50 years after EOP as overall long-term project impact; and d) stabilization of populations of key threatened species: avellanita *Avellanitabustilloi*; southern belloto *Beilschmiediaberteroana*; northern belloto *Beilschmiediamiersii*.
- Currently in Chile it is estimated that the forest degradation rate is 77,000 ha/year and that 1,000,000 ha of native forest is suffering forest degradation. The significant reduction of this deforestation rate and recuperation of currently degraded forest will benefit the endemic species and threatened species dependent on forest habitats such as: pollinators; forest birds (ex. Magellanic Woodpecker, and Slender-billed Parakeet); Pudu (South America's smallest species of deer); "monito del monte" (*Dromiciops gliroides*); austral spotted cat (*Oncifelis guigna*), the South Andean deer (*Hippocamelus bisulcus*) and tree species (the southern belloto (*Beilschmiediaberteroana*), the queule (*Gomortegakeule*), the ruil (*Nothofagus allessandri*), and the pitao (*Pitaviapunctata*)).



- Forest biodiversity conservation and improved SFM in pilots supported will lead to the adoption of SFM practices in LULUCF and REDD+ resulting in  $40.6 \times 10^6$  t CO<sub>2</sub>eq in avoided emissions from forest degradation and  $13.5 \times 10^6$  t CO<sub>2</sub>eq sequestered by forest rehabilitation resulting in a net carbon balance of  $-54.2 \times 10^6$  t CO<sub>2</sub>eq 20 years after EOP (38% of uncertainty).
- Carbon baseline provided by the SIMEF for an MRV System under CONAF's "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile" Program to provide certification of forest-derived carbon credits in the carbon market.

The table 2.1 below shows the indicative benefits to be provided by the Project.

Focal Area	Direct project benefits	Potential area influenced by the project (ha)	Estimated project direct carbon benefits by EOD (tCO <sub>2</sub> -eq) <sup>17</sup>	Estimated long term carbon benefits 20 years after EOP (tCO <sub>2</sub> -eq)
<b>Benefits from the development and implementation of the SIMEF (component 1 and 2)</b>				
CCM SFM/ REDD+	1. Improved periodic information on and acknowledgment of primary forest state and conditions in SFM, forest biodiversity and carbon stock conservation policies and regulations	~3,500,000 additional ha included in the NFI and integrated into the SIMEF	~2 x 10 <sup>9</sup> t C additional forest carbon stocks monitored	~2 x 10 <sup>9</sup> t C additional forest carbon monitored
CCM REDD+	2. Improved precision in the National GHG Inventory for carbon estimates in forest carbon monitoring from 10% to 7 % uncertainties	13,600,000 total ha covered by the SIMEF	~7.79 x 10 <sup>9</sup> t C total carbon stock covered by the SIMEF	~7.79 x 10 <sup>9</sup> t C total carbon stock covered by the SIMEF
BD	3. Improved data and information on forest habitat conditions and threats including primary forest habitats for biodiversity endemic to Chile in particular the native prehistoric araucaria forests, temperate rainforests, and alerce forests in the southern part of the country for which limited official data exist today.	10,000,000 ha with improved BD data and 3,600,000 additional ha of primary forest with first time data and systematic BD monitoring		
<b>Benefits from the implementation of the pilots using the information generated by SIMEF to improve forest ecosystem conservation and management practices (component 3)</b>				
BD CCM REDD+	4. Conservation and sustainable use of forest biodiversity mainstreamed into sector development policies and regulatory frameworks and local and regional land-use plans covering 479,200 hectares of forest ecosystems resulting in:  a) forest degradation rate reduced from the current 77,000 ha/year;	a) 20% by EOP  b) 4,300 ha by	a) 6.8x10 <sup>6</sup> t CO <sub>2</sub> eq in avoided emissions	a) 40.6x10 <sup>6</sup> t CO <sub>2</sub> eq in avoided emissions

<sup>17</sup> For component 3, the benefits are estimated using the FAO EX-ACT carbon Balance Tool applying 670 tC/ha as a Chile tier 2 average carbon value for the forest ecosystems in the O'Higgins and Los Rios regions. For further details on the calculation, please see the EX-ACT file in appendix 10

	b) recuperation of degraded forest; and	EOP; 20,000 ha 5 years after EOP 100,000 ha. 20 years after EOP <sup>18</sup>	b) 2.2x10 <sup>6</sup> t CO <sub>2</sub> eq sequestered  Net carbon balance of -9.0x10 <sup>6</sup> t CO <sub>2</sub> eq (38% uncertainty)	b) 13.5x10 <sup>6</sup> t CO <sub>2</sub> eq sequestered  Net carbon balance of -54.2x10 <sup>6</sup> t CO <sub>2</sub> eq (38% uncertainty)
BD SFM/RE DD+	a) reduced fragmentation in forest habitats and stabilization of populations of key threatened tree species	a) 10% increase in core areas and 10% increase in average areas of patches in the O'Higgins and Los Rios Regions 5 years after the end of Project		
BD CCM SFM/ REDD+	5. Adoption of SFM practices in LULUCF and REDD+ recuperating degraded native forest (SFM pilots)	25% increase in the number of sustainable forest management plans (2,000 ha)		
CCM REDD+	6. MRV systems functioning for forest under SFM and REDD+ initiatives allowing for the certification of forest-derived carbon credits	Targeting 4x10 <sup>5</sup> t C under SFM covered by MRV systems	4x10 <sup>5</sup> t C under MRV system potentially eligible for carbon credits	Could potentially generate USD 4.8x10 <sup>6</sup> in the medium term (4x10 <sup>5</sup> t C x USD 12/ t CO <sub>2</sub> -eq) <sup>19</sup>

## 2.6 COST EFFECTIVENESS

The project's three components will collectively address the threats to global environmental benefits provided by forest ecosystems in Chile by removing the identified barriers, providing Chile with an excellent opportunity to expand the current NFI design to cover the whole territory of the country and including non-productive native forest, biodiversity and socioeconomic variables, thus, creating an integrated monitoring and assessment system of forest ecosystems.

Cost-effectiveness is considered in the design of Component 1 by building on the already existent institutional coordination and collaboration framework of MINAGRI (INFOR, CONAF, CIREN), MMA, regional and local governments and key stakeholders. The project will develop institutional arrangements that will promote the enhanced coordination, collaboration, support and participation of the multiple stakeholders involved in forest ecosystem monitoring. Moreover, technical assistance will be provided for the development of a set of cost-efficient methodological tools and protocols for data collection, analysis and

<sup>18</sup> Estimated by INFOR 2010 "Estudio de potencial de mitigación de la ley de Recuperación de Bosque Nativo" ODEPA-Ministry of Agriculture

<sup>19</sup> This estimation is based on the assumption that the carbon market will recover to 2011 price levels. According to the "State of the Voluntary Carbon Market" Ecosystem Marketplace and Bloomberg New Energy Finance, 2012, prices for forest carbon credits are highly stratified depending on the market. The average price for SFM and REDD project credits in 2011 was USD 12/ t CO<sub>2</sub>-eq. However, in 2013 the price had dropped to USD 4.2/ t CO<sub>2</sub>-eq.

construction of indicators related to the monitoring and assessment of forest ecosystems. Capacity development will also involve on-the-job and formal training for technical staff, decision-makers, and local, regional and national interest groups.

Component 2 will promote cost-effectiveness through harmonizing the existing data models and databases establishing in this manner a single information management system comprising user-friendly tools (e.g. web mapping) and products (e.g. thematic maps) that will provide coherence to the national information and facilitating access to and utilization of the information by the different user groups.

The proposed actions under Component 3 will also contribute to cost-effectiveness. The improved official data generated by the SIMEF on the state and conditions of forest ecosystems and their services, will allow the government and key stakeholders to better identify suitable corrective actions on already existing policy, planning and regulatory instruments related to forest management (e.g. Native Forest Law, regional land use plans and communal development plans), and further develop and implement new policies, legal and normative instruments, all aiming at SFM and forest ecosystem conservation. The pilots to test the application of SIMEF generated information to improve policies, regulation and planning processes that promote SFM, support REDD+ and conservation of biodiversity in forest ecosystems at local, regional and national levels will provide diversity in examples and lesson learned, which will be the key for the further replication in a bottom-up strategy for biodiversity and carbon stock conservation mainstreaming based on the improved access to data on forest biodiversity carbon and other ecosystem services.

These set of cost-effective measures will help ensure that the information generated by the SIMEF is the result of user needs and demands given it is based on a bottom-up approach, and securing the implementation of the SIMEF initiative and the timely supply of the information necessary to report on carbon stock changes, land use dynamics and forest ecosystems integrity status and trends.

## **2.7 INNOVATIVENESS**

The project is innovative in that it will establish an institutional framework that will provide a solution to current deficiencies in coordination and collaboration of the key institutions involved in forestry ecosystem monitoring that result in sometimes contradictory and confusing information and products generated by the NFI and the Vegetation Cadastre. Harmonization of methodologies and protocols for data collection and processing, integration of data models and databases into a single information management system, and the development of user specific information and products will ensure the coherence of the information generate and its usefulness. In addition, the project is innovative in not only improving the quality and coherence of the information generated but also testing the application of SIMEF generated information in concrete pilots improving policies, regulation and planning processes that promote SFM, support REDD+ and conservation of biodiversity in forest ecosystems at local, regional and national levels. This will provide diversity in examples and lessons learned which will support the upscaling of the experience throughout the country's regions. In this manner, decision-makers and other relevant stakeholders at national, regional and local levels will be capable of developing adequate policies and regulations, as well as taking decisions and remedial actions to face the current degradation of native forests and loss of carbon stocks and habitats for global important biodiversity.

## SECTION 3 – FEASIBILITY (FUNDAMENTAL DIMENSIONS FOR HIGH QUALITY DELIVERY)

### 3.1 ENVIRONMENTAL IMPACT ASSESSMENT

Following FAO's *Environmental Impact Assessment (EIA): Guidelines for FAO Field Projects*<sup>20</sup>, the proposed Project is classified under category C<sup>21</sup>. The corresponding Environmental and Social Review Form certified by the FAO Lead Technical Officer for the project is attached in Appendix 8.

### 3.2 RISK MANAGEMENT

Project risks have been further identified and analysed during the full project preparation and mitigation measures have been incorporated into the project design (see Risk Matrix in Appendix 4). With the support from and under the supervision of FAO, the Executive Secretariat (ES) will be responsible for the day-to-day management of these risks and the effective implementation of mitigation measures. The project's M&E system will serve to monitor project outcomes and outputs indicators, project risks and mitigation measures. The ES will also be responsible for monitoring the effectiveness of mitigation measures and adjusting mitigation strategies as needed, and identify and manage any eventual new risks not foreseen during project development, in dialogue with other project partners.

The six-monthly Project Progress Report (see section 4.5.3) is the main tool for project risk monitoring and management. The reports include a section on systematic follow-up of risks and mitigation actions identified in previous reporting periods. The PPRs also include a section for identification of eventual new risks or risks that still need attention, their rating and mitigation actions, as well as the responsible for implementing and monitoring those actions and the expected timeline. FAO will monitor the project risk management closely and follow up if needed by providing support for the adjustment and implementation of risk mitigation strategies. Reporting on risk monitoring and rating will also be part of the annual Project Implementation Review (PIR) prepared by FAO and submitted to the GEF Secretariat (see section 4.5.3).

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<sup>20</sup> See <http://www.fao.org/docrep/016/i2802e/i2802e.pdf>

<sup>21</sup>Category C projects should have minimal or no potential negative environmental (or social) impacts, either individually or cumulatively. They should not be controversial in terms of the interests of key stakeholders. As such, they do not require further analysis or impact assessment. An indicative list of projects for Category C includes: natural resource assessments and monitoring; environmental and sustainable development analysis; monitoring and evaluation exercises; desk studies, workshops, meetings; scientific research and field surveys. (However, certain field research activities which may involve agrochemicals and biotechnologies may be classified as Category B.); research and extension in agriculture, forestry and fisheries; remote sensing and geospatial analysis; capacity development, communication and outreach programmes, including training; minor construction activities and maintenance of installations; institutional development, including norms and standards; health and education programmes; micro-credit programmes/projects; support to the development of income-generating activities at household or Farmer-Based Organization (FBO) level (i.e. small-scale "cottage industries"); distribution – to vulnerable or disaster-affected households – of agricultural inputs (seeds, fertilizer, tools, small livestock) that are already known by the target groups and which are available locally.

### 3.2.1 Risks and mitigation measures

The table in Appendix 4 summarises the risks identified and analysed during the full project preparation, its probability of occurrence and proposed mitigation measures.

### 3.2.2 Fiduciary risk analysis and mitigation measures (only for NEX projects)

INFOR, through its office in Valdivia, will be the national Executing Partner of the project entering into an Execution Agreement with FAO allowing for the transfer of the GEF resources for executing all project activities. To identify and mitigate any fiduciary risks a review of the World Bank and the Inter-American Development Bank's assessments of the macro fiduciary environment has been reviewed and a micro level fiduciary assessment of INFOR has been conducted. Findings are presented below.

#### *a) Macro analysis*

**At the macro** level Chile's overall fiduciary environment is in the World Bank (WB) Country Partnership Strategy (CPS) for the Republic of Chile for the period FY11-FY16 (January 11, 2011) assessed as low. Chile is characterized as a high income country according to the WB classification, with one of the most politically stable systems in Latin America, strong institutions and a solid record of economic growth during the last two and a half decades.

In 2005 the WB and the Inter-American Development Bank (IADB) jointly carried out a Country Financial Accountability Assessment<sup>22</sup>. The assessment showed Chile as an upper- to middle-income country of 15.4 million people with the most robust economic performance in the Latin America region. GDP was US\$ 72.4 billion in 2003 and per capita income' US\$ 4,390, one of the highest in Latin America. Chile's macroeconomic policies and strong fundamentals have, to a large extent, insulated it from regional crises and have allowed continued growth in recent years, albeit at lower rates than in the mid-1990s.

This performance is sustained by sound policies and an ambitious structural reform agenda. Public sector reforms of the 1990's resulted in a considerable improvement in public finance, health, education and social security, with emphasis on good and expeditious delivery of services to citizens. In early 2003, the Government and the opposition agreed to a national proposal to modernize state institutions, ensure greater transparency, prevent corruption, and stimulate growth. Among the main elements of the reform package are: a public procurement law, establishing an electronic procurement and information system, and increasing the transparency of government contracts for the purchase or lease of goods; and a package of measures to increase government transparency.

Transparency International assigned Chile a 7.5 corruption perception rating compared to an average of 3.4 for the LAC region<sup>23</sup> (a rating of 10 corresponds to public perception of zero corruption). Central public sector institutions score high in economic management, structural

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<sup>22</sup> Given the low level of fiduciary risk environment in Chile, the good performance of loans from the World Bank and IADB and the current level of operations of both financial institutions in the country, it has not been considered necessary to conduct a new assessment since then.

<sup>23</sup> The Corruption Perceptions Index ranks countries/territories based on how corrupt a country's public sector is perceived to be. It is a composite index, drawing on corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions. In 2013 Transparency International assigned Chile a 71 corruption perception rating. Scores range from 0 (highly corrupt) to 100 (very clean).

policies, and overall public sector management, out-ranking regional counterparts and income group comparators.

In terms of Public Financial Management in Chile, the abundant trust in government in Chile today can be attributed, in part, to two elements of transparency: its fiscal reporting and the incontestable review by a competent, independent authority - the CGR (Controller General of the Republic). Chile has effectively centralized policies and procedures to support aggregate fiscal discipline. Aggregate fiscal discipline, measured by total fiscal balance or public debt, and the related predictable funding of the budget in Chile has been achieved through a well-developed budget system which provides for a realistic and comprehensive budget.

The main feature of Chile's public financial management (PFM) operations has been the combination of centralized policies and procedures operated by DIPRES (National Budget Office) and CGR with decentralized service delivery and financial management operations through 190 service agencies. With the development of a centralized integrated financial management system (SIGFE), the strengthening of internal controls in the service agencies and the modernization of the external audit system, the centralized control can now continue to evolve to greater reliance on accountability for results, with a focus on outputs rather than inputs by the agencies.

*b) Micro analysis*

**At the micro level** as part of the preparation of the present Project an assessment of INFOR's fiduciary standards and related risks for the project execution were conducted in March 2014 including capacities to comply with financial, procurement and project planning, monitoring and reporting required standards and the overall fiduciary risk was rated as low. The following is a summary of the assessment. The full assessment is available on FAO's Field Project Management Information System (FPMIS).

INFOR is an institution highly specialized in investigation in and execution of forestry projects which has technical staff highly qualified in the issues to be managed under the execution of this project. It is a private institution with public administration, which means that it has to comply with all rules, regulations and systems that apply to the public administration in Chile and it is mainly funded by public resources. These resources are 4 million USD from 6 different public funding sources the main source being MINAGRI under an annual performance contract requiring high standards for performance based reporting on the expenditures of funds.

The public rules, regulations and systems INFOR complies with include: Chile's public procurement and contracting system, Chilecompra, which is in conformity with international fiduciary standards for systematic transparency, competitiveness, and cost-effectiveness in contracting and procurement processes; independent annual external audits by an auditor registered under the Superintendence of Financial Services of the Chilean State and independent internal audits; law on administration of public funds and transparent trimester reporting on resources received. The Financial and Administration Division has 11 permanent staff all qualified in public financial administration. In 2010 INFOR implemented International Finance Reporting Standards (IFRS), International Accounting Standards (IAS) and NIC 1 of the International Accounting Standards Board (IASB) in its financial management system. The financial management system has trimester financial statements with statements audited 30 June and 31 December every year and published in [www.infor.cl](http://www.infor.cl).

All projects executed have a separate register and account. Finally, INFOR links financial and technical progress in its results based project monitoring and management system.

The only minor and fully manageable risk is, that INFOR has not received funds from a UN institution before and needs to be familiarized with FAO funds transfer and reporting rules and procedures. Also INFOR has no previous experience in and system for doing activity and financial planning with a range of partners as required for this project, which needs to be established via the Project's Operation Manual (POM).

b) *Action plan for capacity strengthening of Executing Partner if needed*

To mitigate the minor risks identified in the fiduciary risk assessment a Mitigation Plan for Fiduciary Risks a risk mitigation plan has been agreed between the FAO Representation in Chile and INFOR including deadlines for actions to be taken linked to funds transfer as presented in table 3.1 below:

**Table 3.1** Mitigation Plan for Fiduciary Risks

<b>Identified Risks</b>	<b>Causes</b> (Specific reason by the Executing Partner does not comply with this requirement)	<b>Impacts</b> (What are the potential impacts in the project and the risk level?)	<b>Mitigation measures and corrective actions</b> (To be taken before the signature of the GCP Agreement or during project inception. Please specify the milestones for reporting to FAO the fulfilment of these actions)
<b>1. Executing Partner</b>			
Finance and accounting personnel is not familiarized with FAO procedures regarding fund transfers and reporting	They have not managed previous FAO projects	<b>Low Risk</b>	Training of key personnel in FAO fund transfer procedures and preparation of a POM incorporating FAO required formats and procedures in INFOR systems and procedures. Before second disbursement of funds.
<b>2. Flow of funds</b>	<b>N/A</b>		
<b>3. Personnel</b>	<b>N/A</b>		
<b>4. Contracting and procurement</b>			
Partner does not include the FAO's no-objection among its procedures	They do not manage FAO funds	<b>Low Risk</b>	Including procedures for FAO no-objection in POM and include the same in training of INFOR and project staff. Before second disbursement of funds
<b>5. Accounting policies and procedures</b>			
No procedures established to plan activities, collect information from the units in charge of the different components and prepare the annual budgets	A specific procedure for project preparation is used, undertaken by personnel with a high level of experience	<b>Low Risk</b>	Establishment of procedure for project planning and progress monitoring and reporting involving all project partners in the POM and training of INFOR and project staff in the same. Before second disbursement of funds.
<b>6. Internal Audit</b>	<b>N/A</b>		

<b>Identified Risks</b>	<b>Causes</b> (Specific reason by the Executing Partner does not comply with this requirement)	<b>Impacts</b> (What are the potential impacts in the project and the risk level?)	<b>Mitigation measures and corrective actions</b> (To be taken before the signature of the GCP Agreement or during project inception. Please specify the milestones for reporting to FAO the fulfilment of these actions)
<b>7. External Audit</b>	<b>N/A</b>		
<b>8. Planning, reports and monitoring</b>	<b>N/A</b>		
<b>9. Information systems</b>	<b>N/A</b>		



## SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

### 4.1 INSTITUTIONAL ARRANGEMENTS

The main institutions involved in the project in addition to FAO are the Ministry of Agriculture (MINAGRI) and its services: National Forestry Institute (INFOR), the National Forestry Corporation (CONAF), and the Renewable Natural Resources Information Center (CIREN), and the Ministry of Environment (MMA). At regional level the Regional and Administrative Development Sub-secretariat (SUBDERE) for regional development will be main partner for the identification of indicators related to forest ecosystem needed for appropriately support planning processes, local policy development, and regional regulation development. Regional governments and municipalities will be involved in mainstreaming the use of SIMEF generated data in the development of regional and communal development plans, including environmental plans. The municipal government are also active members of the Model Forests where pilot interventions will be implemented (see section 1.1.c for more description of the mandate and responsibilities of these institutions and section 4.2 for their roles and responsibilities in the project).

FAO, INFOR, CONAF and CIREN will collaborate with the GEF implementing agencies of other GEF-supported programs and projects to identify and facilitate synergies, as well as with other agencies that support projects financed by other donors. Collaboration will be undertaken through: (i) informal communications among agencies; (ii) exchange of information; (iii) establishment of the national SIMEF steering committee and the Regional Participation Committees with key institutional members leading other relevant initiatives. To ensure that existing opportunities from coordination and collaboration between different initiatives are realized explicit coordination requirements have been included in the SIMEF Executive Secretariat's scope of work (see below). Inter-agency and project coordination will be facilitated by FAO's participation in agency coordination platforms, project staff participation in relevant public fora, cross-site visits, exchange of information, postings on the project website and mailings of relevant publications and newsletter.

The project will in particular coordinate actions with the following GEF projects. The executing agencies of these projects include MMA, MINAGRI and CONAF, all of them partners in the SIMEF, which will importantly facilitate the coordination.

1) IBRD/GEF *Sustainable Land Management* (GEF #4104) executed by CONAF with the objective to develop a national incentive program for mainstreaming sustainable land management planning and practices in order to combat land degradation, conserve biodiversity of global importance and protect vital carbon assets. The information generated by the SIMEF supported by the proposed project will inform the decision-making and policies and incentives development for SLM in areas with forest ecosystems to be promoted by this project.

2) UNEP/GEF *Protecting Biodiversity and Multiple Ecosystem Services in Biological Mountain Corridors in Chile's Mediterranean Ecosystem* (GEF #5135) executed by the MMA will seek to consolidate public-private initiatives to conserve globally significant biodiversity and multiple ecosystem services in the mountain areas of Chile's Mediterranean Ecosystem in the Metropolitan Region. SIMEF can provide accurate information related to forest cover, forest change, land use, maps to be used for the elaboration of management plans.

3) UNDP/GEF *Strengthening National Frameworks for IAS Governance - Piloting in Juan Fernandez Archipelago* (GEF #4330) executed by CONAMA has the objective of establishing national policy frameworks and institutional capacities to control the introduction and spread of invasive alien species (IAS) through Trade, Travel and Transport: piloting surveillance and control measures in a high biodiversity environment threatened by IAS -- the Juan Fernandez archipelago. SIMEF information will be key for the implementation of management and monitoring of the biodiversity.

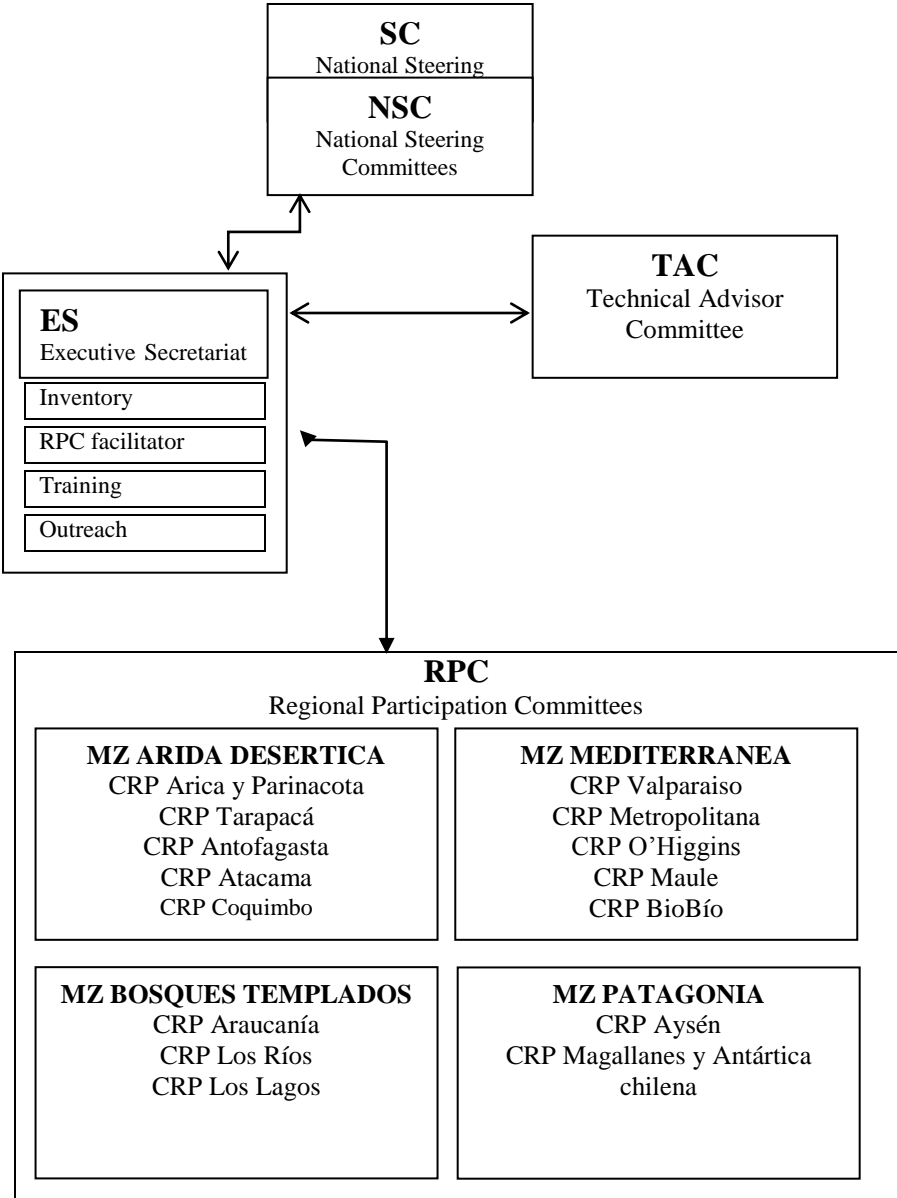
4) FAO/GEF *Mainstreaming the Conservation, Sustainable Use and Valuation of Critically Threatened Species and Endangered Ecosystems into Development-frontier Production Landscapes of the Arica y Parinacota, and Biobio Regions* (GEF #5429) executed by MMA and MINAGRI has the objective of integrating the conservation and sustainable use of critically threatened species and endangered ecosystems into priority development-frontier landscapes, by promoting sustainable agricultural and forestry production, capacity-building, and socio-environmental benefits, in the Arica y Parinacota, and Biobío regions. SIMEF information is to be used for the evaluation of forest area and forest land use change in the region, for the identification and connection of agro-environmental corridors for threatened and endangered species in the area. Information of this project can be used as biodiversity indicator.

5) FAO/GEF *Strengthening and Development of Instruments for the Management, Prevention and Control of Beaver (Castor Canadensis), an Invasive Alien Species in the Chilean Patagonia* (GEF #5506) executed by MMA, CONAF and other agencies will seek to establish subnational regulatory frameworks and institutional and technical capacities for the Magallanes region to manage and control the spread of invasive alien species (IAS) through piloting a comprehensive management and control framework for a high-value biodiversity environment threatened by the beaver as an aggressive IAS in the Chilean Patagonia. SIMEF information is to be used for the evaluation of affected forest area, threat and possible migration of beavers. This information is key for the control of this invasive specie, and its direct impact on natural ecosystems of the Patagonia.

## 4.2 IMPLEMENTATION ARRANGEMENTS

FAO will be the GEF Agency responsible for supervision and provision of technical guidance during project implementation. The project will be implemented by the **MINAGRI**, represented by INFOR as the **Executing Partner** and CONAF and CIREN as **co-Executing Partners**, in coordination with the MMA, SUBDERE as an invited institution, SAF, regional and local governments and, other project partners like Pangipulli and Cachapoal model forest. The project Executing partners will be responsible for ensuring coordination of the three project components, as well as coordination and collaboration with the regional and communal governments, local organizations and other partners. A **National SIMEF Steering Committee (NSC)**, which will also serve as the project steering committee, will be set up to provide oversight of and coordinate the planning of project implementation. **Regional Participation Committees (RPC)** and a **Technical Advisory Committee (TAC)** will be established as part of the institutional coordination and management framework. The Project will be managed through the institutional structure depicted in Figure 4.1 below

**Figure 4.1:** Institutional Arrangements for Project Implementation



*a) Roles and responsibilities of executing partners*

The overall distribution of roles and responsibilities between the three main participating institutions under the MINAGRI is as follows. **INFOR** will be responsible for the management of the database, the data collection in relation to the expanded sampling of the NFI, data quality control, data processing, generation of emission factors, calculation of changes in carbon stocks, and will describe the trends of forest biodiversity and the stability of the forest ecosystems. **CONAF** will be responsible for the monitoring of land-use changes in accordance with the Law N°20.283. **CIREN** will be responsible for disseminating the data and geo-spatial information generated by INFOR and CONAF under a concept of user-friendliness and using maps servers technology.

**INFOR** will be the **Project Executing Partner** directly responsible for technical implementation and day-to-day monitoring of project activities as well as financial management contracting and procurement. INFOR will enter into an Execution Agreement

with FAO allowing for the purchase of goods, minor works, and services needed to execute the project. Based on the assessment of INFOR's fiduciary standards and the fiduciary risks mitigation plan (see section 3.2.2), FAO will ensure that INFOR's rules and procedures for project execution are acceptable in accordance with FAO rules and regulations and GEF minimum fiduciary standards, and INFOR will follow in particular rules defined in the Execution Agreement. The Execution Agreement will outline in details the roles and responsibilities of INFOR and procedures with respect to financial management, procurement, recruitment, project progress reporting, financial reporting and audit, copyright, and other legal aspects of collaboration. A detailed Project Operational Manual (POM) will be prepared by INFOR and cleared by FAO before the second disbursement of funds. The POM will establish rules, detailed procedures and responsibilities in relation to all aspects of the project operation based on the Execution Agreement and rules and regulations of INFOR.

INFOR will use its own financial management, output and outcome monitoring, and procurement systems and procedures adjusted to FAO Rules and GEF minimum fiduciary standards. INFOR will submit procurement and contract documentation for prior clearance by FAO (see sections 4.3.6 and 4.4 below), and six-monthly statements of expenditures and cash transfer requests based on updated Annual Work Plans and Budgets (AWP/B) including a detailed budget for the following six months period, and annual audited financial statements to the FAO Representation in Chile. Further, INFOR will prepare and submit to the FAO Representation Project Progress Reports (PPR), AWP/B, and all documentation needed for the preparation of the annual Project Implementation Review (PIR) (see section 4.5.3 below).

In more details the responsibilities of INFOR includes: (i) maintaining a separate project account for project funds; (ii) jointly with project co-executing partners, planning and monitoring of the technical aspects of the Project, including regular visits to project intervention areas and monitoring progress in achieving project outcomes and outputs, preparing periodic progress reports, and regular consultations with beneficiaries and contractors; (iii) developing AWP/B with inputs from all stakeholders participating in project execution (iv) procuring goods and services on a transparent and competitive basis (e.g., review and approval of TOR/specifications for personnel/contractors/vendors and required bidding documentation with the support from FAO as needed, and awarding and entering into contracts of recruitment or procurement); (v) ensuring funds are used in accordance with agreed work plans and project budget; (vi) preparing, authorizing and adjusting commitments and expenditures; (vii) ensuring timely disbursements, financial recording and reporting against output based budgets and work plans; (viii) managing and maintaining budgets, including tracking commitments, expenditures and planned expenditures against output based budget and work plan; (ix) coordinating the financing from FAO/GEF with that from other sources; and (x) maintaining productive, regular and professional communication with FAO and other project stakeholders to ensure the smooth progress of project implementation.

The institutional arrangements for project execution provide for the use of the existing structure within INFOR including the Financial, administrative and procurement Divisions as well as the unit for monitoring and supervision of projects.

MINAGRI, as the ministry to which INFOR belongs, will designate a **National Project Director (NPD)**. The NPD will be a MINAGRI staff and will have the responsibility of supervising and guiding the General Coordinator of the Executive Secretariat on national policies and priorities. He/she will also be responsible for coordinating the activities with all the MINAGRI services related to the different project components, as well as with the project partners. He/she will be responsible for requesting FAO the timely disbursement of GEF

resources that will allow the executing of project activities, in strict accordance with the Project Results-Based Budget and the approved AWP/B for the current project year.

An **Executive Secretariat (ES)** will be established in INFOR and will be responsible for: i) in close consultation with co-executing partners and Regional Participation Committees insuring coordination and technical execution of the project through timely and efficient implementation of AWP/B; ii) follow closely the implementation of project activities, handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of national and local inter-institutional collaboration; iii) monitor project progress and insure timely delivery of project inputs and achievement of project outputs; iv) organize workshops and annual meetings for the Project for monitoring project progress and develop work plans with detailed budget for the next year to be approved by the national SIMEF Steering Committee; v) implementing the project's M&E plan, managing its monitoring system and communication programme, the elaboration of six-monthly Project Progress and Financial reports and assist in the preparation of the annual Project Implementation Review (PIR) and midterm and final evaluations, and eventual development of an agreed adjustment plan in project execution approach, if needed; vi) provide guidance and advice to the NPD on other on-going and planned activities facilitating collaboration between the Project and other program, projects and initiatives; vii) act as the secretariat for and provide technical advice to the national SIMEF Steering Committee.

In addition to the NPD the ES will be supported by the following **Co-financed government staff** assigned to the project:

- Head of ES Inventory Programme provided by current staff of INFOR
- Executive Secretaries of the Regional Participation Committees (15). Initially these posts will be assumed by staffs of INFOR's Regional Offices.

To further strengthen the ES the GEF resources will finance an administrative assistant, a general coordinator and technical heads of programmes managed by the ES in order to implement the project.

Under the supervision of the NPD, the ES will be headed by a **General Coordinator (ES/Coordinator)** who will be in charge of project daily planning, management and technical supervision of project activities including: i) comply with agreed project management procedures, in order to facilitate the implementation of the project and ensure the delivery of high quality results; ii) in consultation with partners, prepare AWP/B to be submitted to FAO and the national SIMEF Steering Committee; (iii) provide secretarial and administrative assistance and organize meetings of the Steering Committee; (iv) prepare draft terms of reference for consultancies and service provision contracts; (v) coordinate and prepare draft project progress reports to be submitted to FAO and the Steering Committee; (vi) participate in monitoring and evaluation missions; (vii) pursue active coordination with other institutions and initiatives to create synergies, avoid duplications and achieve efficiency in recourse utilization including in particular the initiatives listed under section 4.1 above; (viii) provide technical guidance to project staff, service providers and partners and ensure that suitable approaches are applied during project implementation (cost-effective, participatory, gender sensitive and integrated approaches, involving multiple stakeholders and vulnerable groups, etc.); (ix) convene meetings of the ES on a regular basis, to coordinate activities, exchange lessons learned and harmonize approaches; (x) Prepare reports on executed co-financing to be submitted to FAO.

The ES will incorporate four **Heads of Programmes**: i) Inventory, responsible for all the activities related to field work, data collection, data modelling and database management and

updating; ii) RPC Facilitator, responsible for regional level coordination and local stakeholders involvement in SIMEF activities; iii) Training, responsible for the capacity building of SIMEF staff and partners and, iv) Outreach, responsible for dissemination of results and key findings, producing user specific material securing impacts related to the results, and tracking impacts on policy and regulations. An **Administrative Assistant** will assist the ES/Coordinator in all the issues relative to the Secretariat's administrative and financial management.

**CONAF will be co-executing partner** of the project responsible for the monitoring of land-use changes in accordance with the Law N°20.283. This will include participation in: capacity building activities in remote sensing technologies and field measurements; development of data standardization and management protocols and the data integration model; preparation of thematic publications based on SIMEF generated information; and the implementation of the four pilots on the utilization of SIMEF generated information to improve forest policies and regulations, mainstreaming of forest conservation and sustainable use in RLUPs and PLADECOS, improve SFM guidance and practices, and establish the carbon baseline for MRV systems. INFOR and CONAF will sign a Letter of Agreement for the transfer of funds from INFOR to CONAF allowing CONAF to purchase minor goods and services for the implementation of these project activities under the responsibility of CONAF.

**CIREN will be co-executing partner** of the project responsible for disseminating the data and geo-spatial information generated by INFOR and CONAF under a concept of user-friendliness and using maps servers technology. In addition CIREN will participate in: capacity building activities in remote sensing technologies and field measurements; development of data standardization and management protocols and the data integration model; and preparation of thematic publications based on SIMEF generated information.

*b) Roles and responsibilities of the GEF agency*

The Food and Agriculture Organization (FAO) will be the GEF Agency for the project. FAO will provide supervision and technical guidance services during the project execution. Administration of the GEF grant will be in compliance with the rules and procedures of FAO, and in accordance with the agreement between FAO and the GEF Trustee.

As the GEF agency for the project, FAO will:

- Manage and disburse funds from GEF in accordance with the rules and procedures of FAO;
- Enter into an Execution Agreement with INFOR as the national executing agency for the provision of services to the project;
- Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned forest ecosystem monitoring, forest policies and regulations, SFM and REDD+;
- Carry out at least one supervision and technical advice mission per year; and
- Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

**The FAO Representative in Chile**, assisted by the FAO GEF Project Task Manager (see below) will be **the Budget Holder (BH)** and responsible for the management of the GEF resources and all aspects of the Execution Agreement that will be signed between FAO and INFOR. As a first step in project start-up, the FAO Representation in Chile will establish an interdisciplinary Project Task Force (PTF) within FAO to guide the implementation of the project. The Project Task Force will be composed of technical officers from the participating FAO divisions and offices and of operational officers and is chaired by the BH. The FAO Representative will in particular be responsible for: (1) disbursement of GEF funds to INFOR based on satisfactory reporting on project progress and statement of expenditures (see section 4.3.6 on disbursements and section 4.5.3 on reporting); (2) review of financial reports and supervision of INFOR's financial management and use of resources (see section 4.3.6 on financial management and section 4.5.3 on reporting), including clearance of Budget Revisions in consultation with the FAO Lead Technical Officer (LTO – see below) for submission to TCI/GEF Coordination Unit for approval; and (3) supervision of contracting and procurement processes executed by INFOR (see section 4.4 below).

The FAO Representative will in consultation with the LTO, Lead Technical Unit (LTU – see below), and the GEF Coordination Unit, give no-objection to AWP/B submitted by INFOR. Disbursement of GEF funds for the provision of goods, minor works, and services to the project will be carried out by the FAO Representative in accordance with the provisions of the Execution Agreement. The disbursement will be carried out upon submission by INFOR to the FAO Representation of six-monthly financial statements of expenditures, procurement and contract documentation, and disbursement requests based on an updated AWP/B including detailed budget for the following six months period to be cleared and approved by the Representative. Further, the disbursements are also subject to submission of a Project Progress Report to be approved by the FAO LTO. The BH will submit the financial statement of expenditures, the disbursements requests, and the Project Progress Report to the GEF Coordination Unit in the Investment Center Division (TCI) for clearance and uploading on the FPMIS before the disbursement can be finally approved by the Representative.

A **Project Task Manager (PTM)** will be contracted by the BH in the FAO Office in Chile, in consultation with the LTO, LTU and the GEF Unit. The PTM will, under direct supervision of the FAO Representative in Chile, support the FAO Representative in the supervision of financial management, project progress, procurement and contracting processes, and in the provision of technical guidance to the project, in close consultation with the LTO, and the Project Task Force. The PTM will be paid from GEF fee resources and will have the following main tasks:

- Review project progress reports from INFOR and submit them to the LTO for approval and subsequently to the GEF Coordination Unit for information and eventual comments and uploading on the FPMIS;
- Participate in annual project progress review and planning workshops, and review, provide comments, and advise the FAO Representative on giving no-objection to AWP/B in consultation with the LTO, LTU and the GEF Coordination Unit;
- Review procurement and contract documentation submitted by INFOR for procurement and contracts to be financed by GEF resources and advise the FAO Representative on giving no-objection, in close consultation with the LTO and the GEF Coordination Unit;
- Review financial statement of expenditures of the GEF resources and Cash Transfer Requests of GEF resources in accordance with the AWP/B and previous Cash

Transfer Requests, submitted by INFOR, and advise the FAO Representative on his/her clearance of statements of expenditures and approval of cash transfers in consultation with the LTO and the GEF Coordination Unit;

- Review reports on executed co-financing submitted by INFOR;
- Conduct periodic supervision missions and support the provision of FAO technical and results-based management input to the project;
- Support the LTO in preparing the annual Project Implementation Review (PIR) report;
- Represent FAO in the national SIMEF Steering Committee during the implementation of the project (see below) and interview and selection panels for key project positions to be financed by GEF resources;
- Prepare draft TOR for mid-term and final evaluations, in consultation with the FAO Evaluation Office, the LTO, the LTU and the GEF Coordination Unit, support the organization of the mid-term and final evaluations, contribute to the development of an eventual agreed adjustment plan in project execution approach and supervise its implementation.

The **FAO Lead Technical Unit (LTU)** will be the Forest Assessment, Management and Conservation Division of the Forestry Department (FOM) responsible for providing technical guidance to the project as needed. The FAO Regional Office for Latin America and the Caribbean (RLC) will designate a Lead Technical Officer (LTO) for the project with expertise and forest ecosystem monitoring and SFM and REDD+. Under the general technical oversight of the LTU, the **Lead Technical Officer (LTO)** will provide technical guidance to the project team to ensure delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical backstopping from all the concerned FAO divisions represented in the Project Task Force (see above under BH responsibilities) responding to project requests. The LTO, supported by the LTU when needed, will be responsible for:

- Review and insure clearance from relevant FAO technical officers of TORs for consultancies and contracts to be performed under the project, and to CVs and technical proposals short-listed by INFOR/CONAF for key project positions, goods, minor works, and services to be financed by GEF resources;
- Supported by the FAO Representation in Chile (the PTM) review and insure clearance by the relevant FAO technical officers of final technical products delivered by consultants and other contract holders financed by GEF resources before the final payment can be processed;
- Assist with review and provision of technical comments to draft technical products/reports on request from INFOR/CONAF during project execution;
- Review and approve project progress reports submitted by the INFOR to the FAO Representation in Chile in coordination with the PTM and BH;
- Support the FAO Representative in reviewing, revising and giving no-objection to AWP/B submitted by INFOR to the FAO Representation in Chile and to be approved by the National SIMEF Steering Committee;
- Prepare the annual Project Implementation Review report, supported by the ES/Coordinator and the project team, which will be presented to the BH and the FAO-GEF Coordination Unit for approval, finalization and submittal to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that the ES/Coordinator has provided information on co-financing provided during the course of the year for inclusion in the PIR;



- Undertake field annual (or as needed) supervision missions;
- Review and revise TORs for the mid-term evaluation, participate in the evaluation mission including the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation supported by the BH and the PTM.
- Review and revise TORs for the final evaluation; participate in the mission including the final workshop with all key project stakeholders, development and follow-up on recommendations on how to insure sustainability of project outputs and results after the end of the project.

The **FAO-GEF Coordination Unit** will review and provide eventual comments on Project Progress Reports, review and clear financial reports, and budget revisions based on the AWP/B. The GEF Coordination Unit will review and clear the annual PIR and undertake supervision missions if considered necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GEF Coordination Unit. The GEF Coordination Unit will also participate in the mid-term and final evaluations and the development of corrective actions in the project implementation strategy in the case needed to mitigate eventual risks affecting the timely and effective implementation of the project. The GEF Coordination Unit will in collaboration with the FAO Finance Division request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed. The GEF Coordination Unit will support the FAO Representation in Chile in all aspects of supervising the NEX implementation modality that this project is following.

The **FAO Finance Division** will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO-GEF Coordination Unit, request project funds on a six-monthly basis from the GEF Trustee.

### *c) Project decision-making mechanisms*

The **National SIMEF Steering Committee (NSC)**, which will function also as the Project steering Committee during the implementation of the project, will comprise MINAGRI, CONAF, CIREN, INFOR, MMA, as permanent members and SUBDERE as invited member. Other public institutions, NGOs and small farmers and Indigenous Peoples' organizations that work in SIMEF related issues may be invited to participate as advisors. FAO will be a member during the implementation of the GEF resources for which FAO is the GEF implementing agency. The NSC will take decisions on the overall project management and will be in charge of ensuring the project strategic approach is in line with national, regional and local policies linked to REDD+ and SFM and that project activities are coordinated among all relevant institutions at all levels. The NSC will be chaired by the MINAGRI representative. The NSC will meet minimally twice a year and its responsibilities will include: (i) overall oversight of project progress and achievement of planned results as per the project document; (ii) take decisions in relation to the practical organization, coordination and implementation of the project; (iii) facilitate cooperation between project executing partners, project participating partners and project support at the local level; (iv) advise the NPD on other on-going and planned activities facilitating collaboration between the Project and other programmes, projects and initiatives; (v) facilitate that co-financing is provided in a timely and effective manner; and (vi) review and monitor the six-monthly Project Progress Reports and review and approve the AWP/B (see also section 2.2 output 1.1.1).

The **Technical Advisory Committee (TAC)** will have the main role of advising the ES when requested and especially its Inventory Programme in applying a consistent methodology adapted to the characteristics of the forest ecosystems of each one of the country's Macro Zones. Its members will be renowned scientists and professionals from the research centers that exist in each Macro Zone. The TAC will meet at least twice a year or more often as may be required by project implementation needs. Meetings may be held under different modalities depending of the nature of the subjects to be discussed (e.g. meetings per Macro Zones or bilateral meetings between a specific TAC member and the ES and the RPC) (see also section 2.2 output 1.1.3).

The **Regional Participation Committees (RPC)** will be established, one in each region (15 in total), and will have the objectives to: i) guiding and monitoring the implementation of the SIMEF at regional level; ii) promoting the use and mainstreaming of SIMEF information and products in regional and municipal REDD+ and LULUCF related policies and planning instruments; iii) provide feedback on information needs and on usefulness and user-friendliness of SIMEF information; and iv) supporting awareness rising and training of decision makers and professionals in the regions. Members will include, but will not necessarily be restricted to: representatives of the Regional Government (GORE), INFOR, CONAF, CIREN, Regional Ministerial Secretariats – SEREMI of Agriculture and Environment, one representative of NGOs, one representative of regional small farmer's organizations, one representative of Indigenous Peoples organizations (where relevant and in the regions where they exist), one representative of entrepreneurial organizations (when relevant), and a representative of the Regional Association of Municipalities (if existent) or other types of associations in accordance with land use planning criteria used in each region. A Chairperson will be elected among the members, who will convene and conduct the meetings on the basis of a pre-determined agenda. Each RPC will also have an Executive Secretary, who in a first stage will be the representative of the regional INFOR office. The RPCs will meet regularly at least two times per year or more often according to Project implementation needs (e.g. design and data collection phases). The RPC will relate with the NSC through the ES in all project matters to discuss and facilitate on the adjustment of methodologies in order to fulfil its role of coordinating and facilitating the implementation of the SIMEF in each region in regards to forest ecosystem inventories, information dissemination and contribution to regional and municipal policies. The PRCs will be involved in formulating the AWP/B and monitor project progress regarding activities and results in each region.

## **4.3 FINANCIAL PLANNING AND MANAGEMENT**

### **4.3.1 Financial plan (by component, outputs and co-financier)**

The total cost of the project is USD 31 902 615 of which USD 6 293 684 will be financed by the GEF grant and USD 25 608 931 will be cofinanced by INFOR, CONAF, CIREN, MMA, SAF and FAO.

Table 4.2 below includes the cost by component, output and co-financier and Table 4.3 includes the sources and types of confirmed co-financing. **FAO**, as GEF implementing agency, **will only be** responsible for the execution of the GEF resources and FAO co-financing.

**Table 4.2.** Project costs by component, outputs and co-financier

Component/output	INFOR	CONAF	CIREN	MMA	SAF	FAO	Total Co-financing	% Co-financing	GEF	% GEF	Total
<b>Component 1: Development of institutional coordination framework and capacities for the implementation of the SIMEF</b>	<b>271,800</b>	<b>271,800</b>	<b>63,600</b>	<b>185,605</b>	-	<b>55,000</b>	<b>847,805</b>	<b>44%</b>	<b>1,082,516</b>	<b>56%</b>	<b>1,930,321</b>
O 1.1.1: National SIMEF Steering Committee	81,600	81,600	10,200	10,200	-	15,000	198,600	95%	10,611	5%	209,211
O 1.1.2: SIMEF Executive Secretariat	29,200	29,200	6,200	6,200	-	-	70,800	10%	666,611	90%	737,411
O 1.1.3: Technical Advisory Committee	70,000	70,000	16,200	38,205	-	-	194,405	81%	45,611	19%	240,016
O 1.1.4 Regional Participation Committees	50,000	50,000	6,000	6,000	-	-	112,000	37%	190,611	63%	302,611
O.1.2.1 Data collection and processing protocols	8,000	8,000	-	-	-	-	16,000	15%	90,461	85%	106,461
O.1.2.2 Training in data collection uploading and analysis	33,000	33,000	25,000	125,000	-	40,000	256,000	77%	78,611	23%	334,611
<b>Component 2: Implementation of SIMEF</b>	<b>9,715,223</b>	<b>4,893,778</b>	<b>1,676,931</b>	<b>134,591</b>	<b>3,026,504</b>	<b>87,000</b>	<b>19,534,027</b>	<b>84%</b>	<b>3,753,917</b>	<b>16%</b>	<b>23,287,944</b>
O 2.1.1: Data collection on forest ecosystems country wide	9,363,738	4,542,294	1,601,388	59,049	3,026,504	67,000	18,659,973	86%	3,071,611	14%	21,731,584
O 2.1.2: Thematic maps and geospatial database	108,000	108,000	-	-	-	-	216,000	41%	305,111	59%	521,111
O 2.2.1 Data standardization and management protocols	38,400	38,400	19,200	19,200	-	-	115,200	29%	278,361	71%	393,561
O 2.2.2: Data integration model	89,485	89,484	29,743	29,742	-	-	238,454	90%	25,611	10%	264,065
O.2.2.3: Webmapping based on special information system	53,200	53,200	26,600	26,600	-	-	159,600	77%	46,611	23%	206,211
O.2.2.4: Thematic reports on the state of forest ecosystems	62,400	62,400	-	-	-	20,000	144,800	84%	26,612	16%	171,412
<b>Component 3: Application of the information generated by SIMEF in local, regional, and national policies and regulations, development and land-use planning and in support of SFM incorporating REDD+</b>	<b>1,684,740</b>	<b>1,804,237</b>	<b>259,912</b>	<b>251,983</b>	-	<b>180,000</b>	<b>4,180,872</b>	<b>78%</b>	<b>1,158,251</b>	<b>22%</b>	<b>5,339,123</b>
O 3.1.1: Tracking tool for assessment of the utilization of SIMEF data	88,320	88,320	-	-	-	-	176,640	34%	349,612	66%	526,252
O 3.1.2: SIMEF information disseminated and outreach strategy	505,156	581,117	29,960	239,783	-	140,000	1,496,016	82%	336,403	18%	1,832,419
O.3.1.3: Pilot on strengthening forest legal and regulatory framework with SIMEF information at the national level	92,400	92,400	4,800	4,800	-	5,000	199,400	37%	344,403	63%	543,803
O.3.1.4: Pilot on mainstreaming SIMEF information in RLUPs and PLADECOS at the regional and communal level	102,400	102,400	2,000	2,000	-	5,000	213,800	73%	78,611	27%	292,411
O.3.1.5: Pilot on improving local SFM guidelines and practices with SIMEF information at local level	88,800	88,800	5,400	5,400	-	20,000	208,400	90%	22,611	10%	231,011
O.3.1.6: Pilot on establishing the carbon baseline for MRV system with SIMEF information	807,664	851,200	217,752	-	-	10,000	1,886,616	99%	26,611	1%	1,913,227
<b>Project Management</b>	<b>533,478</b>	<b>371,125</b>	<b>31,847</b>	<b>39,777</b>	-	<b>70,000</b>	<b>1,046,227</b>	<b>78%</b>	<b>299,000</b>	<b>22%</b>	<b>1,345,227</b>
<b>Total Project</b>	<b>12,205,241</b>	<b>7,340,940</b>	<b>2,032,290</b>	<b>611,956</b>	<b>3,026,504</b>	<b>392,000</b>	<b>25,608,931</b>	<b>80%</b>	<b>6,293,684</b>	<b>20%</b>	<b>31,902,615</b>

**Table 4.3.** Confirmed sources of co-financing

Sources of Co-financing	Name of Co-financier (source)	Type of Co-financing	Co-financing Amount (\$)
National government	INFOR	Cash	3,907,754
National government	INFOR	In-kind	8,297,487
National government	CONAF	Cash	1,631,320
National government	CONAF	In-kind	5,709,620
National government	CIREN	Cash	1,542,339
National government	CIREN	In-kind	489,951
National government	MMA	Cash	0
National government	MMA	In-kind	611,956
National government	SAF	In-kind	3,026,504
GEF Agency	FAO	Cash	67,000
GEF Agency	FAO	In-kind	325,000
<b>Total Co-financing</b>			<b>25,608,931</b>

### 4.3.2 GEF inputs

The requested GEF grant will be allocated to strengthening of the institutional framework and capacity development through: i) technical expertise for operation of the SIMEF Executive Secretariat (General Coordinator, four Heads of Programmes and Administrative Assistant); ii) travel expenses for implement and monitor project activities by the Executive Secretariat, Technical Advisory Committee and Regional Participation Committees; iii) international technical assistance to develop a protocol for data collection and monitoring of land use and land use changes; and iv) national and regional level training workshops for INFOR, CONAF and CIREN staff, Regional Committees, and data collection brigades.

Moreover, GEF resources will be used to support implementation of the SIMEF through: i) field brigades for collection of biophysical, biodiversity and socio-economic data; ii) consultants for the development of the SIMEF data model, data standardization protocol, webmapping system and data quality control; iii) establishment of the baselines for the pilot interventions; iv) studies on land use change (data collection, processing and development of SFM practices); tree biomass and shrub biomass; v) procurement of satellite images to support field data collection and studies; and vi) procurement of equipment to support the implementation of SIMEF (e.g. webmapping server, field equipment for brigades including datalogger, GPS, laser distance meter, vertex).

GEF resources will also be used to implement pilot interventions based on SIMEF information at national, regional and local levels. To this end, the project will: i) provide technical assistance to develop operational regulations for the Native Forest Law in regards to non-timber forest products, SFM/REDD+ incentives, biodiversity criteria for designation of conservation forests, and financing of technology transfer; ii) set up dialogue roundtables for the Native Forest and Forestry Promotion laws; iii) develop SFM practices and implement local SFM demonstrations; iv) organize and implement planning and awareness raising workshops to promote mainstreaming of SIMEF information in regional land use plans and

communal development plans; v) implement an outreach strategy to disseminate regional and communal plans, and SFM strategies; and vi) elaborate a carbon baseline for the development of an MRV system.

#### **4.3.3 Government inputs**

INFOR, CONAF, CIREN and MMA will provide cash contributions for collection, processing and analysis of biophysical, biodiversity and land use information using the protocols developed by the project.

INFOR, CONAF, CIREN, MMA and the Chilean Aerial Photogrammetric Service (SAF) will provide in-kind contributions addressing the: i) establishment and operation of the National Steering Committee, Executive Secretariat, Technical Advisory Committee, and Regional Participation Committees (including meetings, official travel, hiring of personnel, elaboration of annual work plans and preparation of progress reports); ii) review and adjustment of existing methodologies and protocols (carbon stocks, biodiversity, land use, socio-economic dynamics); and iii) capacity building of INFOR, CONAF and CIREN staff, data collection brigades and Regional Participation Committees (design and implementation of training workshops and courses, official travel, venues, trainers); iv) development of data model, data standardization protocol and webmapping system for the integrated information system; v) assessment of institutional data and capacities; vi) establishing the interoperability between the databases and information systems in the participating institutions; vii) provide satellite and its services in terms of high resolution imageries or forest monitoring; viii) preparation and dissemination of maps and reports to the target audiences; ix) design and implementation of an outreach strategy targeting different audiences; x) participating in dialogue roundtables on the Native Forest and Forestry Promotion Laws and elaborating regulations for the Native Forest Law; xi) signing of agreements with stakeholders in pilot regions and sites; xii) data collection at pilot site level, processing and analyzing results (carbon stocks, biodiversity, land use); xiii) organizing and implementing stakeholder training workshops; xiv) implementation of SFM demonstrations; xv) mainstreaming of SIMEF information in regional land use plans and communal development plans; and xvi) production of reports on emissions reductions/increases and MRV guidelines.

#### **4.3.4 FAO inputs**

FAO will contribute with USD 67 000 in cash cofinancing from its technical cooperation project (TCP/RLA/3404) on SFM good practices (see section 1.1.1.a under 3. *Information systems and products with relevance for planners and decision makers with influence on forest ecosystems at all levels*). FAO will also provide in-kind co-financing in terms of FAO staff providing technical support in national forest inventory and forest ecosystem monitoring including biodiversity and socioeconomic aspects and SFM.

#### **4.3.5 Other co-financiers inputs**

N/A

#### **4.3.6 Financial management of and reporting on GEF resources**

Financial management and reporting in relation to the GEF resources will be carried out in accordance with FAO's rules and procedures and as described in the Execution Agreement between FAO and INFOR as well as in accordance with the agreement between FAO and the GEF Trustee. In accordance with the project budget, FAO shall provide cash advances in US dollars up to the total of USD 6 293 684.

INFOR shall provide project execution services in accordance with its regulations, rules and procedures adjusted to FAO rules and regulations and GEF minimum fiduciary standards as established in the Execution Agreement to ensure that the project funds are properly administered and expended. INFOR shall maintain a project account for the funds received from FAO in accordance with accepted accounting standards.

##### **Financial statements and reporting**

All financial reporting shall be in US dollars, and any exchange differences accounted for within the GEF-approved US dollar project budget. Within 10 days of the end of each six months, i.e. on or before 10 July and 10 January, INFOR shall submit six-monthly statements of expenditure of GEF resources to the FAO Office in Chile (see format in Execution Agreement Annex 6.C). The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis so as to monitor project progress and to reconcile outstanding advances during the six months period. The financial statement shall contain information that forms the basis of a periodic financial review and its timely submission will be a prerequisite to the continued disbursements of funds to INFOR.

INFOR shall prepare annual financial reports on the use of the GEF resources to be submitted with the 2nd six-monthly Project Progress Report, showing amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments) as follows:

1. Details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in this Project Document (Appendix 3), as at 31 December each year.
2. A final statement of account in line with the project budget included in this Project Document (Appendix 3), reflecting actual final expenditures under the project, when all obligations have been liquidated.
3. An annual budget revision will be prepared for review and clearance of the FAO Representation in Chile, the LTO, and the GEF Coordination Unit. The budget revision will be posted in the FPMIS by the GEF Coordination Unit.

These financial reports are submitted by INFOR to the FAO Representation in Chile and reviewed and cleared by the FAO Representative, supported by the Project Task Manager, monitored by the LTO and with previous internal clearances from the FAO GEF Coordination Unit.

Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the Financial Procedures Agreement between FAO and the GEF Trustee and submitted by the FAO Finance Division (CSFE).

##### **Disbursements of Funds**

FAO shall transfer the amount of **USD 6 293 684**, of GEF funds, payable in instalments as outlined below, to INFOR to carry out the GEF financed project activities as described in this

Project Document. INFOR shall prepare and submit to FAO, together with the Annual Work Plan, a detailed budget to facilitate the predictability of the needed funds for the year. The first instalment of USD 190 000 (3 percent of the approved GEF amount) shall be advanced to INFOR within two weeks following signature of the Execution Agreement.

Subsequently, INFOR shall prepare and submit to FAO cash transfer requests (see format Execution agreement Annex 4.D) based on the updated AWP/B including the budget for the following six month. This cash transfer request shall be submitted to FAO together with the six-monthly statements of expenditures of GEF resources for the previous six months period. The second disbursement of funds will also be subject to submission by INFOR to FAO a short completion report on all actions agreed in the mitigation plan of fiduciary risks (as referred to in section 3.2.2 above). The second and subsequent instalments shall be advanced to INFOR within two weeks upon submission of a satisfactory financial statements of expenditures report, project progress reports (see section 6.4 below), and an updated AWP/B including the budget for the following six month. The FAO Representative in Chile supported by the FAO Project Task Manager should certify that reporting requirements under the terms of the Execution Agreement have been met and that project progress reports for the activities completed have been submitted to and accepted by FAO as showing satisfactory management and use of GEF resources. Reports should be submitted to the LTO/LTU for review and the GEF Coordination Unit for review and clearance before funds transfers. All approved reports shall be posted on the FPMIS.

#### **Responsibility for Cost Overruns**

FAO will make available to the Executing Partner a financial contribution in the amount of **USD 6 293 684** (six million two hundred and ninety three thousand six hundred and eighty four United States Dollars). INFOR shall utilize the GEF project funds in strict compliance with the project document. INFOR shall be authorized to make variations not exceeding 20 percent on any total output budget line or any cost category line of the project budget provided that the total allocated for the specific budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework Appendix 1. Any variations exceeding 20 percent on any total output budget line or any cost category line, that may be necessary for the proper and successful implementation of the project, shall be subject to prior consultations with and approval by FAO. In such a case, a revision to the FAO-GEF budget in the project document shall be prepared by INFOR and approved by the FAO Representative in Chile, the LTO and the GEF coordination Unit. Cost overruns shall be the sole responsibility of INFOR.

#### **Audit**

INFOR will ensure external audit, consistent with recognized international auditing standards, of its project account and records in relation to activities and expenditures related to the project. The audit reports will be provided to FAO and may be shared with the GEF Trustee if this is requested. INFOR shall submit to FAO **an annual externally audited financial statement of the GEF project account** within three months following the completion of each annual accounting period during the project.

#### **4.4 PROCUREMENT**

INFOR will procure the equipment and services provided for in the detailed budget Appendix 3 and AWP/B following its own rules and regulations in compliance with generally accepted international standards for public sector procurement as detailed in the Execution

Agreement. INFOR will ensure that its procurement rules and procedures and their implementation ensure that the procurement process is transparent and competitive

Before the commencement of procurement, INFOR shall complete the project procurement plan to be reviewed at the project inception and cleared by the FAO Representative in Chile. The procurement plan shall be updated by INFOR every six months and submitted to and cleared by the FAO Representative in Chile with the six-monthly financial statement of expenditure report, Project Progress Reports, and Cash Transfer Requests for the next instalment of funds. FAO supervision of contracting and procurement processes will be executed as follows<sup>24</sup>:

- a. All individual consultants contracts for an amount > USD 15 000 will be subject to FAO participation in selection panel and prior clearance of contracting process, Terms of Reference (TORs) and Curriculum Vitae (CVs).
- b. All consultant firms/NGOs contracts will be subject to FAO prior clearance of contracting process, TOR and technical proposals.
- c. Except for the procurement of satellite images there will be no single procurement of goods (non-expendable procurement) for an amount > USD 100 000. All procurement of goods will be subject to FAO prior clearance of bidding process, material and offers (single procurement amount > USD 50 000) or technical specifications and price quotation comparison (single procurement amount < USD 50 000).
- d. All documentation related to non-expendable procurement and procurement of non-consultancy services in relation to training and workshops events shall be submitted to FAO for post review together with the six-monthly financial statements and expenditure reports.

## **4.5 MONITORING AND REPORTING**

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the Project Results Framework (Appendix 1 and described in section 2.3 and 2.4). The project Monitoring and Evaluation Plan has been budgeted at USD 284 000 (see Table 4.4). Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines. The monitoring and evaluation system will also facilitate learning and replication of project results and lessons in relation to forest ecosystem monitoring, mainstreaming of forest monitoring information in policy formulation and land-use planning processes, and fro improved SFM and REDD+.

### **4.5.1 Oversight and monitoring responsibilities**

The monitoring and evaluation roles and responsibilities specifically described in the Monitoring and Evaluation Plan (see below) will be undertaken through: (i) day-to-day monitoring and project progress supervision missions (ES/Coordinator and NPD); (ii) technical monitoring of indicators to measure the achievement of outputs and outcomes

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<sup>24</sup> These procedures for supervision of contracting and procurement processes will be revised after the first project year where some of the prior clearances by FAO of contracts and procurements may not be required depending on the performance of INFOR in managing contracting and procurement processes.



(ES/Coordinator, ES staff and project partners); (iii) specific monitoring plans for the use of the SIMEF generated information (component 3) (ES/Coordinator, ES staff, and stakeholders participating in pilots); (iv) mid-term and final evaluations (independent consultants and FAO Evaluation Office); and (v) continual oversight, monitoring and supervision missions (FAO).

At the initiation of project implementation, the ES/Coordinator and Heads of Programmes will set up a project progress monitoring system. Participatory mechanisms and methodologies for systematic data collection and recording will be developed to support outcome and output indicator monitoring and evaluation. During the inception workshop (see section 4.5.3 below), M&E related tasks to be addressed will include: (i) presentation and clarification (if needed) of the Project Results Framework with all project stakeholders; (ii) review of the M&E indicators and their baseline; (iii) drafting the required clauses to include in consultants' contracts to ensure they complete their M&E reporting functions (if relevant); and (iv) clarification of the respective M&E tasks among the Project different stakeholders. One of the main outputs of the workshop will be a detailed monitoring plan agreed to by all stakeholders based on the monitoring and evaluation plan summary presented in section 4.5.4 below.

The day-to-day monitoring of the Project implementation will be the responsibility of the ES/Coordinator and will be driven by the preparation and implementation of an AWP/B followed up through six-monthly PPRs. The preparation of the AWP/B and six-monthly PPRs will represent the product of a unified planning process between main project stakeholders. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of these output targets. Specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with all stakeholders and coordinated through the NPD, ES and RPCs and facilitated through project planning and progress review workshops. These contributions will be consolidated by the ES/Coordinator in the AWP/B draft and the PPRs. The AWP/B and the PPRs will be submitted to the National SIMEF Steering Committee for approval (AWP/B) and revision (PPR) and to FAO for approval. The AWP/B will be developed in a manner consistent with the Project Results Framework to ensure adequate fulfilment and monitoring of project outputs and outcomes.

Following the approval of the Project, the PY1 AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with the annual reporting calendar. In subsequent years, the AWP/Bs will follow an annual preparation and reporting cycle as specified in section 4.5.3 below.

## **4.5.2 Indicators and information sources**

To monitor project outputs and outcomes including contributions to global environmental benefits, specific indicators have been established in the Project Results Framework (see Appendix 1). The Project Results Framework indicators and means of verification will be applied to monitor both project performance and impact. Following FAO monitoring procedures and progress reporting formats, data collected will be sufficiently detailed to be able to track specific outputs and outcomes, and flag project risks early on. Output target indicators will be monitored on a six-monthly basis, and outcome target indicators will be monitored on an annual basis, if possible, or as part of the mid-term and final evaluations.

The project output and outcome indicators have been designed to monitor impacts on-the-ground as well as progress in building and consolidating capacities for integrated monitoring

and assessing of carbon stocks and biodiversity in Chile's forest ecosystems as well as socio economic drivers for forest degradation or conservation in support of the National Greenhouse Gases Inventory and the development of policies, regulations and SFM practices that mainstream REDD+ and biodiversity conservation in forest ecosystems.

Capacity building processes indicators will monitor:

Outcome 1.1: the effectiveness of interinstitutional coordination and management structure as the permanent basis for the implementation of the SIMEF

Outcome 1.2: Number of protocols for data collection strengthened; number of personnel trained and acquired technical capacities for the implementation of the protocols

Outcome 2.1: Carbon stocks inventoried and surface area of habitats for endemic biodiversity monitored.

Outcome 2.2: the operational efficiency of the Information system on carbon stocks and flows, biodiversity of forest ecosystems and land use changes and socioeconomic drivers as well as the information products provided and their use by decision makers and other stakeholders.

On-the-ground impact indicators will monitor:

Outcome 3.1: percentage increase in core areas and areas of patches in target regions for reduction of forest fragmentation; percentage of reduction in forest degradation rate; surface area of forests under rehabilitation; percentage of increase in carbon sequestration; stabilization of populations of key threatened species.

The main information sources to support the M&E plan include: i) SIMEF database; ii) INFOR, CONAF, CIREN, MMA; iii) participatory workshops with stakeholders and beneficiaries to review project progress; iv) on-the-ground monitoring of forest ecosystems (carbon stocks and flows and biodiversity); v) consultants' reports; vi) training reports; vii) mid-term review and final evaluation; viii) financial reports and budget revisions; ix) Project Implementation Reviews prepared by the FAO LTO supported by the FAO Representation in Chile; and x) FAO supervision mission reports.

#### **4.5.3 Reporting schedule**

Specific reports that will be prepared under the monitoring and evaluation program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) Annual Project Implementation Review (PIR); (v) Technical reports; (vi) Co-financing reports; and (vii) Terminal Report. In addition, assessment of the GEF BD, SFM and LD Tracking Tools (TTs) against the baseline (completed during project preparation) will be required at mid-term and final project evaluation.

**Project Inception Report.** After FAO approval of the project and signature of the Execution Agreement an inception workshop will be held. Immediately after the workshop, the ES/Coordinator will prepare a project inception report in consultation with the FAO PTM and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed

project monitoring plan based on the monitoring and evaluation plan summary presented in section 4.5.4 below. The draft inception report will be circulated to FAO and the National SIMEF Steering Committee for review and comments before its finalization, no later than three months after project start-up. The report will be cleared by the FAO BH, LTO, LTU and the FAO GEF Coordination Unit, and uploaded in FPMIS by the LTO.

**Annual Work Plan and Budget (AWP/B).** The INFOR ES/Coordinator, under the supervision of the NPD with the inputs of the CRP's, will submit to the FAO Representation in Chile a draft AWP/B no later than 20 December. The AWP/B should include detailed activities to be implemented by project outputs and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The FAO BH will circulate the draft AWP/B to the FAO interdisciplinary Project Task Force and the PTM will consolidate and submit the FAO comments to the ES who will incorporate the comments before submission of the AWP/B to the National SIMEF Steering Committee for approval and to the FAO for final no-objection and upload in FPMIS by the GEF Coordination Unit no later than 31 January. (See AWP/B format in Execution Agreement Annex 4.B).

**Project Progress Reports (PPR).** The INFOR ES/Coordinator, under the supervision of the NPD, will prepare six-monthly PPRs and submit them to the FAO Representation in Chile no later than 10 July (covering the period January to June), and 10 January (covering the period July to December). The first semester six months report should be accompanied by the updated AWP/B, if needed, for review and no-objection by FAO. The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation of the project and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework (Appendix 1). The FAO PTM will review the progress reports and collect and consolidate eventual FAO comments from the LTO, LTU, the GEF Coordination Unit, and the Budget Holder and provide these comments to the INFOR ES. When comments have been duly incorporated the PPRs are shared with the National SIMEF Steering Committee and the LTO will give final approval and the PPR is uploaded in FPMIS by the BH. (See PPR format in Execution Agreement Annex 4.A).

**Annual Project Implementation Review (PIR).** The LTO supported by the LTU and the FAO Project Task Manager and with inputs from INFOR ES/Coordinator, will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the GEF Coordination Unit for review and approval no later than 20 July. The GEF Coordination Unit will upload the final PIR on FAO FPMIS and submit it to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The FAO office in Chile will send the final PIR to the GEF Operational Focal Point of the Bolivian Government for information. The GEF Coordination Unit will provide the updated format when the first PIR is due.

**Technical Reports.** Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by INFOR ES and submitted to the FAO Representation in Chile who will share it with the LTO and LTU for review and clearance and with the GEF Coordination Unit for information and eventual comments, prior to finalization and publication. Copies of the technical reports will be distributed to the NSC and other project partners as appropriate. The final reports will be posted on the FAO FPMIS by the BH.

**Co-financing Reports.** The ES/Coordinator will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project cofinanciers and eventual other new partners not foreseen in the Project Document. INFOR ES/Coordinator will submit the report to the FAO Representation in Chile (which will add the FAO co-financing) no later than 10 July covering the period July (the previous year) through June (current year). (See co-financing report format in Execution Agreement Annex 4.E).

**GEF Tracking Tools.** Following the GEF policies and procedures, the tracking tools for the BD, SFM/REDD+ and Climate Change focal areas will be submitted to the GEF Secretariat at three moments: (i) with the project document at CEO endorsement; (ii) at the project’s mid-term evaluation; and (iii) with the project’s terminal evaluation.

**Terminal Report.** Within two months before the end date of the Execution Agreement ES/Coordinator will submit to the National Steering Committee and the FAO Representation in Chile a draft Terminal Report. The main purpose of the final report is to give guidance to authorities (ministerial or senior government level) on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. The terminal report is accordingly a concise account of the main **products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for ensuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application to integrated monitoring and assessment of forest ecosystems in the context of the development priorities at national and regional levels, as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 4.6 below. A final project review meeting should be held to discuss the draft terminal report with the National Steering Committee before it is finalized by the ES/Coordinator and approved by the FAO BH, LTO, LTU and the FAO-GEF Coordination Unit. (See instructions for Terminal Report in Execution Agreement Annex 4.F).

**4.5.4 Monitoring and evaluation plan summary**

Table 4.4 below provides a summary of the main monitoring and evaluation reports, responsible parties and timeframe:

**Table 4.4:** Summary of the main monitoring and evaluation activities

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Inception Workshop	NPD, ES/Coordinator, PTM (supported by LTO, BH, and the FAO GEF Coordination Unit)	Within two months of project start up	USD 10 000
Project Inception Report	NPD, ES/Coordinator, and PTM, cleared by LTO, BH, and the FAO GEF Coordination Unit	Immediately after the workshop	-

<b>Type of M&amp;E Activity</b>	<b>Responsible Parties</b>	<b>Time-frame</b>	<b>Budget</b>
Monitoring of project achievement of outcomes and outputs (annual project review workshops)	ES/Coordinator, ES/Heads of Programmes	Continuously	USD 116 000 (7 months of the Executive Coordinator's time, 2 months of each of the heads of programme's time, 32 000 in travel costs and the cost of 4 annual project review workshops)
Supervision visits and rating of progress in PPRs and PIRs	NPD, ES/Coordinator and FAO (PTM, BH, LTO, LTU and FAO GEF Coordination Unit)	Annual or as required	FAO visits will be financed through GEF agency fee. Visits of the ES/Coordinator and staff will be financed by the project travel budget
Project Progress Reports (PPR)	NPD, ES/Coordinator	Six-monthly	USD 10 000 (2 months of ES/Coordinator's time)
Project Implementation Review report (PIR)	FAO (PTM and LTO) supported by the LTU and the NPD and ES/Coordinator. PIRs cleared and submitted by the FAO GEF Coordination Unit to the GEF Secretariat	Annual	Financed through GEF agency fee
Co-financing Reports	NPD, and ES/Coordinator with inputs from other co-financiers	Annual	USD 3 000 (2 months of the ES administrative assistant's time)
Technical reports	NPD, ES/Coordinator, and FAO (PTM LTO/LTU)	As appropriate	-
External audits	Independent external auditor	Annual	USD 60,000
Mid-term Evaluation	External Consultant, FAO Office for Evaluation in consultation with the project team including the GEF Coordination Unit and other partners	At mid-point of project implementation	USD 40,000 for independent consultants and associated costs. In addition the agency fee will pay for expenditures of FAO staff time and travel

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Final evaluation	External Consultant, FAO independent Evaluation Office in consultation with the project team including the FAO GEF Coordination Unit, and other partners	At the end of project implementation	USD 40,000 for external, independent consultants and associated costs. In addition the agency fee will pay for expenditures of FAO staff time and travel
Terminal Report	NPD, and ES/Coordinator, PTM, BH, LTO, TSCR report Unit	At least two months before the end date of the Execution Agreement	USD 5 000 (1 month of the ES Coordinator's time)
<b>Total Budget</b>			USD 284 000

#### 4.6 PROVISION FOR EVALUATIONS

An independent Mid-Term Evaluation (MTE) will be undertaken at the end of the first 24 months of project implementation to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. Findings and recommendations of this review will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO (the Office of Evaluation) will arrange for the MTE in consultation with project management. The evaluation will, *inter alia*:

- a) Review the effectiveness, efficiency and timeliness of project implementation;
- b) Analyze effectiveness of partnership arrangements;
- c) Identify issues requiring decisions and remedial actions;
- d) Propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and
- e) Describe the technical achievements and lessons learned derived from project design, implementation and management.

An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting. The FE will aim to identify the project impacts, sustainability of project results and the degree of achievement of long-term results. The FE will also have the purpose of indicating future actions needed to sustain project results, expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities and institutions with responsibilities for forest policies, regulations and management to assure continuity of the processes initiated by the Project.

Critical elements that both the MTR and FE will pay special attention to are:

- 1) Gender balance among project beneficiaries including beneficiaries of capacity building activities and involvement of men as well as women in forest ecosystem monitoring activities, the RPCs and in project pilots.

- 2) The effectiveness of the interinstitutional coordination among the member institutions of the national SIMEF Steering Committee
- 3) The user-friendliness of SIMEF generated information products and the extent to which these are used to improve forest policies, regulations and SFM and REDD+ practices
- 4) The level of ownership of the SIMEF beyond the INFOR team including at regional and local level (e.g. RPC ownership and directive boards of model forests)

The FAO Project Task Manager will prepare the draft Terms of Reference (*TOR*) for the midterm and final evaluations and consult with and incorporate comments from NPD, ES/Coordinator, the FAO BH, LTU/LTO, and the FAO-GEF Coordination Unit. Subsequently the TORs will be sent to the FAO Office of Evaluation for finalization, in accordance with FAO evaluation procedures and taking into consideration evolving guidance from the GEF Evaluation Office. The TORs and the reports will be discussed with and commented upon by the project partners.

#### **4.7 COMMUNICATION AND VISIBILITY**

A number of project activities will have a high visibility and will include the mechanisms to ensure that communications in support of the project's messages are effective. Capacity development activities under Component 1 will have an important visibility at the level of authorities and decision makers at regional level given that the Regional Participation Committees will be made up of representatives from central government institutions in each region and the regional and local governments. Likewise with civil society stakeholders (NGOs, small farmers' and indigenous peoples' organizations and private sector associations) that will also participate in such committees. The project will interact with these stakeholders in project planning, implementation and monitoring processes throughout the project's lifetime. The workshops and courses foreseen under this component will support training and awareness raising of the stakeholders, and socialization of information and the results of the activities undertaken. The protocols for data collection to be developed under the component will take into account the interest and needs of different user groups including the relevance of the information for the decision makers at local, regional and national level.

Component 2 will also contribute to a high visibility of the project given that it will support the preparation and dissemination of thematic maps on forest ecosystems, species distribution, carbon stock and land use changes supported by a geo-database and a web-based information system giving user groups easy access to the generated data and information. Furthermore, thematic reports oriented to different users will be published on forest carbon stocks and flows, forest ecosystem biodiversity status, dynamics in land-use changes impacting forest ecosystems, or socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+.

SIMEF user groups comprise diverse stakeholders including national, regional and local decision makers on forest management and land-use planning, the private sector dependent or impacting on forest ecosystems, and universities and NGOs working on SFM and REDD+ issues. The project will take into account the characteristics, interests and needs of these target audiences in the development of information and communication material. Special attention will be given to the user friendliness of the presented data and capacity development of interest groups enabling them to analyze and interpret the information generated by

SIMEF. This will also include making public the methodologies applied in data collection and analysis and the calculation of indicators.

Component 3 will specifically address the development of an outreach strategy and a web platform with the objective of disseminating SIMEF information and products (e.g. thematic maps and reports) among decision makers and key stakeholders seeking to promote informed decision making and guide policy design and implementation in issues such as defining the main degradation drivers and strategies to reduce their impact, establishing differentiated incentives for SFM in the different Macro Zones, and incentives for biodiversity conservation. The outreach strategy will take into account gender equity through promoting the participation of women in the project's training and information dissemination activities, and developing specific information contents and materials targeting women of different sectors with interests in the SIMEF (e.g. business-women, women working in NGOs and CSOs, academia and public institutions). In addition the implementation of the pilots will contribute to visibility at different levels. The national level pilot will provide visibility with decision makers and stakeholders related with the implementation of the Native Forest and Forestry Promotion laws. The regional level pilot will provide visibility with authorities, public institutions and civil societies of the O'Higgins and Los Rios regions. The local SFM pilots in the Panguipulli and Cachapoal Model Forests will also contribute to visibility given that they will promote the participation of local stakeholders.

Furthermore, the project will ensure the mechanisms for maximum dissemination of the documents produced by the project, and particularly the Terminal Report, technical reports and the mid-term and final evaluation reports.



## **SECTION 5 – SUSTAINABILITY OF RESULTS**

### **5.1 SOCIAL SUSTAINABILITY**

*Local socioeconomic benefits link to GEB including food security, gender equality and mainstreaming, and indigenous people*

The project intends to provide accurate information for decision makers at national, local, and municipality level for appropriate natural resource management. Information to be collected are based on the NFI protocols which include records on the traditional use of trees, minor plants and vegetation, soil status, non-timber forests products, recognition and identification of species, coarse and fine wood debris and evidence of human pressure, habitat stress among others. The project will not directly address income generation activities impacting on the socio-economic condition of people, but because of the interaction between knowledge and appropriate practices on natural resources, it will impact on the sustainability of forests and forest lands. The project will not result in resettlement or affect adversely any community.

Information and analysis of data is intended to be used by several interest groups such as governmental agencies, private sector organizations, investors, conservation agencies, social groups for natural resource planning and territorial management, academic institutions, local community organizations, indigenous based organizations, small and large landowners or similar. The project therefore can contribute to increase job opportunities, income, and foreign exchange leading to reduced poverty. These social economic benefits can be further enhanced by an increase in forest land use as a result of an adjusted policy environment that favours sustainable forest based businesses opportunities throughout the production value chain.

The project will assess through its socioeconomic protocol, the role of men and women in forest resources management according to their age and social condition. Data analysis can provide information related to the use of resources and description of users, labour needs, roles and responsibilities and vulnerabilities related to climate change and its consequences with emphasis in vulnerability and chances for adaptation.

Project activities will not directly affect any stakeholder. In addition, all efforts are being made to avoid any adverse consequences to those who may be contacted during the field work for data collection. Besides assurances of anonymity, the methodology will avoid misperception, imposing unacceptable opportunity costs, and other eventual adverse consequences of the direct contact with surveyors.

### **5.2 ENVIRONMENTAL SUSTAINABILITY**

Environmental sustainability is incorporated in the design given that the Project is devoted to obtain, process, store and report information on the integrity of forest ecosystems by monitoring variables on biophysical, biodiversity, carbon and sustainable forest management as key elements depicting forest ecosystem state and condition through time.

Project activities will not imply any physical stress over the ecosystem; it will actually favour the improvement of policies related to SFM, land use and cover, biodiversity and climate change, hence environmental impact is expected to be positive.

### **5.3 FINANCIAL AND ECONOMIC SUSTAINABILITY**

The key element to ensure the financial and economic sustainability of the SIMEF is building on the already existent programs within MINAGRI such as the National Forest Inventory (INFOR), the National Vegetation Cadastre (CONAF) and the Spatial Data Infrastructure (CIREN), which are programs regularly funded by MINAGRI.

The SIMEF bodies (Executive Secretariat, Technical Advisory Committee and Regional Participation Committees) will undertake during the last project year an evaluation of their role and work for the following 5 years after end of project to ensure the sustainability of the SIMEF and to secure the corresponding budget for its operation.

### **5.4 SUSTAINABILITY OF CAPACITIES DEVELOPED**

The project will develop an inter-institutional coordination mechanism that will build on the strengthening of the already existent institutional coordination and collaboration framework of MINAGRI (INFOR, CONAF, CIREN), MMA, SUBDERE, regional and local governments and key stakeholders. Building on this existing framework will ensure that the information generated by the SIMEF is the result of user needs and demands therefore contributing to the sustainability of the project outcomes.

The project will provide technical assistance for the development of methodological tools and protocols for data collection, analysis and construction of indicators related to the monitoring and assessment of forest ecosystems. Capacity development will also involve on-the-job and formal training for technical staff, decision-makers, and local, national interest groups. The capacity building of the different stakeholders and human resources at national, regional and local level will ensure their active participation in the SIMEF after the end of the project as well as supporting the use of the information generated by the SIMEF by the various stakeholders and decision-makers for improved SFM, REDD+ and conservation of biodiversity in forest ecosystems.

### **5.5 APPROPRIATENESS OF TECHNOLOGY INTRODUCED**

The project will apply remote sensing, data collection and data management technologies. These technologies are suitable to the project's requirements. Remote sensing will be based in well-established and proven technology strongly supported by scientific articles. Data collection methodologies will be based on sampling techniques that are extensively documented, well known and credible. The data management technologies will use a flexible approach to manage data and will be strongly based on user demand and needs, therefore the data model design as well as the software and hardware are designed to secure data dissemination.

## 5.6 REPLICABILITY AND SCALING UP

The project will implement several pilot interventions that have a high potential for replication. One of the pilots will address the use of SIMEF information to strengthen the national legal framework by developing operational regulations for the Native Forest Law that will be applicable at national level. A second pilot will promote the mainstreaming of SIMEF information on valuation and conservation of forest carbon stocks and biodiversity in the RLUPs of the O'Higgins and Los Rios regions, and the PLADECOS of the communes of Panguipulli (Los Rios) and Las Cabras, Coltauco and Doñihue (O'Higgins). These mainstreaming experiences will be upscaled to other regions through SUBDERE, the RPCs and the PRODESAL. A third pilot will involve the implementation of local level participatory SFM practices that conserve forest ecosystem services (carbon stocks and habitats for globally significant species) in the Panguipulli and Cachapoal Model Forests. This pilot will contribute to the development of SFM practices that will be disseminated to promote incorporation of these practices in the forest management plans increasing the surface area of sustainably managed native forests. The fourth pilot will generate a carbon baseline for the development of an MRV System for trading of forestry carbon credits that CONAF will incorporate in the "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile" and replicate to other areas of the country through the platform.

The FAO Representation in Chile/Regional Office for Latin America and the Caribbean (FAO RLC) will disseminate and share the lessons learned with other countries in the region that are also working in forest ecosystem monitoring.

## APPENDICES

## APPENDIX 1: RESULTS MATRIX

### Project outcomes and impacts:

Objective/Impact	Baseline	Outcome indicators	Assumptions
<p><u>Global Environmental Objective:</u></p> <p>To develop, and implement an Integrated Forest Monitoring and Assessment System on carbon stocks and biodiversity in Forest Ecosystems (SIMEF for its Spanish abbreviation) supporting the National Greenhouse Gases Inventory and the development of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems</p> <p><u>Project Development Objective:</u><sup>25</sup></p> <p>To support government institutions, the private sector and CSO at all levels with improved data and information and its application for better decision making on forest policies, land use planning and regulations as well as on resources management by local communities to guarantee their sustainable use for improving livelihood conditions, providing them with an efficient structure securing bottom – up communication on a continued improvement of the SIMEF to serve their needs.</p>	<p><u>Component 1:</u></p> <p><b>Outcome 1.1:</b> No current interinstitutional coordination and work/management structure for implementation of SIMEF</p> <p><b>Outcome 1.2:</b> a) Protocols for collection and analysis of data for monitoring and evaluation of forest ecosystems exist but some need to be supplemented and/or validated and standardized b) Expansion of the NFI to SIMEF will require more personnel trained in data collection protocols, analysis and development of SIMEF indicators and products)</p> <p><u>Component 2:</u></p> <p><b>Outcome 2.1:</b></p> <p>a) Carbon stocks of 5.7 Gt CO<sub>2</sub>eq estimated for 10 million ha covering total above-ground</p>	<p><u>Component 1:</u></p> <p><b>Outcome 1.1:</b> Interinstitutional coordination and management structure functioning as the permanent basis for operation of the SIMEF. <b>Target:</b> Steering Committee, Executive Secretariat, Technical Advisory Committee and 15 Regional Participation Committees operating and effectively fulfilling their management, coordination and implementation roles in accordance with the Annual Work Plan and promoting the use of SIMEF</p> <p><b>Outcome 1.2:</b> Increased technical capacities and knowledge at national and regional levels for implementation of the SIMEF. <b>Targets:</b> a) 4 data collection protocols supplemented, validated and standardized facilitating the collection and analysis of high quality data. b) 281 (at least 40% women) staffs of INFOR, CONAF and CIREN (120), RPC members (30) and data collection brigades´ members (136) trained and achieving a score of at least 75% in the final training assessments.</p> <p><u>Component 2:</u></p> <p><b>Outcome 2.1:</b> The National Forest Inventory expanded to a geospatial model populated with data on 13,6 million ha of native forest ecosystems covering the whole country and including an additional 3,5 million ha of native forest not included in the previous NFIs. <b>Targets:</b> a) Carbon stocks of 2 GtCO<sub>2</sub>eq in an additional 3,5 million ha inventoried (for all pools)</p>	<p><u>Component 1:</u></p> <p>Political will of relevant institutions and stakeholders (INFOR, CONAF, MMA, MINAGRI, SUBDERE, regional and local governments, and civil society organizations) to support, coordinate and participate in the implementation of the SIMEF</p> <p><u>Component 2:</u></p> <p>Interest groups (public institutions, forest landowners, NGOs, civil society organizations) are aware of the significance of the SIMEF and are engaged in activities to implement the SIMEF (e.g. forest landowners authorize data collection in their properties; public institutions make information available;</p>

<sup>25</sup>In line with FAO SOs

	<p>tree biomass b) No current forest biodiversity monitoring</p> <p><b>Outcome 2.2:</b> Cadastre and NFI but no integrated information system</p>	<p>b) 13,6 million ha of habitats for Chile's endemic biodiversity including araucaria forests, temperate rainforests, alerce forests and Mediterranean forests monitored.</p> <p><b>Outcome 2.2:</b> Information system on carbon stocks and flows, biodiversity of forest ecosystems and land use changes and socioeconomic drivers operational and providing information to interested users and stakeholders <b>Target:</b> One Integrated National Forest Monitoring and Assessment System (SIMEF) functioning at national level and providing updated and compatible information on carbon stocks and flows, biodiversity of forest ecosystems, inter-linkages between socioeconomic drivers and land use changes, and forest fragmentation and degradation rates.</p>	<p>participation of stakeholders in validation of methodologies).</p> <p>High quality is maintained throughout all steps in the information generation process from the field data collection, the database upgrading, the data processing including the calculation of key indicators, and the results dissemination.</p>
	<p><b>Component 3:</b></p> <p><b>Outcome 3.1</b></p> <p>a) Fragmentation indices: Core areas in O'Higgins and Los Rios are 183 and 860,338 ha respectively and average areas of patches are 104 and 227 ha respectively) b) Forest degradation rate is estimated in 77,000 ha with a 45% margin of error c) Estimated 500 ha under rehabilitation) d) Forest degradation rate is estimated in 77,000 ha with a 45% margin of error</p> <p>e) Information on threatened species is poor. Baseline information for the selected species will be developed during project implementation</p>	<p><b>Component 3:</b></p> <p><b>Outcome 3.1:</b> Institutions with decision making power over the national legal and regulatory framework and two regional governments (covering 45 local governments) use the information produced by SIMEF to mainstream biodiversity and carbon stock conservation and REDD+ considerations in land use planning and sustainable forest management <b>Targets:</b> a) 10% increase in core areas and 10% increase in average areas of patches in the O'Higgins and Los Rios Regions 5 years after end of Project (EOP). b) Forest degradation rate reduced by 20% over the baseline with a 15% margin of error by EOP c) 4,300 ha of degraded forests under rehabilitation by EOP and 100,000 ha under rehabilitation 20 years after EOP d) 40.6x10<sup>6</sup> t CO<sub>2</sub>eq in avoided emissions from forest degradation and 13.5x10<sup>6</sup> t CO<sub>2</sub>eq sequestered by forest rehabilitation resulting in a net carbon balance of -54.2x10<sup>6</sup> t CO<sub>2</sub>eq (38% margin) e) Populations of key threatened tree species stabilized through passive restoration with: avellanita (<i>Avellanitabustillosii</i>) southern belloto (<i>Beilschmiedia berteriana</i>) northern belloto (<i>Beilschmiedia miersii</i>)</p>	<p><b>Component 3:</b></p> <p>National, regional and local level governments and stakeholders are aware of the benefits of the SIMEF and make use of the information generated to improve development policies, regulations and plans, and implement measures for conservation of forest ecosystem services and biodiversity.</p>

## Project outputs and outcomes:

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Component 1:</b> Development of institutional coordination framework and capacities for the implementation of the SIMEF								
<b>Outcome 1.1</b> Interinstitutional coordination and management structure functioning as the permanent basis for operation of the SIMEF	Currently no interinstitutional and management/work structure for implementation of the SIMEF	One Steering Committee, one Executive Secretariat, one Technical Advisory Committee, and 15 Regional Participation Committees operating and effectively fulfilling their management, coordination and implementation roles in accordance with the SIMEF Annual Work Plan (AWP) and promoting the use of SIMEF	Each established committee fulfils at least 90% of their responsibilities assigned and agreed in the SIMEF AWP	Each established committee fulfils at least 90% of their responsibilities assigned and agreed in the SIMEF AWP	Each established committee fulfils at least 90% of their responsibilities assigned and agreed in the SIMEF AWP	Each established committee fulfils at least 90% of their responsibilities assigned and agreed in the SIMEF AWP and has secured financing to sustain their work after the end of the GEF project	Minutes of meetings, inputs, guidance and recommendations provided to the SIMEF implementation process  Project mid-term and final evaluations	SIMEF Executive Secretariat (ES/SIMEF)
<b>Output 1.1.1:</b> National SIMEF Steering Committee(NSC) established and functioning with the participation of the sectoral government institutions with competencies in forest ecosystem matters (Permanent members: CONAF, CIREN, INFOR, MINAGRI, MMA, SUBDERE and advisory members (invited on a case by case basis) and FAO (during the life of the project).	No SIMEF Steering Committee	One Steering Committee (NSC) operating with: a) Framework agreement establishing its responsibilities and procedures b) At least 2 annual meetings with at least 80% attendance c) Short and mid-term work plan d) SIMEF AWP approved and bi-annual progress reports on implementation of the SIMEF AWP reviewed	a) Framework agreement between CONAF, CIREN, INFOR, MINAGRI, MMA and SUBDERE establishing the SC its responsibilities and procedures b) 2 meetings with > 80% attendance c) Short and mid-term work plan agreed d) AWP approved and 2 progress reports reviewed	b) 2 meetings with > 80% attendance c) Progress in AWP implementation monitored d) AWP approved and 2 progress reports reviewed	b) 2 meetings with > 80% attendance c) Progress in AWP implementation monitored d) AWP approved and 2 progress reports reviewed	b) 2 meetings with > 80% attendance d) c) Progress in work plan implementation reviewed and updated for the next 5-10 years d) AWP approved and 2 progress reports reviewed	Framework agreement  Operational procedures  Minutes of meetings  Work Plan  Progress Reports (in FAO/GEF Project Progress Report format)	ES/SIMEF  SC Chairperson

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Output 1.1.2:</b> SIMEF Executive Secretariat (ES) established and proposing and effectively implementing the SIMEF Annual Work Plans	No SIMEF Executive Secretariat	One SIMEF Executive Secretariat (ES) operating and achieving at least 85% progress in annual activities and targets established in the AWP	ES established with a General Coordinator, 4 Heads of Programmes (Inventory, Regional Participation Committee Facilitator, Training and Outreach) and one Administrative Assistant.  AWP submitted to the SC and approved  2 bi-annual progress reports submitted to the SC showing >85% compliance with the AWP	AWP submitted to the SC and approved  2 bi-annual progress reports submitted to the SC showing >85% compliance with the AWP	AWP submitted to the SC and approved  2 bi-annual progress reports submitted to the SC showing >85% compliance with the AWP	AWP submitted to the SC and approved  2 bi-annual progress reports submitted to the SC showing >85% compliance with the AWP  Role and work of the ES to sustain the SIMEF in the next 5 years evaluated and the corresponding Budget secured	AWP  Progress reports on implementation of the SIMEF (FAO/GEF PPR format)	ES Coordinator (ESC/SIMEF) with inputs of the Heads of Programmes and the Regional Participation Committees



Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Output 1.1.3:</b> Technical Advisory Committee (TAC) <sup>26</sup> established and functioning, ensuring a high technical quality of the SIMEF and supporting its implementation and utilization	Currently no Technical Advisory Committee	One Technical Advisory Committee (TAC) established and functioning with at least 1 annual meeting and experts representing 4 Macro Zones (MZ) issuing recommendations on: a) Methodologies and protocols for data collection and processing and development of SIMEF indicators and products b) Access to SIMEF data and products, and training of users to ensure utilization	1 TAC established and functioning with at least 1 annual meeting and experts representing 4 MZ issuing recommendations	1 TAC functioning with at least 1 annual meeting and issuing recommendations	1 TAC functioning with at least 1 annual meeting and issuing recommendations	1 TAC functioning with at least 1 annual meeting and issuing recommendations  Role and work of the TAC to sustain the SIMEF for the next 5 years evaluated and the corresponding budget secured	Minutes of meetings  Thematic reports with recommendations and inputs  PPR	TAC Secretary  ESC/SIMEF

<sup>26</sup>Made up of renowned scientists and experts within their respective Macro Zone. The ES in consultation with the Regional Participation Committees (RPC) will convene the experts in their personal capacity. The number of TAC members will depend on the subjects covered by the SIMEF, with at least 1 expert per subject.

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Output 1.1.4:</b> Regional Participation Committees (RPC) established and functioning <sup>27</sup> , facilitating the participation of key stakeholders for an effective implementation of the SIMEF and promoting its utilization at regional level	No RPC. Some regions have Forestry Roundtables and Regional Biodiversity Operational Committees that could be strengthened to assume the role of SIMEF RPCs	15 Regional Participation Committees (RPC) established and operating with: a) At least 2 annual meetings with 80% attendance of its members b) Regional Annual Work Plan (RAWP) reviewed and agreed c) 2 regional bi-annual progress reports reviewed d) 15 workshops for information dissemination and political advocacy held	4 RPCs established (Los Rios, Los Lagos, O'Higgins, Araucania) and operating with a) At least 8 annual meetings with 80% attendance (2 per RPC) b) 4 RAWP reviewed and agreed c) 8 bi-annual regional progress reports reviewed (2 per RPC)	4 RPCs operating and 5 new RPCs established (Maule, Bio Bio, Coquimbo, Aysen, Magallanes) and operating with: a) At least 18 annual meetings with 80% attendance (2 per RPC) b) 9 RAWP reviewed and agreed c) 18 bi-annual regional progress reports reviewed (2 per RPC) d) 3 workshops held	9 RPCs operating and 6 new RPCs established (Arica-Parinacota, Tarapaca, Antofagasta, Valparaiso, Atacama, Metropolitan) and operating with: a) At least 30 annual meetings with 80% attendance (2 per RPC) b) 15 RAWP reviewed and agreed c) 30 bi-annual regional progress reports reviewed (2 per RPC) d) 4 workshops held	15 RPCs operating with a) At least 30 annual meetings with 80% attendance (2 per RPC) b) 15 RAWP reviewed and agreed c) 30 bi-annual regional progress reports reviewed (2 per RPC) d) 8 workshops held	Operational procedures Minutes of meetings RAWP Regional bi-annual progress reports	RPC Executive Secretary  ESC/SIMEF  Head of Programme: RPC Facilitator

<sup>27</sup>RPCs will comprise 9-11 members (from INFOR, CONAF, MMA, MINAGRI regional offices, Regional Government, Regional Association of Municipalities, NGOs, MUCECH or equivalent and indigenous peoples and entrepreneurial organizations where relevant)

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Outcome 1.2</b></p> <p>Increased technical capacities and knowledge at national and regional levels for implementation of the SIMEF.</p>	<p>a) Protocols for collection and analysis of data for assessment and monitoring of forest ecosystems exist but need to be supplemented and/or validated and standardized.</p> <p>b) With the expansion of the NFI to the SIMEF more trained personnel will be needed in data collection and analysis, and development of SIMEF indicators and products</p>	<p>a) 4 data collection protocols supplemented, validated and standardized facilitating collection and analysis of high quality data</p> <p>b) 115 staffs (at least 40% female) of INFOR, CONAF and CIREN, 30 RPC members, and 136 data collection brigades trained and obtaining a score of at least 75% in the final evaluations</p>	<p>a) 4 data collection protocols supplemented, validated and standardized</p> <p>b) 28 staffs (at least 40% female) of INFOR, CONAF and CIREN, 8 RPC members, and 34 data collection brigades trained and obtaining a score of at least 75% in the final evaluations</p>	<p>b) 29 staffs (at least 40% female) of INFOR, CONAF and CIREN, 10 RPC members, and 34 data collection brigades trained and obtaining a score of at least 75% in the final evaluations</p>	<p>b) 29 staffs (at least 40% female) of INFOR, CONAF and CIREN, 12 RPC members, and 34 data collection brigades trained and obtaining a score of at least 75% in the final evaluations</p>	<p>a) 4 protocols adjusted in accordance with the experience gained through their application</p> <p>b) 29 staffs (at least 40% female) of INFOR, CONAF and CIREN, 8 RPC members, and 34 data collection brigades trained and obtaining a score of at least 75% in the final evaluations</p>	<p>Protocols</p> <p>Data quality review</p> <p>List of participants in training workshops and evaluation scores</p> <p>PPR</p>	<p>ESC/SIMEF</p> <p>Heads of Programmes:</p> <ul style="list-style-type: none"> <li>- Inventory</li> <li>- Training</li> </ul>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 1.2.1:</b> Cost-efficient data collection and processing protocols for evaluation and monitoring of forest ecosystems standardized and published in accordance with international (LULUCF, REDD+), national and regional policies and best practices</p>	<p>a) Existing protocols for monitoring above-ground tree biomass and dead wood need to be adjusted and validated; and protocols for litter and understory vegetation need to be applied to different species</p> <p>b) A biodiversity protocol exists but needs to be validated and herbaceous plant species added</p> <p>c) The land use cadastre for the whole country is prepared in average every 8 years</p> <p>d) A methodology on socio-economic dynamics is in process of being validated</p>	<p>a) One protocol for carbon data collection (above-ground tree biomass, dead wood, litter, understory vegetation) adapted and validated with technical coefficients for 4 MZ</p> <p>b) One protocol for biodiversity data collection validated and adjusted; one monitoring protocol with communities and forest landowners</p> <p>c) One protocol for updating the land use dynamics every two years</p> <p>d) One protocol for collecting data on socio-economic dynamics validated and adjusted</p>	<p>a) One protocol for carbon data collection adapted and validated</p> <p>b) One protocol for biodiversity data collection validated and adjusted and one biodiversity monitoring protocol with communities and forest landowners</p> <p>c) One protocol for updating the land use dynamics every two years</p> <p>d) One protocol for collecting data on socio-economic dynamics validated and adjusted</p>				<p>Protocols:</p> <ul style="list-style-type: none"> <li>- Carbon</li> <li>- Biodiversity</li> <li>- Monitoring with communities and forest landowners</li> <li>- Land use dynamics</li> <li>- Socio-economic dynamics</li> </ul> <p>PPR</p>	<p>ESC/SIMEF</p> <p>Head of Programme: Inventory</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 1.2.2:</b> Institutional staffs and stakeholders trained in data collection protocols, uploading of data to databases, data analysis and development of SIMEF indicators and products.</p>	<p>a) 30 staffs of INFOR, CONAF and CIREN are trained</p> <p>b) 0 RPC members</p> <p>c) 15 members of data collection brigades are trained</p>	<p>a) 115 staffs of INFOR, CONAF and CIREN trained in: remote sensing technology, field measurements (data uploading and validation in dataloggers), functioning of the data model and BD, C and socioeconomic protocols.</p> <p>b) 30 RPC members trained in remote sensing technology, field measurements (data uploading and validation in dataloggers), functioning of the data model and BD, C and socioeconomic protocols</p> <p>c) 136 members of data collection brigades trained in BD, C and socioeconomic protocols</p>	<p>a) 28 staffs of INFOR, CONAF and CIREN trained</p> <p>b) 8 members of 4 RPCs (Los Ríos, Los Lagos, O'Higgins, Araucanía) trained</p> <p>c) 34 members of data collection brigades trained</p>	<p>a) 29 staffs of INFOR, CONAF and CIREN trained</p> <p>b) 10 members of 5 RPCs (Maule, Biobío, Coquimbo, Aysén, Magallanes) trained</p> <p>c) 34 members of data collection brigades trained</p>	<p>a) 29 staffs of INFOR, CONAF and CIREN trained</p> <p>b) 12 members of 6 RPCs (Arica-Parinacota, Tarapaca, Antofagasta, Valparaiso, Atacama, Metropolitan) trained</p> <p>c) 34 members of data collection brigades trained</p>	<p>a) 29 staffs of INFOR, CONAF and CIREN trained</p> <p>c) 34 members of data collection brigades trained</p>	<p>List of participants to trainings</p> <p>Training materials</p> <p>Training evaluations</p> <p>Gender disaggregated data</p> <p>PPR</p>	<p>ESC/SIMEF</p> <p>Heads of Programmes:</p> <ul style="list-style-type: none"> <li>- Training</li> <li>- RPC Facilitator</li> </ul>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Component 2: Operational implementation of the SIMEF</b>								
<p><b>Outcome 2.1</b></p> <p>The National Forest Inventory expanded to a geospatial model populated with data on 13,6 million ha of native forest ecosystems covering the whole country and including an additional 3,5 million ha of native forest not included in the previous NFIs</p>	<p>a) Carbon stocks of 5.7 Gt CO<sub>2</sub>eq estimated in 10 million ha covering total above ground tree carbon</p> <p>b) No current forest biodiversity monitoring</p>	<p>a) Carbon stocks of 2 GtCO<sub>2</sub>-eq in an additional 3.5 million ha (all pools) inventoried</p> <p>b) 13,6 million ha of habitats for Chile's endemic forest biodiversity (including araucaria, temperate, alerce and mediterranean forests) monitored</p>				<p>a) Carbon stocks of 2 GtCO<sub>2</sub>-eq in an additional inventoried 3.5 million ha (all pools)</p> <p>b) 13,6 million ha of habitats for Chile's endemic forest biodiversity monitored</p>	<p>SIMEF products and reports</p> <p>Mid-term and final evaluations</p>	<p>ESC/SIMEF</p> <p>Heads Programmes</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 2.1.1:</b> Statistically valid data and reliable field information at landscape, stand and tree level collected covering forest ecosystems country wide, and indicators calculated for: a) carbon stocks; b) forest ecosystem biodiversity; c) drivers for land-use changes impacting forest ecosystems; and d) socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+</p>	<p>a) 10 million ha out of a total of 13.6 million ha under statistically valid design. Above ground tree carbon inventoried in 10 million ha; incomplete for dead Wood. A dendro-energy and forest carbon monitoring system is being implemented in 3 MZ</p> <p>b) Tree inventory in 10 million ha. Priority sites for biodiversity have been identified</p> <p>c) and d) Land use cadastre and land use change reports are prepared but lack information on the socioeconomic drivers of change</p>	<p>a) Biophysical information on the Arid-desert MZ completed. Sample design for the Mediterranean and Southern Islands MZs adjusted. Information on all carbon pools for Arica and O'Higgins regions and Southern Islands improved</p> <p>b) Non-plant kingdoms and herbaceous plants completed</p> <p>c) and d) Report identifying the drivers of land use change, forest deforestation and degradation, and SFM/REDD+ incentives for each MZ</p>	<p>c) Socio-economic drivers of forest ecosystem degradation will be collected in all regions</p>	<p>b) Non-plant kingdoms and herbaceous plants completed in Northern MZ</p> <p>c) and d) Report for Los Ríos, Los Lagos, O'Higgins, Araucanía</p>	<p>a) Sample design for Southern Islands. Information for all carbon pools in Southern Islands</p> <p>b) Non-plant kingdoms and herbaceous plants completed in Mediterranean MZ</p> <p>c) and d) Report for Maule, Biobío, Coquimbo, Aysén, Magallanes</p>	<p>a) Biophysical information on the Arid-desert MZ completed. Sample design for Mediterranean MZ adjusted. Information on all carbon pools for Arica and O'Higgins regions and Southern Islands improved</p> <p>b) Non-plant kingdoms and herbaceous plants completed in Southern MZ</p> <p>c) and d) Report for Arica-Parinacota, Tarapaca, Antofagasta, Valparaiso, Atacama, Metropolitan</p>	<p>Biophysical information</p> <p>Sample design</p> <p>Information on carbon pools</p> <p>BD inventories</p> <p>Reports on drivers of land use change, forest deforestation and degradation, and SFM/REDD+ incentives</p> <p>PPR</p>	<p>ESC/SIMEF</p> <p>Heads of Programmes:</p> <ul style="list-style-type: none"> <li>- Inventory</li> <li>- RPC Facilities</li> </ul>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Output 2.1.2: Thematic maps on forest ecosystems, carbon stocks and land use changes prepared, published and uploaded to the geospatial database	Thematic maps / thematic map on degradation	<p>a) Biophysical information maps for the Arid-desert MZ</p> <p>b) Carbon stock maps for the regions from Arica to O'Higgins and Southern Islands</p> <p>c) Land use change maps for each MZ</p> <p>d) Biodiversity maps</p>		<p>c) Land use change maps for Los Ríos, Los Lagos, O'Higgins, Araucanía</p> <p>d) Biodiversity maps for Los Ríos, Los Lagos, O'Higgins, Araucanía</p>	<p>b) Carbon stock maps for Southern Islands</p> <p>c) Land use change maps for Maule, Biobío, Coquimbo, Aysén, Magallanes</p> <p>d) Biodiversity maps for Maule, Biobío, Coquimbo, Aysén, Magallanes</p>	<p>a) Biophysical information maps for the Northern MZ</p> <p>b) Carbon stock maps from Arica to O'Higgins</p> <p>c) Land use change maps for Arica-Parinacota, Tarapaca, Antofagasta, Valparaiso, Atacama, Metropolitan</p> <p>d) Biodiversity maps for Arica-Parinacota, Tarapaca, Antofagasta, Valparaiso, Atacama, Metropolitan</p>	<p>Land use change maps</p> <p>Carbon stock maps</p> <p>Biophysical information maps</p> <p>PPR</p>	<p>ESC/SIMEF</p> <p>Head of Programme: Inventory</p>



Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Outcome 2.2</b></p> <p>Information system on carbón stocks and flows, biodiversity of forest ecosystems and land use changes and socioeconomic drivers operational and providing information to interested users and stakeholders.</p>	Cadastré and NFI but no integrated information system	One Integrated National Forest Monitoring and Assessment System (SIMEF) functioning at national level and providing updated and compatible information on carbon stocks and flows, biodiversity of forest ecosystems, interlinkages between socioeconomic drivers and land use changes, and forest fragmentation and degradation rates.			SIMEF operating and providing information to users and stakeholders	SIMEF operating and providing information to users and stakeholders	Information system reports PPR	ESC/SIMEF
<p><b>Output 2.2.1:</b></p> <p>Data standardization and management protocol agreed between INFOR, CONAF and CIREN</p>	No current protocol. IDEMINAGRI has GIS standardization	One protocol for data standardization and management agreed	Protocol for data standardization and management agreed				Protocol for data standardization and management PPR	ESC/SIMEF
<p><b>Output 2.2.2:</b></p> <p>Data integration model designed and implemented</p>	INFOR and CONAF have data models. A basic design for data integration has been prepared	Data integration model designed and implemented	Data integration model designed and implemented	Model operating	Model operating	Model operating	Data model PPR	ESC/SIMEF

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Output 2.2.3:</b> Web mapping based spatial information system prepared and connected to the integrated monitoring and assessment system	INFOR, CONAF, Sub-secretariat of Agriculture and CIREN have their own information systems. The Sub-secretariat of Agriculture has a cartographic platform (IDE). CONAF and CIREN are undertaking an integration process	Web mapping based information system operating		Web mapping based information system operating	Web mapping based information system operating	Web mapping based information system operating	SIMEF products (information, maps, reports) available for download	ESC/SIMEF
<b>Output 2.2.4:</b> Thematic reports on the state of forest ecosystems published based on the information generated by the SIMEF	Partial thematic reports are prepared. No integrated reports on the status of forest ecosystem	4 thematic reports published: a) forest carbon stocks and flows; b) status of forest biodiversity; c) land use change dynamics; d) drivers for deforestation and forest degradation and SFM/REDD+ incentives			1 thematic report on forest carbon stocks and flows published  1 thematic report on land use change dynamics published	1 thematic report on the status of forest biodiversity published  1 thematic report on the drivers for deforestation and forest degradation and SFM/REDD+ incentives published	Thematic reports <ul style="list-style-type: none"> <li>• Forest carbon stocks and flows</li> <li>• Land use change dynamics</li> <li>• Status of forest biodiversity</li> <li>• Drivers for deforestation and forest degradation and SFM/REDD+ incentives</li> </ul>	ESC/SIMEF  Heads of Programmes: <ul style="list-style-type: none"> <li>- Inventory</li> <li>- Outreach</li> </ul>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Component 3:</b> Application of the information generated by SIMEF in policies and regulations, land-use planning and in support of SFM incorporating REDD+								

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting		
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection	
<p><b>Outcome 3.1</b> Institutions with decision making power over the national legal and regulatory framework and two regional governments (covering 45 local governments) use the information produced by SIMEF to mainstream biodiversity and carbon stock conservation and REDD+ considerations in land use planning and sustainable forest management.</p>	<p>a) Fragmentation indices: core areas in O'Higgins and Los Rios are 183 and 860,338 ha respectively and average areas of patches are 104 and 227 ha respectively</p> <p>b) Forest degradation rate estimated in 77,000 ha/year (45% margin of error)</p> <p>c) 500 ha estimated to be under rehabilitation</p> <p>d) Forest degradation rate estimated in 77,000 ha/year (45% margin of error)</p> <p>e) Information on threatened species is poor. Baseline information for selected species will be developed during project implementation</p>	<p>a) Fragmentation indices: 10% increase in core areas and 10% increase in average areas of patches in the O'Higgins and Los Rios Regions 5 years after end of Project (EOP)</p> <p>b) Forest degradation rate reduced by 20% over the baseline with a 15% margin of error</p> <p>c) 4,300 ha of degraded forests under rehabilitation by EOP and 20,000 ha under rehabilitation 5 years after EOP</p> <p>d) 40.6x10<sup>6</sup> t CO<sub>2</sub>eq in avoided emissions from forest degradation and 13.5x10<sup>6</sup> t CO<sub>2</sub>eq sequestered by forest rehabilitation resulting in a net carbon balance of -54.2x10<sup>6</sup> t CO<sub>2</sub>eq (38% margin)</p> <p>e) Populations of key threatened tree species stabilized through passive restoration with: avellanita (<i>Avellanitabustillosii</i>) southern belloto (<i>Beilschmiediaberteroana</i>) northern belloto (<i>Beilschmiediamiersii</i>)</p>					<p>b) Forest degradation rate reduced by 20% over the baseline with a 15% margin of error</p> <p>c) 4,300 ha of degraded forests under rehabilitation</p> <p>d) 25% increase in carbon sequestration over the baseline estimated with a 15% margin of error</p> <p>e) Populations of key threatened tree species stabilized through passive restoration: avellanita (<i>Avellanitabustillosii</i>) southern belloto (<i>Beilschmiediaberteroana</i>) northern belloto (<i>Beilschmiediamiersii</i>)</p>	<p>SIMEF reports</p> <p>Thematic maps</p> <p>Mid-term and final evaluations</p>	ESC/SIMEF

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<b>Output 3.1.1:</b> Special tool for tracking and assessment of the utilization of data, maps and reports generated by the SIMEF by local, regional and national governments and other institutions and organizations developed and applied	Internet tools (e.g. Google analytics, Site seer)	Special tool for tracking and assessment of the utilization of data, maps and reports generated by the SIMEF developed and applied		Special tool for tracking and assessment developed and applied generating reports on the utilization of the SIMEF by different stakeholders at national, regional and local levels	Special tool for tracking and assessment applied generating reports on the utilization of the SIMEF by different stakeholders at national, regional and local levels	Special tool for tracking and assessment applied generating reports on the utilization of the SIMEF by different stakeholders at national, regional and local levels. Products, training and outreach strategies for users adjusted to increase utilization of SIMEF	Reports and statistics on the use of data, maps and reports disaggregated by user category  PPR	ESC/SIMEF
<b>Output 3.1.2:</b> SIMEF information disseminated according to user types and levels	No outreach strategy	Outreach strategy and web platform designed and implemented, disseminating and communicating specific reports per user category (public institutions, private sector, civil society)	Outreach strategy and web platform designed	Outreach strategy disseminating and communicating specific reports per user category	Outreach strategy disseminating and communicating specific reports per user category	Outreach strategy and web platform disseminating and communicating specific reports per user category	Outreach strategy document  Web platform  PPR	ESC/SIMEF

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 3.1.3:</b> Forest legal regulatory framework strengthened through utilization of the information generated by the SIMEF</p>	Lack of technical information oriented toward the forest legal and regulatory framework	<p>a) Information provided by the SIMEF for: i) the Native Forest Law; ii) the Forestry Promotion Law; iii) updating the National Biodiversity Strategy and the Biodiversity and Climate Change Strategy; and iv) UNFCCC National Communications</p> <p>b) Operational regulations elaborated for the Native Forest Law in regards to: i) promotion of non-timber forest products for two forest types (evergreen, sclerophyllous); ii) criteria for designating forests for conservation purposes; iii) incentives for conservation and rehabilitation of native forests; and iv) financing for SFM technology transfer</p>	a) 1 dialogue roundtable for the Native Forest Law	<p>Agreements with users on the format for delivering information</p> <p>a) 1 dialogue roundtable for the Forestry Promotion Law; 1 workshop for the National Biodiversity Strategy and the Biodiversity and Climate Change Strategy</p>	<p>a) 1 workshop for the 3rd National Communication to the UNFCCC</p> <p>b) Operational regulations elaborated for the Native Forest Law in regards to: i) promotion of non-timber forest products for two forest types (evergreen, sclerophyllous); ii) criteria for designating forests for conservation purposes</p>	<p>b) Operational regulations elaborated for the Native Forest Law in regards to: iii) incentives for conservation and rehabilitation of native forests; iv) financing for SFM technology transfer</p>	<p>Dialogue roundtables and workshop reports</p> <p>List of participants</p> <p>Gender disaggregated data</p> <p>Operational regulations for the Native Forest Law</p> <p>PPR</p>	ESC/SIMEF

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 3.1.4:</b> Information on valuation and conservation of forest carbon stocks and biodiversity generated by the SIMEF are mainstreamed in Regional Land Use Plans (RLUP) and Communal Development Plans (PLADECO) and zoning and use regulations</p>	<p>All regions of Chile have a Regional Development Strategy. Los Rios has a Regional Land Use Plan containing certain degree of information on biodiversity. O'Higgins has a Land Use Plan 2010-2014. Each regional government has a specialized Unit for Integrated Management of the Territory (UGIT). The Tourist Interest Zones (ZOIT) is a national level-planning instrument. Communal Development Plans are the planning instruments of the communes.</p>	<p>Information on valuation and conservation of forest carbon stocks and biodiversity mainstreamed in 2 RLUPs (O'Higgins and Los Rios regions) and 4 PLADECOs (communes of Panguipulli, Las Cabras, Doñihue and Coltauco) and zoning and use regulations covering 479,200 ha</p>	<p>1 Agreement signed between INFOR and the O'Higgins Regional Government (GORE)</p> <p>1 Agreement signed between INFOR and Los Rios GORE</p> <p>Detailed design of 2 pilots, including technical assistance plan and levels of information to be delivered per user category</p>	<p>Data processing models to generate information per user category</p>	<p>RLUP of O'Higgins and Los Rios mainstream valuation and conservation of carbon stocks and biodiversity</p> <p>PLADECOs of Panguipulli, Las Cabras, Doñihue and Coltauco mainstream valuation and conservation of carbon stocks and biodiversity</p>	<p>Agreements with INDAP (PRODESAL), CONAF and Communes to apply the RLUPs and PLADECOs throughout the regions</p>	<p>Agreements between INFOR and GOREs</p> <p>Detailed design of pilots</p> <p>RLUPs</p> <p>PLADECOs</p> <p>Agreements with INDAP, CONAF and Communes</p> <p>PPR</p>	<p>ESC/SIMEF</p>

Indicators	Baseline (2014)	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
<p><b>Output 3.1.5:</b> Local SFM practices that conserve forest ecosystem services (carbon stocks and habitats for globally significant species) and improve livelihood conditions implemented with the support of information generated by the SIMEF</p>	<p>Biophysical and socio-economic information is available. Model Forests have a governance structure. There are no management instruments for SFM. Harvesting plans are prepared but without SFM criteria. Only one property in the Panguipulli MF has an SFM plan.</p>	<p>25% increase in number of management plans approved and under implementation based on agreed participatory practices and guidelines for SFM in 2 pilot model forests (Panguipulli Model Forest in Los Rios and Cachapoal Model Forest in O'Higgins) covering 2,000 ha leading to conservation of forest ecosystem services (carbon stocks and habitats for globally significant species) and lessons learned published.</p>	<p>1 Agreement signed between INFOR, CONAF and the Panguipulli MF management board</p> <p>1 Agreement signed between INFOR, CONAF and the Cachapoal MF management board</p> <p>Detailed design of pilots, including technical assistance plan and levels of information to be delivered per user category</p>	<p>Data processing models to generate information per user category</p> <p>SFM practices and guidelines for Panguipulli and Cachapoal MFs agreed through a participatory process</p>	<p>12.5% increase in number of management plans approved based on the agreed SFM practices and guidelines (baseline to be determined in project year 1)</p>	<p>25% increase in number of management plans approved based on the agreed SFM practices</p> <p>1 lessons learned publication</p>	<p>Agreements between INFOR and MFs</p> <p>Detailed design of pilots</p> <p>SFM practices</p> <p>SFM plans</p>	<p>ESC/SIMEF</p>
<p><b>Output 3.1.6:</b> Carbon baseline provided by the SIMEF for an MRV System under CONAF's "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile" (PBCCH)</p>	<p>Statistical and parametric data on some species are available</p>	<p>Carbon baseline covering a territory of 479,200 ha in the O'Higgins and Los Rios regions for the MRV System under CONAF's PBCCH provided by the SIMEF</p>		<p>Carbon baseline for 2 CONAF jurisdictions (O'Higgins and Los Rios)</p>	<p>Land use monitoring model validated and process for implementation initiated.</p>	<p>Land use monitoring model process concluded.</p>	<p>Carbon baseline</p>	<p>ESC/SIMEF</p>



## APPENDIX 2: WORK PLAN (RESULTS BASED)

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Component 1: Development of institutional coordination framework and capacities for the implementation of the SIMEF</b>																		
<b>Output 1.1.1:</b> National SIMEF Steering Committee (NSC) established and functioning with the participation of the sectoral government institutions with competencies in forest ecosystem matters (Permanent members: CONAF, CIREN, INFOR, MINAGRI, MMA, SUBDERE and advisory members (invited on a case-by-case basis) and FAO (during the life of the project)	Agreement between CONAF, CIREN, INFOR, MINAGRI, MMA, SUBDERE	MINAGRI INFOR																
	Steering Committee meetings	Steering Committee (SC) Chairperson Executive Secretariat (ES) Coordinator																
	Review and approval of SIMEF annual work plans	SC ES																
	Support to regional coordinations	SC ES																
	Review and approval of SIMEF bi-annual progress reports	SC ES																
	Review of mid-term and final reports to GEF	SC ES																
	National and regional dialogues on SIMEF related public policies	SC ES																
<b>Output 1.1.2:</b> SIMEF Executive Secretariat (ES) established, proposes and effectively implements the SIMEF Annual Work Plans	Establishment of the ES	ES SC																
	Elaboration of Annual Work Plan	ES SC																
	Elaboration of bi-annual progress reports (PPR, PIR)																	
	Elaboration of mid-term and final reports	ES SC Regional Participation Committee (RPC)																
	Coordination and implementation of ecosystem inventory programme	ES																
	Coordination and implementation of the RPC programme	ES																
	Coordination and implementation of the training programme	ES																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Coordination and implementation of the outreach programme	ES																
	Evaluation and 5-year projection	ES SC RPC																
Output 1.1.3: Technical Advisory Committee (TAC) established and functioning, ensuring a high technical quality of the SIMEF and supporting its implementation and utilization	Establishment of the TAC	SC ES																
	TAC meetings	Technical Advisory Committee (TAC)																
	Revision of the methodology for the Mediterranean MZ	TAC ES																
	Revision of the methodology for the Temperate Forests MZ	TAC ES																
	Revision of the methodology for the Patagonian MZ	TAC ES																
	Revision of the methodology for the Arid-desert MZ	TAC ES																
	Recommendations for information access and dissemination	TAC																
	Recommendations for user training	TAC																
	Evaluation and 5-year projection	SC ES TAC RPC																
	Output 1.1.4: Regional Participation Committees (RCP) established and functioning, facilitating the participation of key stakeholders for an effective implementation of the SIMEF and promoting its utilization at regional level	Establishment of the RPC	SC ES Regional Governments (GORE)															
RCP bi-annual meetings		SC ES RPC																
Regional Annual Work Plans		RPC																
Bi-annual Project reports		RPC ES																
Workshops for information dissemination and advocacy		RPC																
Regional thematic roundtables		RPC ES																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Training courses on SIMEF	RPC ES																
	Dissemination of SIMEF results by RPC members	RPC members																
	Evaluation and 5-year projection	RPC SC ES																
Output 1.2.1: Cost-efficient data collection and processing protocols for evaluation and monitoring of forest ecosystems in accordance with international (LULUCF, REDD+), national and regional policies and best practices standardized and published	Adjustment and validation of the protocol for collection of carbon data	ES INFOR																
	Adjustment and validation of the protocol for collection of biodiversity data	INFOR, CONAF, ES																
	Design and validation of the monitoring protocol with communities	ES, CONAF, INFOR																
	validation of the protocol to update land use dynamics	ES, INFOR, CONAF, CIREN																
	Training course on land use dynamics protocol	ES, INFOR, CONAF, CIREN																
	Adjustment and validation of protocol for collection of socio-economic information	ES, INFOR, CONAF																
Output 1.2.2: Institutional staffs and stakeholders trained in data collection protocols, uploading of data to databases, data analysis and development of SIMEF indicators and products.	Design of training courses	INFOR ES (Training Unit)																
	Course for brigades in Mediterranean and Temperate Forests Macro Zones	ES (Training Unit)																
	Course for brigades in Patagonian Macro Zone	ES (Training Unit)																
	Course for brigades in Arid-desert Macro Zone	ES (Training Unit)																
	Courses for professional staff (3 courses, 40 participants each)	ES (Training Unit)																
	Course for RPCs regions: Los Ríos, Los Lagos, O'Higgins, Araucanía, Maule, Biobío, Coquimbo, Aysén, Magallanes	ES (Training Unit)																
	Course for RPCs regions: Arica-Parinacota, Tarapacá, Antofagasta, Valparaíso, Atacama, Metropolitan	ES (Training Unit)																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Component 2: Implementation of the SIMEF</b>																		
Output 2.1.1: Statistically valid data and reliable field information at landscape, stand and tree level collected covering forest ecosystems country wide, and indicators calculated for: a) carbon stocks; b) forest ecosystem biodiversity; c) drivers for land-use changes impacting forest ecosystems; and d) socioeconomic drivers for deforestation and forest degradation and incentives for SFM and REDD+	Assessment of socioeconomic drivers in Maule, Bio Bio, Coquimbo, Aysen, Magallanes	INFOR CONAF Local communities																
	Assessment of socioeconomic drivers in Arica-Parinacota, Tarapaca, Antofagasta, Atacama, Valparaiso	INFOR CONAF Local communities																
	Sample design and biophysical information for Southern Islands	INFOR CONAF																
	Sample design and biophysical information for Northern and Mediterranean Macro Zones	INFOR CONAF																
	Biodiversity protocols (revision, workshops, training)	INFOR CONAF Local communities																
	Biodiversity inventory (non-plantae kingdoms and herbaceous species) in Northern Macrozone	INFOR CONAF Local communities																
	Biodiversity inventory (non-plantae kingdoms and herbaceous species) in Mediterranean Macrozone	INFOR CONAF Local communities																
	Biodiversity inventory (non-plantae kingdoms and herbaceous species) in Austral Macrozone	INFOR CONAF Local communities																
Output 2.1.2: Thematic maps on forest ecosystems, carbon stocks and land use changes prepared, published and uploaded to the geospatial database	Elaboration of biophysical thematic maps	INFOR																
	Elaboration of land use change maps	CONAF																
Output 2.2.1: Data standardization and management protocol agreed between INFOR, CONAF and CIREN	Identification of data model	INFOR, CIREN, CONAF																
	Inter-operability coding tables	INFOR CIREN, CONAF																
	Elaboration of the protocol document	INFOR CIREN, CONAF																
Output 2.2.2: Data integration model designed and implemented	Assessment of institutional data models	CIREN																
	Assessment of hardware capacities	CIREN																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Assessment of software capacities	CIREN																
	Implementation of interoperability	CIREN,																
Output 2.2.3: Web mapping based spatial information system mapping prepared and connected to the integrated monitoring and assessment system	Web mapping development	CIREN,INFOR																
	Testing and validation	CIREN																
	Release and implementation	CIREN																
Output 2.2.4: Thematic reports on the state of forest ecosystems published based on the information generated by the SIMEF	Carbon stocks report	INFOR ES																
	Biodiversity status report	INFOR ES																
	Land use change report	INFOR ES																
	Drivers of degradation and possible incentives report	INFOR ES																
<b>Component 3: Application of the information generated by SIMEF in local, regional, and national policies and regulations</b>																		
Output 3.1.1: Special tool for tracking and assessment of the utilization of data, maps and reports generated by the SIMEF by local, regional and national governments and other institutions and organizations developed and applied	Generate and apply means of verification for feedback	ES RPC																
	Generate reports and statistics of utilization of SIMEF information and products	ES RPC																
	Feedback to the ES	ES RPC																
Output 3.1.2: SIMEF information disseminated per user types and levels	Systematization of SIMEF information	ES																
	Design of the outreach strategy	ES																
	Implementation of the outreach strategy	ES RPC																
	Design of the web platform	ES RPC																
	Maintenance/updating of the web platform	ES RPC																
	Elaboration of specific reports for target audiences	ES																
	Development of products and strategies to increase use of information	ES																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 3.1.3: Forest legal regulatory framework strengthened through utilization of the information generated by the SIMEF	Establishment of dialogue roundtable for Native Forest Law	ES INFOR CONAF																
	Establishment of dialogue roundtable for Forest Promotion Law	ES INFOR CONAF																
	Workshop to update the national biodiversity strategy	ES INFOR CONAF																
	Workshop for 3rd UNFCCC national communication	ES INFOR CONAF																
	Elaboration of regulations proposals for the Native Forest Law	ES INFOR CONAF																
Output 3.1.4: Information on valuation and conservation of forest carbon stocks and biodiversity generated by the SIMEF are mainstreamed in Regional Development Land Use Plans (RLUP) and Communal Development Plans (PLADECO) and zoning and use regulations	Workshops to launch SIMEF in O'Higgins and Los Rios	ES SIMEF																
	Detailed design of pilots	ES SIMEF																
	Data processing model to generate information per user type	ES SIMEF																
	Mainstreaming of biodiversity conservation and carbón stocks in RDS, RLUP, MDP	ES SIMEF																
	Agreements with INDAP/Prodesal, CONAF and Municipalities and dissemination of RDS, RLUP, MDP	ES SIMEF																
	Training workshops for stakeholders (6)	ES SIMEF																
Output 3.1.5: Local SFM practices that conserve forest ecosystem services (carbon stocks and habitats for globally significant species) and improve livelihood conditions implemented with the support of information generated by the SIMEF	Agreements between INFOR, CONAF, and model forests	ES SIMEF																
	Participatory work plan/technical assistance plan	ES SIMEF																
	Data processing model for information generation	ES SIMEF																
	Elaboration of SFM guidelines	ES SIMEF																
	Elaboration and implementation of SFM	ES																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	plans	SIMEF																
	Publication and dissemination of lessons learned	ES SIMEF																
Output 3.1.6: Carbon baseline provided by the SIMEF as input to an MRV System in support of CONAF's "Platform for the Generation and Trading of Carbon Credits from the Forestry Sector in Chile"	Elaboration of land use maps of pilot regions	CONAF INFOR																
	Information collection from inventory parcels	CONAF INFOR																
	Assessment of variability of carbon stocks	INFOR																
	Design of sampling and monitoring procedures	INFOR																
	Establishment of monitoring parcels	INFOR																
	Data processing	INFOR																
	Elaboration of data processing and field manuals	INFOR																
	Identification of reference line (land use change model)	CONAF																
	Quality control per IPCC guidance (2006)	INFOR																
	Collection of technical coefficients to determine carbon stocks	CONAF INFOR																
	Development of technical elements for estimation of carbon stocks	INFOR																
	Updating/uploading of data to SIMEF	INFOR																
	Development of reference line projection model	INFOR																
	Application and validation of projection model	INFOR																
	Monitoring (collection and processing of data)	INFOR																
	Preparation of report on status of emissions	CONAF INFOR																
	Preparation and dissemination a guideline	CONAF INFOR																

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Project Management</b>																		
	Contracting of project staff																	
	Set up the project progress monitoring system																	
	Systematic monitoring of project output and outcome indicators and targets																	
	Preparation of Project Progress Reports (PPR) and submission to FAO																	
	Provision of inputs to Project Implementation Review (PIR) including co-financing report																	
	Mid-term and final evaluations and completion of GEF BD, CC and SFM/REDD+ Tracking Tools																	
	External Audits																	



### APPENDIX 3: RESULTS BUDGET



Microsoft Office  
Excel 97-2003 Works

Oracle code and description	Unit	No. of units	Unit cost	BUDGET in USD				Total	Expenditure by Year			
				Comp. 1:	Comp. 2:	Comp. 3:	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total						
<b>5570 International Consultants</b>												
Land use protocol	month	1.5	10,000	15,000	0	0		15,000	15,000			
Sub-total international Consultants				15,000	0	0	0	15,000	15,000	0	0	0
<b>National consultants</b>				0								
ES Executive Coordinator	month	48	5,000	39,666	39,667	39,667	121,000	240,000	60,000	60,000	60,000	60,000
ES Head of Programme: Outreach	month	24	3,500	84,000	0	0		84,000	21,000	21,000	21,000	21,000
ES Head of Programme: Training	month	24	3,500	84,000	0	0		84,000	21,000	21,000	21,000	21,000
ES Head of Programme: RPC Facilitator	month	48	3,500	168,000	0	0		168,000	42,000	42,000	42,000	42,000
ES Administrative Assistance	month	48	1,500	24,000	24,000	24,000		72,000	18,000	18,000	18,000	18,000
Biophysical brigades	point	700	1,000	0	700,000	0		700,000	350,000	350,000		
Biodiversity brigades	point	480	2,200	0	1,056,000	0		1,056,000		352,000	352,000	352,000
Socio-economic brigades	household	486	500	0	243,000	0		243,000	243,000			
Consultant validation of standardization protocol	month	1.5	3,500	0	5,250	0		5,250		5,250		
Consultant data model	month	3	5,000	0	15,000	0		15,000		15,000		
Baseline Panguipulli and Cachapoal MFs	Lumpsume	1	209,000	0	209,000	0		209,000	52,250	52,250	52,250	52,250
Sub-total national Consultants				399,666	2,291,917	63,667	121,000	2,876,250	807,250	936,500	566,250	566,250
<b>5570 Sub-total consultants</b>				414,666	2,291,917	63,667	121,000	2,891,250	822,250	936,500	566,250	566,250
<b>5650 Contracts</b>												
BD Protocol	month	9	3,500	31,500	0	0		31,500	31,500			
Carbon protocol	month	3	3,500	10,500	0	0		10,500	10,500			
Socio-economic protocol	month	3	3,500	10,500	0	0		10,500	10,500			
LoA CONAF (land use)	Lumpsume	1	302,000	0	302,000	20,000		322,000		107,333	107,333	107,333
Tree biomass study	Lumpsume	1	380,000	0	380,000	0		380,000		126,667	126,667	126,667
Shrub biomass study	Lumpsume	1	75,000	0	75,000	0		75,000		25,000	25,000	25,000
Webmapping development	Lumpsume	1	30,000	0	30,000	0		30,000		10,000	10,000	10,000

Oracle code and description	Unit	No. of units	Unit cost	BUDGET in USD				Total	Expenditure by Year			
				Comp. 1:	Comp. 2:	Comp. 3:	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total						
Data quality control	global	4	15,000	0	60,000	0		60,000		20,000	20,000	20,000
NTPF regulations	month	2	3,500	0	0	7,000		7,000			7,000	
Incentives regulations	month	2	3,500	0	0	7,000		7,000			7,000	
BD criteria regulations	month	2	3,500	0	0	7,000		7,000			7,000	
Financing of SFM technology transfer regulations	month	2	3,500	0	0	7,000		7,000			7,000	
Mid-term review	Lumpsume	1	40,000	0	0	0	40,000	40,000			40,000	
Final evaluation	Lumpsume	1	40,000	0	0	0	40,000	40,000				40,000
Annual external audit	contract	4	15,000	0	0	0	60,000	60,000	15,000	15,000	15,000	15,000
<b>5650 Sub-total Contracts</b>				<b>52,500</b>	<b>847,000</b>	<b>48,000</b>	<b>140,000</b>	<b>1,087,500</b>	<b>67,500</b>	<b>304,000</b>	<b>372,000</b>	<b>344,000</b>
<b>5900 Travel</b>												
ES official travel	Lumpsume	1	320,000	320,000	0	0		320,000	80,000	80,000	80,000	80,000
TAC official travel	Lumpsume	1	30,000	30,000	0	0		30,000	7,500	7,500	7,500	7,500
RPC Executive Secretaries official travel	Lumpsume	1	90,000	90,000	0	0		90,000	22,500	22,500	22,500	22,500
International consultant	Lumpsume	1	2350	2,350	0	0		2,350	2,350			
<b>5900 Sub-total travel</b>				<b>442,350</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>442,350</b>	<b>112,350</b>	<b>110,000</b>	<b>110,000</b>	<b>110,000</b>
<b>5023 Training and workshops</b>												
RPC meetings	meeting	90	1,000	90,000	0	0		90,000	22,500	22,500	22,500	22,500
Staff training workshops	workshop	4	2,000	8,000	0	0		8,000	2,000	2,000	2,000	2,000
RPC training workshops	workshop	4	5,000	20,000	0	0		20,000	5,000	5,000	5,000	5,000
BD brigades training workshops	workshop	4	6,000	24,000	0	0		24,000	6,000	6,000	6,000	6,000
Biophysical brigades training workshops	course	2	4,000	8,000	0	0		8,000	2,000	2,000	2,000	2,000
Socio-economic brigades training workshops	workshop	2	4,000	8,000	0	0		8,000	2,000	2,000	2,000	2,000
Regional/municipal workshops O'Higgins and Los Rios	workshop	6	2,000	0	0	12,000		12,000			12,000	
PRODESAL training workshops	workshop	4	2,000	0	0	8,000		8,000	8,000			
Land use protocol training workshop	workshop	1	10,000	10,000	0	0		10,000	10,000			
Dialogue roundtables (Native forest/Forestry Promotion laws)	roundtable	2	2,000	0	0	4,000		4,000	4,000			
NBSAP and UNFCCC workshops	workshop	2	2,000	0	0	4,000		4,000		4,000		
Inception workshop	workshop	1	10,000	0	0	0	10,000	10,000		10,000		
Annual project revision/planning workshops	workshop	4	7,000	0	0	0	28,000	28,000	7,000	7,000	7,000	7,000
SFM practices workshop	workshop	6	2,000	0	0	12,000		12,000		12,000		
Carbon baseline dissemination workshops	workshop	4	4,000	0	0	16,000		16,000			8,000	8,000
Local knowledge workshops	workshop	4	12,000	0	0	0		0				
SFM pilots	workshop	2	36,792	0	0	73,584		73,584		36,792	36,792	

Oracle code and description	Unit	No. of units	Unit cost	BUDGET in USD				Total	Expenditure by Year			
				Comp. 1:	Comp. 2:	Comp. 3:	PM	GEF	Year 1	Year 2	Year 3	Year 4
				Total	Total	Total						
Carbon mainstreaming campaign in regional plans	workshop	17	17,000	0	0	289,000		289,000	72,250	72,250	72,250	72,250
BD mainstreaming campaign in regional plans	workshop	17	17,000	0	0	289,000		289,000	72,250	72,250	72,250	72,250
SFM dissemination campaign	workshop	17	17,000	0	0	289,000		289,000	72,250	72,250	72,250	72,250
<b>5023 Sub-total training</b>				168,000	0	996,584	38,000	1,202,584	285,250	326,042	320,042	271,250
<b>6000 Expendable procurement</b>												
Publication of thematic reports	report	4	4,000	0	16,000	0		16,000				16,000
Outreach materials (mass media, printed materials, etc.)	Lumpsume	1	50,000	0	0	50,000		50,000				50,000
<b>6000 Sub-total expendable procurement</b>				0	16,000	50,000	0	66,000	0	0	0	66,000
<b>6100 Non-expendable procurement</b>												
INFOR webmapping server	Lumpsume	1	6,000	0	6,000	0		6,000				6,000
Equipment for brigades (datalogger, gps, electronic reglascopio, laser distance meter, vertex: 8/each)	unit	8	8,500	0	68,000	0		68,000	68,000			
Satellite images	Unit	2	262,500	0	525,000	0		525,000	525,000			
<b>6100 Sub-total non-expendable procurement</b>				0	599,000	0	0	599,000	593,000	0	0	6,000
<b>6300 GOE budget</b>												
Miscellaneous including contingencies				5,000	0	0		5,000				5,000
<b>6300 Sub-total GOE budget</b>				5,000	0	0	0	5,000	0	0	0	5,000
<b>TOTAL</b>				1,082,516	3,753,917	1,158,251	299,000	6,293,684	1,880,350	1,676,542	1,368,292	1,368,500

## APPENDIX 4: RISK MATRIX

Risk statement	Impact	Likelihood <sup>28</sup>	Mitigation measures
<p><b>Lack of support and participation from CONAF and other key institutions at the regional level:</b> At the national government level all key institutions (CONAF, CIREN, INFOR, and the Ministry of Environment) are behind the proposed project and have already started a coordination process during the formulation of the project. However, at the regional level priorities of local political authorities may impact the engagement of regional CONAF offices and other stakeholders in the implementation of the SIMEF.</p>	<p>Slow progress in the implementation of the SIMEF. The different government institutions will continue to work in an uncoordinated manner thereby progress to reduce forest degradation (including loss of carbon stocks and biodiversity) may not be sufficient to halt the current degradation trends.</p>	<p>Low</p>	<p>Component 1 will establish the institutional framework for inter-institutional coordination and management of the SIMEF. This structure will comprise a National Steering Committee, an Executive Secretariat, a Technical Advisory Committee and Regional Participation Committees. The National Steering Committee will be a body made up of high-level representatives of INFOR, CONAF, CIREN, Ministry of Environment, and SUBDERE, the main SIMEF related government institutions. These institutions will sign an agreement, which will establish the roles, responsibilities and operating procedures of the Committee, thus contributing to ensure support and participation. Moreover, INFOR, CONAF, CIREN and MMA have committed co-financing to the project.</p> <p>Regional stakeholders (regional and local governments, NGOs and CSOs) will be involved through the Regional Participation Committees, which will be established to ensure a coordinated, participatory and expedite implementation of the SIMEF. These Committees will be in charge of implementing project activities in the regions through work plans establishing the agreed activities to be undertaken in which they will be involved (e.g. mobilizing and engaging stakeholders, participating in the identification of regional level needs and demands of information for the development of methodologies, implementing pilot activities, disseminating and promoting the use of SIMEF information), thus ensuring their support and participation. (Components 2 and 3).</p>
<p><b>Access to biodiversity and other data collection:</b> Chile is characterized by landowners, who highly value and oversee their property rights. Access to private property</p>	<p>Incomplete SIMEF. Insufficient data to determine the current biodiversity assets and</p>	<p>High (However, total conservation areas under private</p>	<p>Private landowners will be involved through their organizations in the Regional Participation Committees to ensure their support and participation (Component 1). The outreach strategy to be implemented under Component 3 will help raise awareness of</p>

<sup>28</sup> Estimate of likelihood: High, Moderately High, Moderately Low, or Low, as per the FAO Project Cycle Guidelines. .

Risk statement	Impact	Likelihood <sup>28</sup>	Mitigation measures
requires explicit permission from the owners to perform data collection in the forests. In addition, there have recently been some problems for the NFI brigades to access areas privately designated for conservation.	status, impacts of degradation and future trends.	property are limited)	landowners on the objectives of the SIMEF and the benefits of monitoring forest ecosystems. Information materials will be specifically tailored for this target audience. Furthermore, private landowners in the Cachapoal and Panguipulli pilot sites will be involved in the piloting of SFM practices, including receiving training and awareness raising in SFM.
<b>Low or medium quality of generated information:</b> The quality of the information generated by SIMEF is dependent of keeping high quality in all steps in the information generation process from the field data collection, database upgrading, and data processing including the calculation of key indicators, and the results dissemination.	Inaccuracy of information generated leading to lack of adequate information for planning and decision-making.	Low	The present NFI already has quality control procedures, which will be included in the design of the SIMEF including methodologies and protocols for data collection and processing and careful selection and periodical training of data collection brigades. The Technical Advisory Committee to be established will contribute to generate high quality information by proposing methodological adjustments of the SIMEF in accordance to the specific characteristics of the project's four Macro Zones of intervention to ensure high quality information aligned with the REDD+ and LULUCF mechanisms, as well as issuing recommendations to facilitate user access to information and training.
<b>Lack of participation and buy in of interest groups:</b> The validation of the SIMEF data collection and processing methodologies by interest groups at national and local level is crucial for the credibility of the information and products generated by the SIMEF and therefore also for the utilization of the same to improve forest policies and legal instruments and SFM, REDD+ and forest ecosystem conservation practices. There are examples in Chile of interest groups questioning the validity of government supported monitoring causing delays in the approval of new legislation. For example it took 15 years to approve the Natural Forest Law.	Delays in the implementation of the SIMEF. Lack of access to scientific and technical knowledge needed to implement a high quality SIMEF. Regional/local information needs and knowledge not taken into consideration. SIMEF information will not be useful and will not be used.	Medium	Interest groups and key stakeholders will be invited to participate in the Technical Advisory Committee and the Regional Participation Committees. The Technical Advisory Committee will include renowned scientists and professionals from the academia and research centers throughout Chile. The Regional Participation Committees will include for instance NGOs, CSOs, private sector and academia. Both committees will provide participation opportunities for all interest groups to ensure their engagement and support. The outreach strategy will prepare specific information materials to disseminate SIMEF results to the different target audiences.
<b>Climate change risks:</b> The Analysis on Climate Change and the vulnerability of forest ecosystems (INFOR) indicates dryer and warmer climate from north to south in Chile in	The afore-mentioned impact is an important change in the long, but very narrow territory of	Low (The design of the SIMEF has already taken this	Component 1 will validate the existing protocols for updating land use and socio-economic dynamics thereby enabling the collection of data on land use, land use changes and socio-economic drivers every two years compared to the current updating in the land use cadastre

<b>Risk statement</b>	<b>Impact</b>	<b>Likelihood<sup>28</sup></b>	<b>Mitigation measures</b>
the coming decades causing changes in rainfall patterns and increase in extreme temperatures. The main impact will be that the current environmental growth conditions will move about 150 to 200 km towards the South.	Chile. If cultivation areas move to the south they will move into main primary forest areas.	need into account)	every 8 years. Component 2 will produce information (maps and reports). More frequent monitoring will provide updated information on changes thus allowing taking remedial actions before major impacts occur.

## APPENDIX 5:PROCUREMENT PLAN

Ref. No.	Requirement (Item Description)	Unit (Lts, MT, Kg., etc.)	Estimated quantities	Estimated cost	Unit price <sup>29</sup>	Solicitation Method <sup>30</sup>	Procurement Method <sup>31</sup>	Buyer <sup>32</sup>	Targeted tender launch date	Targeted contract award date	Targeted Delivery date	Final destination and delivery terms	Status <sup>33</sup>	Other Constraints/ Considerations

This table shall be completed by INFOR in collaboration and with final clearance by the FAO BH during project inception. Subsequently it will be updated annually (see section 4.4 Procurement).

<sup>29</sup> To be completed during project cycle implementation and monitoring phase.

<sup>30</sup> RFP: Request for Proposal; RFQ: Request for Quotation; ITB: Invitation to Bid.

<sup>31</sup> Direct Procurement, re-use of tender results, UN, Framework, etc.

<sup>32</sup> CSAP, Non-HQ Location, Procurement Mission.

<sup>33</sup> Planned, Requested, Tendered, Order Placed, Delivered, Completed.

## **APPENDIX 6: TERMS OF REFERENCE (TORS)**

### **N.1: Draft Terms of Reference: Executive Secretariat Coordinator**

Under the overall supervision of the National Project Director and the technical guidance of the Lead Technical Officer (LTO), the Executive Secretariat Coordinator will support the Project executing partners acting as the head of the Executive Secretariat and Secretary to the National Steering Committee (SC). He/she will be responsible for overall planning, daily management, technical supervision and coordination of all project activities, carrying out the following tasks:

- Participate in the inception workshop, and the annual project progress review and planning workshops with local stakeholders and Project Executing Partners to prepare the Annual Work Plan and Budget (AWP/B).
- Provide technical supervision and guidance to the Project Executing Partners in implementing project activities.
- Conduct regular field supervision visits and provide on-site guidance to technical staff from Project Executing Partners;
- Day-to-day coordination and communication with the Executive Secretariat and Project Executing Partners staff.
- Monitor project risks according to the risk matrix (see Appendix 4) and ensure that mitigation measures are being applied or alternative mitigation measures are in place.
- Prepare six-monthly Project Progress Reports (PPRs) in coordination with the Project specialists.
- Support the FAO/LTU in preparation of the annual Project Implementation Review (PIR);
- Prepare reports on the in-kind and cash co-financing provided by co-financers and eventual other partners not foreseen in the Project Document;
- In consultation with the Project Executing Partners, the FAO Evaluation Office, the LTU and the FAO-GEF Coordination Unit, support the organization of the mid-term and final evaluations;
- Coordinate and conduct M&E related activities including: i) conducting regularly field M&E visits to project sites; ii) monthly monitoring progress in achieving all project outputs and outcome indicators; iii) providing technical and operational guidance to the staff of participating institutions; and iv) proposing eventual shifts in project implementation strategies if the project is not performing as planned;
- Coordinate the review and approval of the Terms of Reference and technical specifications for the corresponding contracts;
- Coordinate the work of the other specialists and consultants hired for project implementation;
- Coordinate with the Executive Secretaries of the Regional Participation Committees in regards to obtaining inputs for the AWP/B, planning and implementation of project activities in the regions.

#### Minimal Requirements:

- University degree in Forestry;
- At least 7 years of professional experience in national project and/or management of international cooperation projects;
- Knowledge and experience in results based management, budget design, and execution, preparation of technical and financial reports, and M&E;
- Proven capacity to work with technical and managerial staff of governmental and non-governmental institutions;
- Proven capacity as team leader and team builder in developing countries;
- Excellent oral and written communication skills;
- Experience with GEF Projects is desirable;



Duration: 48 months

Location: Santiago with regular field visits to regions and project intervention areas

Languages: Spanish and English

## **N.2: Draft Terms of Reference: Head of Programme: Regional Participation Committees' Facilitator**

Under the overall coordination of the National Project Director and the direct supervision of the Executive Secretariat Coordinator, the Regional Participation Committees' Facilitator will be responsible for regional level coordination and involvement of local stakeholders in project activities, supporting the Executive Secretariat and Project Executing Partners with technical assistance, supervision and monitoring and evaluation. He/she will coordinate with the project team of specialists and with the FAO Representation in Chile (FAOCHI) in carrying out the following tasks:

- Prepare the annual work plan and budget for the activities that fall under his/her responsibility and contribute to preparation of the project's Annual Work Plan and Budget (AWP/B);
- Prepare periodic reports of the activities developed and contribute to the preparation of the Project Progress Report (PPR);
- Support periodic Monitoring and Evaluation of the project, collecting information related to progress in achieving outcome and output indicators, means of verification and identifying lessons learned;
- Support the establishment of Regional Participation Committees (RPC) in each region (15 in total) by contributing to the identification of regional and local stakeholders (regional and local governments, CSOs, NGOs, private sector, academia) and promoting their engagement through participatory processes.
- Day-to-day coordination and communication with the Executive Secretaries of the RPCs.
- Support the Executive Secretaries of the RPCs in preparing the regional annual work plans and progress reports by facilitating information, procedures and participatory processes.
- Support the organization and implementation of training workshops for RPC members.
- Provide technical inputs on the risks that may arise during project implementation and propose the mitigation measures that may be needed to reduce their impacts.

### Minimal Requirements:

- University degree in Forestry/ Social sciences/Anthropologist or similar
- At least 7 years of professional experience in the field of coordination acting as facilitator.
- Knowledge and experience in promoting institutional development and strengthening by securing deep stakeholders involvement and participation.
- Proven capacity to conduct fieldwork and ability to work in teams and establish working relationships with government institutions and civil society organizations.
- Experience in participatory processes.
- Working experience in regions.
- Excellent oral and written communication skills.

Duration: 48 months

Location: Valdivia with regular field visits to regions and project intervention areas

Languages: Spanish and English

### **N.3: Draft Terms of Reference: Head of Programme: Training**

Under the overall coordination of the National Project Director and the direct supervision of the Executive Secretariat Coordinator, the Head of the Training Programme will be responsible for capacity development of the SIMEF and Project Executing Partners staff in line with capacity development practice<sup>34</sup>, supporting the Executive Secretariat and Project Executing Partners with technical assistance, supervision and monitoring and evaluation. He/she will coordinate with the project team of specialists and with the FAO Representation in Chile (FAOCHI) in carrying out the following tasks:

- Prepare the annual work plan and budget for the activities that fall under his/her responsibility and contribute to preparation of the project's Annual Work Plan and Budget (AWP/B);
- Prepare periodic reports of the activities developed and contribute to the preparation of the Project Progress Report (PPR);
- Support periodic Monitoring and Evaluation of the project, collecting information related to progress in achieving outcome and output indicators, means of verification and identifying lessons learned;
- Conduct a learning needs assessment and on that basis propose the training methodology(ies) to develop the individual capacities of SIMEF and Executing Partners staff to apply an integrated monitoring and assessment system of forest ecosystems.
- Support the organization, implementation and follow-up of training workshops for institutional staff, members of Regional Participation Committees and data collection brigades, preparing training programmes and information and training materials;
- Facilitate knowledge sharing sessions, and learning processes among project staff and national counter-parts and document good practices and lessons.
- Promote technical knowledge on issues relative to Forest Inventory, Forest monitoring, Climate change and Biodiversity.

#### Minimal Requirements:

- University degree in Forestry.
- At least 7 years of professional experience in the field of institutional strengthening and capacity development.
- Knowledge and experience in comprehensive institutional strengthening including conducting a capacity needs assessment, developing strategies to promote capacity development in broad institutional contexts throughout the territory and track results.
- Proven capacity to conduct fieldwork and ability to work in teams and establish working relationships with government institutions and civil society organizations.
- Experience in effective multi-stakeholder learning and training processes.
- Preferably with working experience in the regions.
- Excellent oral and written communication skills.

#### Selection criteria (Optional):

- Extent of familiarity with FAO's renewed approach and strategy on capacity development for more sustainable results [This can be assessed as documents are available publicly)  
<http://www.fao.org/capacitydevelopment/en/>]
- Extent of familiarity with FAO's approach and strategy on Knowledge Sharing and Knowledge Capitalization [This can be assessed as documents are available publicly)  
<http://www.fao.org/knowledge/km-gender/en/>]

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<sup>34</sup>See <http://www.fao.org/capacitydevelopment/en/>

Duration: 48 months

Location: Valdivia with regular field visits to project intervention areas.

Languages: Spanish and English

### **N.3: Draft Terms of Reference: Head of Programme: Outreach**

Under the overall coordination of the National Project Director and the direct supervision of the Executive Secretariat Coordinator, the Head of the Outreach Programme will be responsible for developing the SIMEF outreach strategy, supporting the Executive Secretariat and Project Executing Partners with technical assistance, supervision and monitoring and evaluation. He/she will coordinate with the project team of specialists and with the FAO Representation in Chile (FAOCHI) in carrying out the following tasks:

- Prepare the annual work plan and budget for the activities that fall under his/her responsibility and contribute to preparation of the project's Annual Work Plan and Budget (AWP/B);
- Prepare periodic reports of the activities developed and contribute to the preparation of the Project Progress Report (PPR);
- Support periodic Monitoring and Evaluation of the project, collecting information related to progress in achieving outcome and output indicators, means of verification and identifying lessons learned;
- Conduct a stakeholder assessment to identify and characterize the SIMEF's target audiences.
- Design the outreach strategy including communication and dissemination activities, formats and contents tailored for the different SIMEF information user categories (e.g. government, NGOs, CSOs, private sector). The outreach strategy will take into account gender issues including gender-specific activities and contents.
- Draft Terms of Reference for contracting services under the outreach strategy (e.g. design of information materials, publications).
- Day-to-day coordination and communication with Executive Secretariat personnel and the Executive Secretaries of the RPCs in regards to implementation of the outreach strategy.
- Prepare information materials, user specific reports and support the organization and implementation of dissemination activities and events.
- Track and document the utilization of SIMEF information by user groups as well as the results and impacts of the use of the information, particularly on policies and regulations.
- Systematize project experiences and lessons learned.

#### Minimal Requirements:

- University degree in Communication, Journalist, Psychologist or similar.
- At least 7 years of professional experience in the field of communication.
- Knowledge and experience in design and implementation of dissemination strategies.
- Proven capacity to conduct fieldwork and ability to work in teams and establish working relationships with government institutions and civil society organizations.
- Preferably with working experience in the regions.
- Excellent oral and written communication skills.

Duration: 48 months

Location: Valdivia with regular field visits to project intervention areas.

Languages: Spanish and English

#### **N.4: Draft Terms of Reference: Administrative Assistant**

Under the overall coordination of the National Project Director and the direct supervision of the Executive Secretariat Coordinator, the Administrative Assistant will support the Executive Secretariat Coordinator in the administrative and financial management of the Executive Secretariat. He/she will coordinate with the project team of specialists and with the FAO Representation in Chile (FAOCHI) in carrying out the following tasks:

- Support preparation of the AWP/B.
- Day-to-day management of the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the Coordinator;
- Hold regular meetings with the Executive Secretariat Coordinator regarding management issues and maintain regular contact with the Heads of Programmes on administrative and financial issues.
- Ensure the accurate recording of all data relevant for operational, financial and results-based monitoring;
- Ensure that relevant reports on expenditures, forecasts, progress against work plans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required;
- Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements;
- Draft correspondence related to administrative and financial issues.
- Support the Coordinator in the organization of the mid-term and final evaluations, and provide inputs regarding project budgetary matters;
- Undertake any other duties as required.

##### Minimal Requirements:

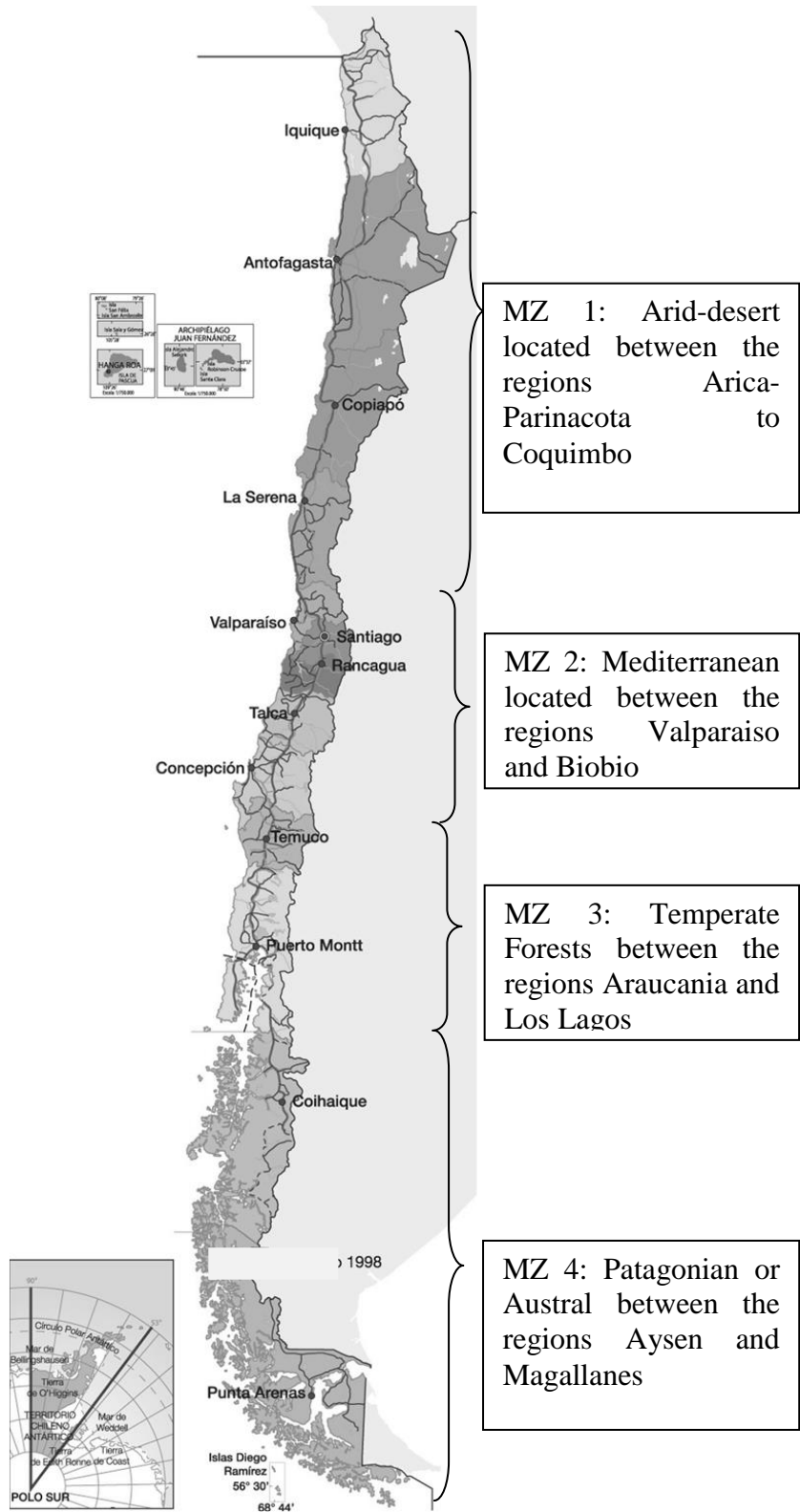
- University degree in Accounting.
- At least 7 years of professional experience in the field of project administration and accounting;
- Knowledge and experience in project administrative and financial management;
- Acquaintance with FAO's project management systems is desirable;
- Ability to work in teams;
- Computer skills;
- Excellent oral and written communication skills.

Duration: 48 months

Location: Valdivia with regular field visits to project intervention areas.

Languages: Spanish and English

## APPENDIX 7: MAP OF CHILE AND MACROZONES



## APPENDIX 8: ENVIRONMENTAL AND SOCIAL REVIEW FORM

**PROJECT NAME:** *Integrated national Monitoring and assessment System on Forest Ecosystems (SIMEF) in support of policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.*

**Project description:**

The project is a multifocal area project consistent with the GEF strategies for Climatic Change objective 5 (CCM-5), Biodiversity objective 2 (BD-2), and Sustainable Forest management/REDD+ objective 2 (SFM-2) by focusing on establishing an Integrated Forest Ecosystem Monitoring System (SIMEF for its abbreviation in Spanish) providing periodic updated information on the state of forest ecosystems the related biodiversity and carbon stocks and fluxes for improved SFM policies and regulations and land-use planning at state and local levels.

In relation to the alignment with BD-2 the project will support the implementation of a periodic monitoring of the state of global important biodiversity in forest ecosystems and the use of this information for improved SFM policies and regulations incorporating the conservation of forest ecosystem services and biodiversity in the forestry sector and sectors impacting on forest ecosystems such as the energy sector as well as the systematic incorporation of the valuation of forest biodiversity in land-use planning at the regional and local managed landscape level.

In relation to the project's consistency with objective CCM-5 the project will support the addition of a carbon monitoring component to the national forest inventory as part of the establishment of the SIMEF which will support the enhancement of carbon stocks in land-use planning and forest and non-forest management practices. The periodic carbon monitoring as part of the SIMEF will serve as an important feedback to decision-makers on the effectiveness of such planning and management practices in relation to increased carbon stocks and if any corrections in approaches needs to be taken.

In relation to objective SFM/REDD+-2 the project will support the development of capacities of institutions related to forestry (CIREN, CONAF, INFOR) in carbon monitoring in the different forest ecosystems in Chile including carbon stored in trees above ground and below ground an understory and understory living biomass and eventual also in dead mass of litter, woody debris and soil organic matter depending on considerations of cost-effectiveness of the carbon monitoring system to be assessed during full project preparation. The effectiveness of SFM/REDD+ policies and practices in terms of avoiding emissions from deforestation and forest degradation and increasing carbon stocks will be periodically monitored. The development and implementation of the SIMEF will be specifically tailored to provide the basis for establishment of Measurement, Reporting and Verification (MRV) systems and TA will be provided to develop capacities in utilizing the SIMEF information for certifying forest derived carbon credits.

As a whole, the project will support the capacities of the public sector institutions related to promoting biodiversity conservation and sustainability of forest ecosystem services in Chile based on systematic generated and timely information on key biodiversity, carbon, land-use-change and socioeconomic indicators.

**Main objective:** To develop, and implement an Integrated Forest Monitoring and Assessment System on carbon stocks and biodiversity in Forest Ecosystems (SIMEF for its Spanish abbreviation) supporting the National Greenhouse Gases Inventory and the development of



policies, regulations and SFM practices incorporating REDD+ and biodiversity conservation in forest ecosystems.


Three components will be developed:

1. Development of institutional coordination framework and capacities for the implementation of the SIMEF
2. Implementation of SIMEF
3. Application of the information generated by SIMEF in local, regional, and national policies and regulations

**CERTIFICATION**

Project Category C	Yes	No
I affirm that I have performed an environmental review of this project and certify that the project conforms to the pre-approved list of projects excluded from environmental assessment and that the project will have minimal or no adverse environmental or social impacts. No further analysis is required.	x	

Title, name and signature of project leader:

Signature:   
 Name: Hivy Ortiz Chour  
 Title: Forestry Officer

Date: *June 1st 2014*

## **APPENDIX 9: GEF TRACKING TOOLS**

(attached excel files)

## APPENDIX 10: EX-ACT ESTIMATIONS OF PROJECT CARBON BENEFITS



Microsoft Office  
Excel 97-2003 Worksl