PROJECT IDENTIFICATION FORM (PIF)
PROJECT TYPE: FULL-SIZED PROJECT
TYPE OF TRUST FUND: GEF TRUST FUND

PART I: PROJECT IDENTIFICATION

Project Title:	**Establish a Network of National Important Agricultural Heritage Sites (NIAHS)**		
Country(ies):	Chile	GEF Project ID:[1]	9068
GEF Agency(ies):	FAO	GEF Agency Project ID:	635610
Other Executing Partner(s):	Ministerio de Agricultura de Chile (ODEPA-INDAP)	Submission Date:	10/09/2015
GEF Focal Area(s):	Biodiversity	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of parent program:	[if applicable]	Agency Fee ($)	289,403

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	**Trust Fund**	**(in $)**	
		GEF Project Financing	**Co-financing**
BD3: Sustainably Use of Biodiversity *Program 7 Securing Agriculture's Future: Sustainable Use of Plant and Animal Genetic Resources*	GEFTF	2,175,962	17,335,000
BD4: Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes/Seascapes and Sectors *Program 9: Managing the Human-Biodiversity Interface*	GEFTF	870,385	4,335,000
Total Project Cost		***3,046,347***	***21,670,000***

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Conservation of agrobiodiversity in Chile through the establishment of Nationally Important Agricultural Heritage Sites (NIAHS) in the Araucania Pewenche and Alto-Andino macro-zones, through the application of a GIAHS[3] approach in a manner consistent with national and local development plans and the provision of local, national and global environmental benefits.

Project Components	**Financing Type**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Co-financing**
1. Conservation and sustainable use of agro-biodiversity, its associated cultural and ancestral knowledge, and the goods and services it provides.	INV	**1.1.** Globally important agro-biodiversity, its associated cultural and ancestral knowledge, and the goods and services it provides is conserved through the participatory	**1.1.1.** Management plans with sustainable use guidelines and monitoring and evaluation strategies are defined in a participatory manner for specific agro-biodiversity productive systems and the ecosystems which sustain them, in the selected macro-zones of Araucania Pewenche and Alto-Andino. [See Annex 2 (a)&(b)] for specific crops and location of corresponding municipalities).	GEF TF	1,250,000	12,300,000

[1] Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.
[3] *Globally Important Agricultural Heritage Systems*, concept defined on page 12.

		implementation of a *National System of national and globally Important Agricultural Heritage Sites* (NIAHS) in the Araucania Pewenche and Alto-Andino macro-zones. *<u>Target Indicator</u>: Increased genetic diversity of globally significant cultivated plants and domestic animals that are sustainably used in production systems, including diversity status of target species. (At least ten globally significant traditional or animal breed varieties of global significance in project coverage area to be determined and confirmed during project development).* *<u>Target Indicator</u>: Production landscapes that integrate conservation and sustainable use of biodiversity into management as evidenced by objective data. Direct coverage in hectares of globally significant*	**1.1.2**. Specialized training and technical assistance in culturally and environmentally sustainable agro-biodiversity management practices and uses, and the conservation of the biodiversity in the ecosystems that sustain them, are developed with and delivered to family farmers, community-based producer organizations and indigenous groups, for the effective implementation of management plans by both men and women. **1.1.3.** A Communications Network for nationally important agricultural heritage sites is developed with relevant stakeholder groups (technical counterparts, family farmers, community-based producer organizations and indigenous groups) to exchange management experiences and lessons learned in the application of ancestral productive practices, the cultural knowledge associated with AGBD, and the implementation of GIAHS-based approaches for its conservation. **1.1.4.** An updated on-line information system on national agro-biodiversity, traditional management practices, sustainable uses and associated cultural heritage is developed and established in MINAGRI to be used by all stakeholders.			

		landraces (traditional varieties[4]) where the project is directly intervening = 40,000 hectares. <u>*Target Indicator:*</u> *Management practices employed by the project beneficiaries that integrate biodiversity considerations and the area of coverage of these management practices* (to be determined during project development)				
2. Development and implementation of market-based strategies to support agro-biodiversity conservation, cultural productive know-how and sustainable uses whilst enhancing local rural livelihoods.	TA	**2.1.** The goods and services provided by agro-biodiversity in the two selected macro-zones are valued in terms of their socio-economic contribution, including their benefits to rural livelihoods (nutritional, medicinal, cultural, and economic) in the Araucania Pewenche and Alto-Andino macro-zones. <u>*Target Indicator:*</u> *Diversity status of target species*	**2.1.1.** Valuation methodologies on the goods, services, and of agro-biodiversity in the Araucania Pewenche and Alto-Andino regions is collected and systematized from a variety of sources (studies, analyses, publications, etc.), including information and existing data and remaining gaps. **2.2.1.** Marketing strategies and pilot initiatives for *specific products* with medicinal properties, and/or cultural aspects viable for eco-tourism, etc., are defined and agreed upon with local community producers. **2.2.2.** Training modules in	GEF TF	1,241,030	8,200,000

[4] A traditional variety or landrace is a dynamic population(s) of a cultivated plant or animal that has historical origin, distinct identity and lacks formal crop improvement, as well as often being genetically diverse, locally adapted and associated with traditional farming systems.

		(to be confirmed during project development) **2.2.** Development assistance instruments (i.e. special credits, technical assistance, regional and local commercializati on fairs, farmers label, etc.) for family farmers, community-based producer organizations, and indigenous groups are modified to include incentives for the commercializati on and valuation of agro-biodiversity products. *<u>Target Indicator:</u> Production landscapes which integrate biodiversity conservation and sustainable use into their management is demonstrated by meeting national or international third party certification that incorporates biodiversity considerations.*	marketing, commercialization, and productive value chains, including certification and/or branding standards, are prepared for family farmers, community-based producer organizations and indigenous groups engaged in agro-biodiversity production in the Araucania Pewenche and Alto-Andino regions. **2.2.3.** Alliances and partnerships amongst small-scale producers and potential entrepreneurs have been established and strengthened to develop and market profitable agro-biodiversity based products, based on successful practices and experiences in other GIAHS sites. **2.2.4.** A set of pilot products from the Araucania Pewenche and Alto-Andino macro-zones are successfully commercialized at local, regional, national or international levels and corresponding experiences and lessons learned documented.			
3. Agro-biodiversity conservation principles and valuation considerations are further		**3.1.** National, Regional, Provincial and Municipal plans and programmes integrate GIAHS	**3.1.1.** A capacity building programme and training workshops developed and delivered to MINAGRI-line agencies at national, regional and local levels (INDAP, ODEPA, INFOR, CONAF, SAG, FIA,	GEFTF	190,000	420,000

incorporated into agricultural policy, programmes and planning frameworks.		conservation and sustainable management principles, productive guidelines, and valuation methods for the sustainable use of agro-biodiversity and the traditional and cultural productive practices associated with its conservation. *Target Indicator: the degree to which sector policies and regulatory frameworks incorporate biodiversity considerations and implement the regulations.* *Target Indicator: indirect coverage in hectares of globally significant landraces (traditional varieties)* (to be determined during project development).	CNR, INIA)[5] to facilitate the incorporation and adoption of GIAHS based approaches for agro-biodiversity conservation into their respective operational programmes. **3.1.2.** Regional and local development strategies in Araucania Pewenche and Alto-Andino macro-zones incorporate agro-biodiversity conservation and sustainable use principles in their work-plans and technical assistance programmes. **3.1.3.** Inter-institutional coordination mechanisms (working groups, discussion round-tables, etc.) are established among regional and local institutions (SERNATUR, SERCOTEC, CORFO, PROCHILE, CONADI, GORE[6]) to facilitate programmatic alignment and complementarities.			
4. Monitoring and Evaluation based on the principles of adaptive management, and the delivery of measurable and objectively	TA	**4.1.** Project implementation is supported by a Monitoring and Evaluation strategy based on measurable and verifiable	**4.1.1.** Monitoring and Evaluation strategy developed with relevant stakeholder groups, clearly defining expected results, the expected time-frames for their attainment, and their confirmation by objectively verifiable indicators and means of	GEFTF	220,253	450,000

[5] Ministry of Agriculture - **MINAGRI**, Institute for Agriculture Development –**INDAP**, Agriculture and Livestock Service –**SAG**, National Forest Corporation – **CONAF**, Bureau for Agrarian Policy and Studies - **ODEPA**, National Forest Institute - **INFOR**, Foundation for Agricultural Innovation – **FIA**, National Commission for Irrigation-**CNR**, Institute for Agriculture Research –**INIA**

[6] Tourism National Service -**SERNATUR**, Corporation for Production Promotion -**CORFO**, Technical Cooperation Service - **SERCOTEC**, National Corporation for Indigenous Development -**CONADI**, Regional Government – **GORE**

verifiable results.		results and the principles of adaptive management.	verification. **4.1.2.** Annual work-plans and corresponding budgets are developed on the basis of expected Outcomes and corresponding Outputs and the progress required for their measurable achievement. Progress indicators are defined for each outcome in yearly implementation work-plans. **4.1.3.** Midterm and final evaluations are conducted with the aim of constructively informing and advising project implementation, sustainability considerations, and the application of adaptive measures as needed. **4.1.4.** Project-related best practices and lessons learned are systematized and disseminated for a variety of audiences and stakeholder groups. **4.1.5.** A project website is established, maintained and integrated with the Ministry of Agriculture's institutional website to continually share project-specific experiences, highlight results and progress and facilitate replication processes during the lifetime of the project and beyond.			
Subtotal					2,901,283	21,370,000
			Project Management Cost (PMC)	GEFTF	145,064	300,000
			Total Project Cost		3,046,347	21,670,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
National Government	Instituto de Desarrollo Agropecuario – INDAP, Ministry of Agriculture of Chile	Cash	19,080,000
	Instituto de Desarrollo Agropecuario – INDAP, Ministry of Agriculture of Chile	In kind	2,120,000
FAO	Implementing agency	In kind	200,000
National Government	Oficina de Estudios y Políticas Agrarias - ODEPA	In kind	270,000
Total Co-financing			21,670,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS A)

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee (b)[b)]	Total (c)=a+b
FAO	GEFTF	Chile	BD	(select as applicable)	3,046,347	289,403	3,335,750
Total GEF Resources					**3,046,347**	**289,403**	**3,335,750**

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant Requested? Yes √ No If no, skip item E

PPG AMOUNT REQUESTED BY AGENCY (IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: $150,000					**PPG Agency Fee: $ 14,250**		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in $)		
					PPG (a)	Agency Fee[7] (b)	Total c = a + b
FAO	GEFTF	Chile	BD	(select as applicable)	150,000	14,250	164,250
Total PPG Amount					**150,000**	**14,250**	**164,250**

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*40,000 hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*hectares*
3. Promotion of collective management of trans-boundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*metric tons*
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectorial planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries:*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries:*

[7] PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

PART II: PROJECT JUSTIFICATION

1. PROJECT DESCRIPTION

Relevance of Agro-biodiversity in Chile

1. Chile possesses height gradients from the coast to the mountains and significant climatic gradients along its length, from deserts in the north to Patagonia and Antarctica in the south. The country has subtropical, Mediterranean, sub-Antarctic and Antarctic latitudes creating a wide diversity of habitats and biodiversity coupled with high levels of endemism in fauna and flora (Manzur, 2005; Ministry of Agriculture, 1994) further illustrated by the fact that out of the more than 5,000 vascular plants present in Chile, 45.8% are endemic and 42,7% are native (MINAGRI 2008).

2. With regards to the diversity of crops or agricultural biodiversity (henceforth agro-biodiversity), the privileged Chilean geography has allowed the selection and progressive adaptation of a number of ecotypes, including old varieties adapted to diverse environments and associated with different farming communities and their specific traditional cultural practices. According to Cubillos and Leon (1995), these plant genetic resources constitute a unique bio-cultural wealth, placing Chile in a privileged situation as a Centre of Origin and/or Diversity of important crop species such as potato (*Solanum tuberosum*), maize (*Zea mays*) and bean (*Phaseolus vulgaris*), as well as related wild crop species such as Chilean strawberries (*Fragaria chiloensis*), several species of wild tomatoes (*Solanum chilense, S. peruvianum, S. and S. sitiens*) and several species of Alstroemeria (*Altroemeria sp*), among others (Pertuzé *et al*, 2002 and 2003;. Salazar *et al.*, 2006). With regards to potatoes, today there are 150-220 native varieties in the Archipelago of Chiloé alone (Cárdenas, 2002; Venegas and Negrón, 1994).

3. In Chile there are also wild varieties and traditional crops of fruit, fodder, vegetables and medicinal plants, along with 30 identified traditional crops among which are: Quinoa (*Chenopodium quinoa*), Kanihua (*Chenopodium pallidicaule*), Kiwicha (Amaranthus caudatus), Maiz (*Zea mays*), Madi (*Madia sativa*), Achira (*Canna edulis*), Aji (*Capsicum baccatum*), Rocoto (*Capsicum pubescens*), Zapallo (*Cucurbita máxima*),Pallar (*Phaseolus lunatus*), Poroto (*Phaseolus vulgaris*), Camote (*Ipomoea batata*), Papa (*Solanum tuberosum sp. andigena*), Papa (*Solanum tuberosum sp. tuberosum*), Frutilla silvestre (*Fragaria chiloensis*), Guayabo (*Psidium guayaba*), Lucuma (*Poteria lúcuma*), Papaya (*Carica pubescens*), Pepino dulce (*Solanum muricatum*), Tumbo (*Passiflora mollisima*), Tuna (*Opuntia sp.*) (MINAGRI, 2008). There are also traditional crop varieties that, although introduced, are valuable to preserve, such as oats, barley, lentils, peas, melons, potatoes, tomatoes, wheat, garlic, brome grass, peas, storage squash, sweet potato, cumin and cucumber. In addition, there are agricultural species such as beans, chickpeas, lentils and rice, for which Chilean varieties or breeds constitute genetic groups of interest because of their special features not found in other genetic complexes in the world.

4. Studies equally show a high percentage of Chilean plants used for food, medicine, fuel and fodder. Of the approximate 5,000 species, 13.5% have at least one known use (León and Cubillos, 1997), 30% of plants introduced in Chile have at least one registered use (Cubillos and León, 1995) and a study of the medicinal use of Chilean vascular flora shows that 10.75% have utility as medicinal plants (Massardo and Rozzi, 1996). Although the Chilean flora is unique, possessing a wide variety of potential uses, it is seldom utilized to its maximum potential. In fact, many of the crop species, or wild relatives of social or economic interest have almost never been used in the development or improvement of domesticated cultivars. One agricultural specie is no longer grown: cotton (*Gossypium barbadense*). Meanwhile, mango (*Bromus mango*) has become extinct and not found since the last century (Cubillos and León, 1995).

5. Increasingly, scientific evidence demonstrates that agricultural biodiversity and the cultural ancestral knowledge associated with it is essential to the ecological and socio-economic sustenance of small farming communities, particularly in remote and fragile ecosystems. Agro-biodiversity mitigates environmental risks and provides a source of adaptation to environmental and social changes, including ever increasing climate variability and disruptions. It also provides an important contribution to food consumption, nutritional benefits and health to farming communities. Many native species and varieties contain a latent potential for sustainable economic development in the agricultural sector, which has remained insofar untapped. The evolutionary interaction of ancestral agricultural practices with the surrounding environment and the traditional culture of farming communities, has also contributed to national and agricultural heritage at global levels (*Altieri-Parviz, 2002*). In Chile, indigenous farmers belonging to nine ethnic groups manage as much as 17% of the farming activity. Of these, 91.4% corresponds to the Mapuche ethnic group, and 7.6% to the Aymara, Quechua and Atacama ethnic groups (Odepa/Conadi, 2011). It is equally important to note that indigenous women manage a significant 32% of farming activities.

6. Through the Ministry of Agriculture, the Government of Chile has thus defined key priorities to reinvigorate agricultural policy during the current presidential period (2014-2018). These are:

- Reduce inequality: strengthen and expand development instruments towards family farming, considering the different cultures, ethnicities and traditions and public-private participation;
- Enhance the quality and product differentiation at the core of development competitiveness, providing value added to goods and services;
- Leverage farmer's access to a variety of instruments and incentives for their produce by fostering environmentally, socially and economically sustainable agriculture.

7. Contributing to the definition of these unprecedented priorities is the recently completed 2014 FAO/GEF global project entitled *" Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS)"* (#2127) which provided valuable results and lessons learned that greatly settled and consolidated these priorities. As a result, there is today a programmatic and auspicious complementarity between government development policy in agriculture and the principles expounded by the *Globally Important Agricultural Heritage Systems* (GIAHS) approach. Defined as *"Remarkable land use systems and landscapes, which are rich in globally significant biological diversity evolving from the co-adaptation of a community with its environment and its needs and aspirations for sustainable development"* (FAO 2002), GIAHS principles encourage the maintenance of local production systems of significant biodiversity, which are resilient, sustainably and socially fair but which also highlight the unique cultural and traditional approaches that have made them possible.

8. In this regard it is important to note that the GIAHS principles were put to the test in the ***Chiloé archipelago,*** selected as one of the global heritage systems site of the global project, when the Ministry of Agriculture together with the Regional Government and civil society organisations managed to strengthen the value and conservation of traditional production systems of different potato varieties by: (i) establishing a *GIAHS-Chiloé Brand* to market products inside and outside the Archipelago; (ii) strengthening the capacity of producer associations to increase their agrobiodiversity, market their products, offer low impact agro-ethno-tourist services and marketing; and (iii) integrating the GIAHS concept into various educational levels to incorporate the concepts of agro-cultural identity and ecological conservation principles into land management.

9. Through the "Node-GIAHS" project (financed by CORFO from the Ministry of Economy), the Centre for Education and Technology in collaboration with local, regional and national stakeholders keeps improving and promoting the *GIAHS-Chiloé* brand. This territorial brand, which permits differentiating goods and services from rural communities applying the GIAHS criteria, recognises and promotes through its branding: agro-ecological practices based on traditional sustainable productive practices, organic agriculture, sustainable forestry management, and the resulting conservation of agro-biodiversity and its associated cultural heritage. The GIAHS Chiloé certification seal, distinguishing products from the forestry, farming and cattle sector as well as handcrafts has, since its application, strengthened the local economy, revitalized cultural identity, all whilst having a positive impact on tourism and gastronomy. For instance, potatoes with Chiloé seal are currently found in the main supermarket chains in Chile's capital city. Also, chilota potatoes are used by a national company which designed a "gourmet snack" product line based on traditional products.

10. Although the Chile pilot country component of the global project was equivalent to a small medium-size project with an operational budget of approximately USD 583,000 spanning the course of five years, it was highly successful in: (i) showcasing on a small scale the valuation and integration of traditional farming systems in public policies; (ii) the development of enabling instruments and incentives for the safeguarding of cultural knowledge and agro-ecological principles; (iii) the development of public-private partnerships for the promotion of these agro-biodiversity based goods and services; (iv) raising national awareness to fully recognise the wide ranging ecosystem services agro-biodiversity generates and the fundamental role it plays not only in the conservation of global biodiversity, but also in the maintenance of traditional cultural know-know whose intrinsic value is immeasurable.

11. While constituting a micro-model, the experience in Chiloé has generated valuable lessons on institutional cooperation, the empowerment of local actors and raising national awareness regarding the conservation, environmental, and cultural heritage elements imbedded in National Agricultural Heritage Sites. Because of these promising results, in the last Regional FAO Conference, Chile's President highlighted the strategic contribution of the

GIAHS Initiative to food security and the preservation of invaluable agricultural cultural heritage and ancestral knowledge. The Minister of Agriculture expressed the government's priority to further and expand the achievements[8] in the Archipelago of Chiloe Pilot (a GIAHS site recognized by FAO in 2008) to other areas of the country, where agro-biodiversity is also at risk and in which the GIAHS approach could provide the solution to its conservation and sustainable use, in consistency with Chile's own national agricultural and development priorities. The present concept was thus put forward by the Ministry of Agriculture through the *Oficina de Estudios y Políticas Agrarias* (**ODEPA**) and the *Institute of Agricultural Development* (**INDAP**), with a view to create a system of *National Important Agricultural Heritage Sites (NIAHS)*, to promote the conservation, sustainable use and development of sites internationally recognised for their value as centres of origin, the distinctive evolutionary processes they have promoted, and the unique genetic repositories they have become.

Brief description of the selected sites for the project: ***Araucania Pwenche*** *and* ***Alto-Andino***

12. The project sites or "*macro-zones*" were thoroughly discussed and selected on the basis of the following criteria: **(i)** ample presence of rich biodiversity and varied productive landscapes; **(ii)** significant agro-biodiversity in the form of traditional crops or animal varieties; **(iii)** presence of protected areas or conservation zones adjacent to productive landscapes fostering genetic exchanges between domesticated landraces and wild relatives; **(iv)** designated indigenous areas favouring the maintenance of traditional productive practices; **(v)** existence of a supportive programmatic baseline with a robust degree of alignment with project objectives, enabling the fulfilment of project goals; **(vi)** a sufficiently ample territorial coverage to address agro-biodiversity conservation needs, delivering benefits at scale and the intended replication at national levels, and (vii) demonstrated strong local support for project objectives based on preliminary and on-going consultations.

13. The ***Alto-Andino macro zone*** covers 57,211 sq km, with a population of 19,826 people and is comprised of five communes, namely, *General Lagos y Putre* (in the regions[9] of Arica and Parinacota); *Pica, Huara and Colchane* in the region of Tarapaca, and *San Pedro de Atacama* in the region of Antofagasta. 50% of the population in this macro-zone is Aymara residing in the four Indigenous lands/territories established under the Chilean Indigenous Law. This area also contains the Lauca Biosphere Reserve[10], and three protected areas part of the National System of Protected Areas, namely the Parque Nacional Lauca, the Reserva Nacional Las Vicuñas and the Monumento Natural Salar de Surire, all located in the Comune of Putre.

14. Three predominant and distinctive agro-productive systems prevail in this macro-zone, the rearing of camelids (llamas and Alpacas) and sheep all of which rely on "bofedales" (a type of high Andean wetland/peatland[11]). The cultivation of quinoa, as the nutritional basis of the Aymaras, as well as the cultivation of a diversity of spices and traditional crops such as potatoes and maize, all produced under traditional productive systems such as terracing in valleys and slopes. Annex 2 (a) provides a list of the species and corresponding productive systems in this macro-zone. Annex 1 details the programming baseline currently operating in the area, which will form the basis of the proposed project, and in the future attest to its sustainability.

15. The ***Araucania Pewenche macro-zone*** covers 8,317 sq kms and is comprised of the communes of *Alto Biobio*, in the BioBio region and the communes of *Lonquimay, Melipeuco y Curarrehue* in the region of La Araucanía, and a corresponding population of 29,676 inhabitants, 71% are rural and 50% are Mapuches. Within this macro-zone is the

[8] As per the final evaluation, a summary of the results: a) high local endorsement and awareness raised on the cultural and ancestral agricultural values of Chiloe produce; b) local ordinances to establish the whole of the Chiloe Archipelago as a GIAHS site; c) introduction of a GIAHS label for 23 products and tourists services from Chiloe; d) creation of a local germ plasm bank in Chiloe; e) high level national government commitment to linking biological and cultural diversity in policy-making exemplified with the establishment of an Environmental Department within INDAP to study the country's agro-biodiversity interests; f) the creation of a national statute to allow the Institute of Industrial Property Rights (INAPI) to recognize and operate a GIAHS certification label for Chiloe products; g) measurable capacity building for mainstreaming and formally embracing GIAHS approaches into agricultural policy to value cultural diversity and the flow of ecosystem services from agro-ecological landscapes; and last but not least, h) the establishment of appropriate stakeholder set ups in Chiloe, bringing together state and non-government institutions, including private sector actors engaged in supporting local farmers in collaborative management and promotion of GIAHS based approaches.

[9] Chile is divided into 15 regions, which are the country's first-level administrative division. Regions are divided into provinces (second-level administrative division). Provinces are further divided into communes (third and lowest level administrative division), which are governed by municipalities.

[10] UNESCO. Revised 12.06.2015 en: http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/latin-america-and-the-caribbean/

[11] Squeo, Francisco A., et al. "Bofedales: high altitude peatlands of the central Andes." Revista Chilena de Historia Natural 79.2 (2006)

Biosphere Reserve of Araucanias[12], the National Park of Conguillio, the National Reserve of Nalcas, the National Reserve of the Alto Biobio, and the National Reserve of Ralco, all belonging to the National System of Protected Areas. Similarly to the Alto-Andino macro-zone, Arauncania Pewenche also contains indigenous lands "Alto Biobio" in which 5,362 indigenous Mapuches live in an area covering 54,359 ha.

16. The principal traditional livelihood of the Pewenches is livestock rearing managed through ancestral practices involving rotation and displacements between highlands and valleys along the Andean "Cordillera", complemented with the recollection of non-timber forests products from native forests, such as the "piñon", among others which forms the basis of the Mapuche diet. Annex 2 (b) provides a list of the species and corresponding productive systems in this macro-zone. Annex 1, a listing of baseline initiatives equally supportive of project objectives, essential to their fulfilment and subsequent sustainability.

a. Global environmental problems, root causes and barriers that need to be addressed

17. The National Biodiversity Strategy of 2003, currently being updated specifies the following: "The country has an environmental liability, which has increased the vulnerability of ecosystems and species of flora and fauna. A significant amount of soil is eroded due to unsustainable practices (**33.5% of soils suitable for agriculture**); there is a shortage of water resources to provide environmental flows (from Region VII to the north) and today, there is also a significant level of water pollution due to environmental externalities generated by production processes in rural areas, such as agriculture, agribusiness, aquaculture, and mining."

18. Efforts to conserve agro-biodiversity in-situ, in agricultural, livestock and forestry areas in continental Chile, which extends over 46% of the land area approximately, have not been enough. The most productive areas of the country correspond to large-scale agriculture and forestry management, characterized by low crop diversity and the intensive use of agrochemicals. National government sponsored development instruments have contributed to the transformation of the agriculture, livestock and forestry sectors, which have been primarily oriented towards increasing productivity and profitability, irrespective of the values and ecosystem services they might affect in the process, or the potential direct threats they entail for biodiversity, soil and other natural resources. Furthermore, with regards to the use and maintenance of traditional crops[13], there is no systematic and/or regularly updated data regarding their corresponding levels of genetic erosion, which can directly inform and impact decision-making processes and policy development in agriculture and other relevant resource related sectors.

19. Today, it is estimated that the majority of Chilean farmers (71.6%) use modern[14] improved varieties with only 10.9% recorded as using traditional varieties (Cubillos and León, 1995). Overall, the amount of crop diversity per unit of arable land has decreased and croplands have shown a tendency toward concentration. As in most cases, political and economic variables influence the trend to devote large areas to monoculture due to economies of scale and the ability of national agriculture systems to perform competitively in international markets. The rate of replacement of traditional varieties with modern cultivars is significant and unfortunately in many cases, irreversible. In some crops such as oats, barley, lentils, potatoes, tomatoes and wheat, among others, traditional varieties have been virtually replaced by improved varieties (Cubillos and León, 1995). In addition, the production systems associated with these modernized systems are increasingly separated from agro-ecological considerations and as such progressively showing signs of environmental degradation.

20. With more commercially competitive crop varieties available, one of the main causes of loss of plant genetic resources in Chile is underutilization. As mentioned, family farmers are turning to more commercially viable varieties, thus engaging less and less in preserving their traditional genetic stock and therefore inadvertently devaluing the diversity of the existing plant genetic resource base (Cubillos and León, 1995). Exacerbating this situation is the fact that farmers have less access to seeds of traditional varieties, unavailable in conventional markets, forcing them to buy modern varieties, usually imported and generally ill suited to local growing conditions. Underutilization inevitably leads to losses of traditional crops but equally to the loss of the sustainable practices these crops are produced under, which in turn affects the sustainability of natural resources in the productive landscape. This progressive abandonment

[12] UNESCO, 2015. Revised el 26.06.2015 en http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/latin-america-and-the-caribbean/chile/araucarias/

[13] According to the Study on juridical-regulatory protection alternatives and of other nature for seeds and traditional practices, ODEPA.

[14] According to FAO, "modern" refers to the genetic improvements achieved through the use of modern technology as opposed to varieties resulting from evolutionary processes and improvement by farmers over many generations and thousands of years. (Crop variety Improvements and its Effects on Productivity, FAO).

of traditional varieties inevitably leads to the eventual loss of germplasm, which translates into the country loosing its strategic agricultural advantage and its ability to adapt to the effects of climate change by virtue of no longer having the varieties adapted to a multiplicity of adverse and/or extreme conditions (Manzur, 2005).

The **barriers affecting the conservation and sustainable use of agro-biodiversity in Chile**, can be summarized as follows:

a) **Limited awareness regarding the agricultural, cultural, medicinal, nutritional, socio-economic and development potential of agro-biodiversity and the ecosystems that sustain it**. While a number of well-prepared and reliable studies exist in relation to Chile's agro-biodiversity, they have not been effectively systematized nor effectually disseminated to raise the necessary consciousness (especially amongst younger generations) of the cultural and agricultural capital they possess and the inherent wealth it constitutes in terms of food security, adaptive potential, genetic resources, and rural development opportunities.

b) **The absence of sustainable use and management guidelines for agro-biodiversity productive systems and the ecosystems** in which they originate have hindered their effective management and their recognition as Agriculturally Heritage Sites. In this regard, **the lack of protocols** pertaining to productive uses, compendiums of traditional management practices, and their corresponding dissemination and promotion among local producers have impeded the application of these practices in productive agro-biodiversity rich productive landscapes.

c) **At government levels (national, regional, local), the absence of objective, reliable and methodically updated data regarding agro-biodiversity (traditional crops and/or livestock) and the corresponding agro-productive ecosystems** that sustain it have prevented the development of integrated strategies and sectoral plans designed to conserve and manage - in a cohesive and integrated manner - these unique productive landscapes and the agro-biodiversity they harbour. Regarding genetic erosion, there is an absence of objective, reliable and methodically updated data regarding the levels of on-going genetic erosion. Without reliable and regularly updated information systems, dependable data cannot inform policy formulation, development plans, agricultural assistance programmes, extension work, or any of the tools and development instruments currently operating at provincial and rural levels.

d) **Existing programmes and instruments for agricultural and rural development remain largely based on conventional standards without valuation of the environmental goods and services emanating from agro-biodiversity and their related sustainable production systems.** Development tools have remained largely conventional tending to focus on competitiveness and profitability rather than the value of agricultural biodiversity and its relationship to local and cultural heritage. Agro-biodiversity, and its associated wealth in terms of ancestral productive knowledge has thus been neglected in favour of monoculture farming systems (export fruit culture, national and international agro-industry, large-scale grain production, intensive livestock breeding, forest plantations, etc.) Except for a few areas with the presence of indigenous communities, programmes designed to empower local communities in the development of strategies for family farming and economic development based on agricultural heritage considerations are weak, or simply non-existent. Supportive agricultural policies remain largely incipient, as is the provision of technical assistance for enhanced agro-biodiversity management.

e) **Initiatives designed to highlight and galvanize support for agro-biodiversity commercial ventures are scarce**, which in turn affect local promotion and interest for its conservation and sustainable use. Agro-biodiversity based alternatives, supported by branding, certification or instruments testifying the origin and productive practices of a given product are scarcely offered or not sufficiently contemplated as viable and/or lucrative commercial alternatives.

f) **Almost no mechanisms exist for exchanging information and/or positive experiences among family farmers and indigenous groups regarding the conservation and sustainable management of agro-biodiversity**, thereby significantly minimizing the opportunities to emphasize the valuation of the environmental goods and services stemming from agriculturally diverse production systems and their significance and contributions on multiple levels.

g) **Marketing and commercialization strategies, as viable alternatives for the promotion of agro-biodiversity goods and services, are still incipient and not fully recognized as feasible strategic approaches to rural development**. Furthermore, no instruments or forums exist for promoting alliances and partnerships amongst

small-scale producers and potential entrepreneurs (public-private ventures) to facilitate the commercialization and marketing possibilities for agro-biodiversity based products.

h) **Technical support in the form of capacity building, incentive systems, policy reform, commercialization and local added value chains, information consolidation and dissemination, as well as awareness raising, to name a few, are still needed** to effectively set in place a System of Nationally Important Agricultural Heritage Sites (NIAHS) able to promote and nurture the traditional ancestral know-how and agro-ecological principles associated with agro-biodiversity.

21. While the two selected macro-zones contain and reflect a diversity of traditional species and the traditional ancestral systems that have sustained them, they are both increasingly pressured and threatened by the challenges and barriers enunciated above. They are however equally receptive to the necessary support to maintain and safeguard their unique agro-ecological attributes and the traditional cultural heritage they uphold.

b. Baseline scenario and other associated baseline projects

22. In spite of the barriers affecting the conservation of agro-biodiversity in Chile, the project relies on a significant programming baseline, supportive of project objectives and fundamental to their effective delivery. Below, is a brief description of the most relevant programmes, including a table detailing the corresponding co-financing amounts per *macro-zone* and the direct number of beneficiary families estimated for the life of the project [see Annex 1 and Table (a) respectively].

23. While a host of institutions will actively collaborate with the project in its forthcoming development and implementation, the lead institutional partner and co-financier for this initiative is the *Ministry of Agriculture* through its *Institute for Agricultural Development* (**INDAP**). The ***Institute for Agricultural Development*** has a considerable national portfolio of programmes and initiatives, generally spanning an implementation horizon of 10 to 15 years, and a corresponding sizeable operational budget. The ***Institute for Agricultural Development***, as its title indicates, is mandated to provide support for family farmers through a platform of 22 "investment lines of action" or assistance priorities, which substantively address three main areas: (i) capacity building; (ii) capital financing, and (iii) investment financing. Through these priority action lines, **INDAP** has supported in 2014 alone 9,190 heads of households, representing an average of at least 3 family members and corresponding to an approximate total number of direct beneficiaries of 27.000 people, as detailed Table A. These numbers reflect the largest concentration of users, which incidentally reside in one of the project's two macro zones, namely the Araucanía Pewenche region, which concentrates 82% of farmers and indigenous people within its territory.

24. It is important to note that there is a significant programmatic complementarity between INDAP's development objectives and those associated with the GIAHS initiative. Both promote a landscape- wide ecosystem approach, direct support to prioritized actions by native local communities, the important role of womenfolk and youth, as well as an emphasis on environmental conservation and sustainable resource use. In addition, both initiatives also share supportive measures for the social organization and collective productive frameworks prevalent in these agro-ecologically and culturally significant sites. Equally, both INDAP and the GIAHS approach acknowledge and promote a holistic model and strategy for the conservation of natural resources in the productive landscape in which the sustainable management of water, forest and soil resources are fundamental to the preservation of agro-biodiversity resources.

25. In addition, INDAP's extension work at local levels, by virtue of its emphasis on participation, is specifically tailored and progressively adjusted to individual or community based structures and social conditions and evolving development needs (depending on the area and group in question). This inherent flexibility allows INDAP operations to functionally integrate new and complementary approaches - such as those promoted by the current project - to its on-going "development & assistance programmes". In this regard, each of the 22 instruments, or "lines of assistance" currently in place by INDAP at local levels in the selected project macro-zones will be substantively amended and modified to fully incorporate the requirements and corresponding assistance and inputs needed for the establishment of the proposed NIAHS model in the selected macro-zones.

26. ***I. Programme for Local development*** **(PRODESAL).** PRODESAL is among INDAP's principal programmes. Its

main objective is to support small farmers[15] and their families in the development of sustainable agricultural activities by strengthening their production systems, increasing their income, and improving their quality of life. PRODESAL is implemented directly through municipalities to which INDAP transfers resources by means of detailed cooperation agreements. Resources are used to hire locally based technical teams that deliver ongoing technical support to farmers (organized in operating units of 60 to180 farmers) participating in the programme.

27. **PRODESAL** works in 10 to 15 year operational cycles and is present in most of the regions of Chile, including all the communities/municipalities included in the project as shown in Annex 1. These communities are comprised of 3,064 families (out of the 9,190 families from table A) supported by a group of approximately 78 professionals all of which will also become recipients of the training and workshops to be delivered by the proposed project. PRODESAL is the principle baseline programme in the selected project areas in terms of affected beneficiaries and the second largest in terms of investment, even without considering the special Emergency funds earmarked in case of natural/climatic disasters. The services provided to users by PRODESAL include: (i) individual and/or communal technical advice in the priority areas identified by each community/municipality; (ii) co-financing covering up to 90% of the total value of proposed initiatives; (iii) joint or complementary financial support from INDAP and other institutions participating in public-private development networks; and (iv) Municipal contributions including funding for specialized consulting, training, tours and workshops, among others.

28. ***What is missing from PRODESAL operations however are agro-biodiversity conservation considerations, both in conceptual and operational terms.*** Agricultural support as presently conducted follows a more conventional approach in promoting rural development, based on the inclusion of rural farm families and indigenous people through the improvement of their productive capacities, their effective insertion into conventional markets, collaborative networking, and accessible credit modalities, among others. ***Through the proposed project however, agro-biodiversity conservation and sustainable use objectives will be mainstreamed at national level into the operational plans of INDAP, both substantively and financially, and by extension to those of their development assistance programmes at local levels.*** The proposed agro-biodiversity overlay would permeate the variety of incentive measures and development assistance instruments currently utilized by both of these programmes, and other INDAP activities, so that they are adjusted to include these additional and complementary agro-biodiversity related conservation principles. The corresponding co-financing associated with this incremental support is calculated at USD 7,401,671 for the life of the project.

29. PRODESAL along with the ***The Programme for Indigenous Territorial Development*** (PDTI) described below, are the principal baseline operations for this project without which its agro-biodiversity conservation objectives could not materialize. Both programmes, PRODESAL and PDTI operate in all the designated project sites, with a permanent local presence consisting of professional and highly specialized technical teams, responsible for providing a menu of agro-related technical assistance to beneficiary families, including credit, grants for soil recovery activities, water conservation initiatives and sustainable production techniques to name a few.

30. **II. *The Programme for Indigenous Territorial Development* (PDTI)** is INDAP's strategic programme designed to exclusively support indigenous agricultural families. It is the second largest in national coverage after PRODESAL, and *fully* includes all the areas selected for the project, which contain a total of 2,797 producer families (out of the 9,190 from table A). Specifically, the programme is geared to support small-scale indigenous producers, indigenous cooperatives, and individual families in their agricultural productivity and livelihoods whilst remaining consistent and supportive of their indigenous practices and beliefs. This programme is consistent with Law N° 19.253 which established **CONADI** (*the National Corporation for the Development of Indigenous Groups*) as well as the corresponding regulatory frameworks for the conservation of the cultural heritage associated with these indigenous communities. The PDTI programme is also implemented via Municipalities, which directly receive allocated resources via specific contractual arrangements, for the hiring of specialized technical teams entrusted with the provision of permanent technical support to family farmers, also organized in family units of 60 to 80 people.

31. In addition, ***The Programme for Indigenous Territorial Development*** **(PDTI)** also provides resources for capital investment and labour. INDAP's technical teams work with each farmer family to prepare individualized work plans depending on their productive requirements including: **(i)** technical assistance; **(ii)** co-financing for investment projects, covering up to 95% of investment costs; and **(iii)** leveraging resources and/or technical support from other groups and/or public-private institutions. In the case of the proposed project, the PDTI programme is active in all the

[15] In Chile, small farmer is someone (i) exploits a surface area less than or equal to 12 hectares of basic irrigation, regardless of their tenure regime, (ii) whose assets must not exceed the 3,500 U.F, (iii) their income should mainly come from farming. http://www.indap.gob.cl/como-puedo-acceder-los-servicios-de-indap

selected NIAHS sites. ***In support of project activities the programme will be modified to incorporate agro-biodiversity conservation activities and agro-ecological principles, including the application of any guidelines, and/or productive practices the project itself will be generating.*** Aligning and adjusting its operational programme to the requirements and goals of the project will be a priority for the **PDTI** programme, including ensuring the required training in agro-ecological and agro-biodiversity principles for its extension staff in each of the selected project sites. The corresponding co-financing associated with this incremental support is calculated at USD 8,638,306 for the life of the project.

32. **III. The** ***Technical Assistance Services and Extension support*** **(SAT)** is specifically geared towards small-scale producers whose livelihoods and productive strategies rely entirely on their effective insertion into Chile's diverse and competitive commercial chains. In this regard these small-scale producers compete with all others and the corresponding demands of a highly organized albeit complex marketplace. Support and technical assistance is provided to these producers so that they may gain the experience, skills, and competencies required in any successful market-place venture. Currently however, services provided by SAT reflect the requirements of a conventional marketplace and the demands of conventional production. ***Through this project, they will be adjusted to include the training and required know-how related to the commercialization of agro-biodiversity products, including branding, certification, proof of origin standards, and a suite of demonstrable productive practices related to ancestral knowledge, cultural heritage and sustainability considerations.*** This incremental assistance is calculated for the project at USD 304,468.

33. **IV.** ***Programme of Productive Alliances and the development of commercial chains.*** The fundamental objective of this programme is to generate a series of productive and market-based alliances between: **(i)** small-scale producers and large-scale operators whose competitive standing and breath of operations includes both national and international markets, and **(ii)** establish contacts (working relationships or partnerships" between local producers and the larger industries related to and/or working with agricultural or a larger, industrial scales). The ***Programme of Productive Alliances and the development of commercial chains*** currently provides the technical know-how for these small-scale producers/operators to deliver products aligned and consistent with the specificities and quality standards of larger markets and consumer demand. This assistance is invaluable and ensures the desired links and consolidation between small-scale producers and the larger wholesale entrepreneurs, who buy their produce and thereby sustain and guarantee their livelihoods. In its current form, this programme is designed and tailored for small-scale producers, service providers, and/or small to medium scale entrepreneurs involved in conventional productive and commercialization chains. ***With the incremental support of the proposed project, this programme would be substantially revised to incorporate a new set of partnerships and actors dealing with specialized agro-biodiversity based markets and discriminating consumer niches seeking organic, highly nutritious and environmentally-friendly produce, including the corresponding expertise to effectively enter this specialized market on a competitive standing.*** The corresponding co-financing associated with this incremental support is calculated at USD 87,944 for the life of the project.

34. **V.** ***The Programme for Irrigation's*** objective is to co-finance investments in irrigation systems for the benefit of small landowners and small-scale producers in rural areas, incorporating new technologies in water use efficiency. The programme provides a series of incentives and corresponding training modules - totalling up to 90% of total costs - for initiatives and infra-structural developments designed to mitigate and lessen water contamination. ***With the proposed project, the water irrigation programme would be adapted to include amongst its priority stakeholder groups those farmers and small-scale producers involved in GIAHS/NIAHS related activities and the overall conservation of agro-biodiversity.*** Additional resources to adjust the existing baseline are calculated at US 1,059,649 for the life of the project.

35. **VI.** ***The Incentive Systems for the recovery of degraded lands*** **(SIRSD)** programme's principal objective is to recover the productive potential of degraded agricultural soils and maintain their productive capacities over the long term. The programme is based on the provision of financial assistance to co-finance activities pertaining to: preventive soil erosion measures, and soil management strategies, including the application of sustainable productive practices. Financial resources typically cover between 50 to 90% of total costs of soil conservation measures including: **(i)** application (incorporation into the soil) of phosphate based fertilizers to recover and maintain the natural phosphorus fertility of soils; **(ii)** application of essential chemicals to correct excessive soil acidity or salinity, as well as the deficiency of chemical elements such as sulfur, potassium, calcium, magnesium, boron and zinc; **(iii)** establishment of vegetative cover on bare soils or soils with degraded cover to stimulate the regeneration of a permanent vegetative cover, as well as safeguarding and maintaining recovered levels; **(iv)** use of methods aimed at avoiding soil loss and erosion, favouring its conservation, and **(v)** elimination, cleanup or confinement of physical and chemical impediments. At present, stumps, dead trunks, and shrubs with no forage value, or other physical or chemical hindrances, which affect soil productivity, frequently impede the optimal use of soils. This programme seeks to foster

the utilization of sustainable protocols to conserve and/or recover farm soils.

36. ***The proposed project will seek to affect and contribute to these soil conservation programmes by promoting and exemplifying traditional soil management techniques applied in agricultural heritage systems and modeled in selected NIAHS sites.*** In this regard, a menu of sustainable soil management practices associated with agro-biodiversity and agro-ecological principles would be included amongst the priority initiatives to receive financial resources as part of the *Soil Conservation Incentives Programme.* Available resources for this programme, considering the complementary support agro-biodiversity specific activities would entail, totals USD 1,552,198 for the life of the project.

37. **VII.** ***The Incentive programme for grasslands and foraging resources'*** central objective is to foster the establishment and maintenance of grasslands and/or fodder resources for family farmers for which livestock rearing is their principal source of income. The programme consists of providing 80% of costs associated with inputs, labour requirements, and assistance for the establishment of supplementary grasslands and a reliable and steady source of fodder. ***This proposed project would customize the existing programme with project activities that would prioritize resource allocations to the NIAHS sites chosen by the project and in which farmers are applying NIAHS consistent practices consistent with agro-biodiversity conservation.*** The resources associated with this programme for the life of the project are USD 918,836.

38. **VIII.** ***Financial support programme for individual farmers*** provides short, medium and long-term credit in accordance with corresponding initiatives and farmer/producer needs *(access to financial assistance)*. Short-term credits are flexible in terms of their payment modalities offering a range of possibilities for payment in accordance with producers' returns and productive performance. Long-term credits are for a maximum of 10 years with equally flexible and adjustable payment modalities. None however are currently favouring or including agro-biodiversity conservation credits/loans as part of their preferential portfolio. ***With project support, special credits with favourable conditions and built-in incentives would be established for NIAHS related activities supportive of agro-biodiversity conservation and sustainable use goals.*** Resources earmarked for this programme ascend to USD 891,655 for the life of the project.

39. Beyond INDAP's support programmes mentioned above (I to VIII), ***Chile's Foundation for Agricultural Innovation,*** supported by the Ministry of Agriculture is working hard to raise awareness and value Chile's agro-food heritage as illustrated in publications such as the *Food Heritage in Chile,* highlighting different regions of the country and exemplifying the growing awareness and interest placed on this new vision of agricultural production, in which ancestral knowledge, productive practices consistent with agro-ecological conservation principles, and its associated cultural know-how, are gaining a growing and new found respect and valuation at national levels.

40. Moreover, the Ministry of Agriculture, under ODEPA's responsibility, with the support of a public-private committee, is developing a working agenda (from 2015-2018) to rescue and value the unique agricultural heritage associated with agro-biodiversity. This initiative developed by the *Sustainable Partnerships Foundation,* in collaboration with the *Centre for Education and Technology CET* BíoBío, and *Global Green Grants Fund,* published a Chilean seeds catalogue in 2012 aimed at listing the varieties of traditional crops and fruit trees kept by farmers for thousands of years in order to make them known, spread their use and thus support the conservation of the country's agricultural heritage. Through their work, such organizations have identified female seed keepers, curators and caretakers, who have maintained the tradition of their parents and grandparents of conserving seeds of traditional crops, cultivating and exchanging them. This practice has allowed the preservation of the traditional knowledge associated with them. These informal, albeit foundational exchanges also form part of the ancestral practices and knowledge diffusion methods employed to preserve local agricultural biodiversity and transfer traditional knowledge (Manzur, 2004).

41. **The Ministry of Health** has equally made progress in recognizing the traditional use of medicinal plants as an ancient custom used by the population directly or through traditional healers. As a result, the Ministry has recently created the category of "traditional herbal medicines" and authorized the sale and distribution (Mellado and Peña, 2003) of many of these products. The proposed project will further support this use of agro-biodiversity encouraging its diffusion, commercialization and greater awareness regarding the time-tested properties of many of these products.

42. **The Office of agricultural policies and studies ODEPA** is a centralized public service dependent on the President of the Republic through the Ministry of agriculture. It aims to provide regional, national and international information for the various actors involved in the decision-making process of the agriculture and forestry sectors and promoting the need to articulate, at national and regional levels, policies and programmes actively promoting the sustainable use of agro-biodiversity. Its professionals have extensive knowledge of in agriculture and forestry, as well as the global and

specific dynamics of the sector in their various areas and territories. They will provide critical support during the agro-biodiversity mainstreaming process at national, regional and local levels (USD 270,000).

c. The proposed alternative scenario, with a brief description of expected results and project components

43. The current Government objective of articulating and mainstreaming the GIAHS approach and its agro-ecological and cultural principles into public policy, including the establishment of a *NIAHS* is based on: **(i)** the valuable results and lessons learned from the Chiloé pilot, and **(ii)** the determination of the Government to incorporate and apply within this network its revised agricultural policy and its development instruments. The consistency and complementarities between Chile's agricultural policy and GIAHS can be best summarized in their mutually reinforcing objectives, which seek to: contribute to the development of a sustainable and inclusive agriculture, protecting natural resources and biodiversity, and strengthening the support for the development local economies, based on the stated priorities of local actors, and their uniquely combined cultural, ecological and agricultural wealth.

44. The overall objective of the project is therefore the conservation, sustainable use, and valuation of globally important agro-biodiversity resources and related traditional knowledge in the Araucania Pewenche and Alto-Andino Regions of Chile, through the application of the GIAHS approach in a manner consistent with national and local development plans and the provision of local, national and global environmental benefits.

45. To that end, the project will: **(i)** conserve the productive landscape in which tagro-biodiversity resources originate and to be defined as NIAHS; **(ii)** provide incentives for the maintenance of the agro-cultural practices and traditional know-how that sustain agro-biodiversity; and **(iii)** strengthen the political and institutional frameworks supportive of agro-biodiversity management. By doing so the project expects to generate social, environmental and economic benefits for local and regional stakeholders thereby ensuring both the sustainability and replication of the endeavour, whilst simultaneously generating benefits at national and global scales. The project will contribute to poverty alleviation, food security, cultural identity and the maintenance of the invaluable traditional ancestral agricultural knowledge residing in these rural communities.

46. The project's strategy builds upon an integral part of Chile's policy to support the conservation of agricultural diversity and its associated cultural heritage present in several different macro-zones and ecosystems in the country through the implementation of a NIAHS based on the GIAHS approach. As previously mentioned, GIAHS[16] have been created, shaped and maintained by generations of farmers, fisheries, forest users and herders in unique environments, applying specific and ingenious management practices perfectly adapted to local conditions. These systems reflect the evolution of productive practices, the diversity of producer's knowledge and their deep relationship with nature based on an extended co-existence. These systems preserve and maintain globally significant agricultural biodiversity, traditional knowledge and cultural practices, whilst producing multiple goods and services, food security, increased resilience and tolerance, and improvements in the livelihoods and quality of life of small farmers.

47. Among the ecosystem goods and services derived from these *globally important agricultural heritage systems* are the conservation of agro-biodiversity, as well as associated native species of flora and fauna, regulation of water systems and micro-climate, soil fertility conservation and crop pollination, as well as aesthetic and cultural services. Furthermore, these agriculturally heterogeneous productive landscapes play a crucial role in preserving watersheds functions such as maintaining water quality, flow regulation and recharge of aquifers. Many indigenous practices such as terracing and rotation also prevent land degradation and soil erosion while buffering the effects of climate change and other environmental problems in agro-productive ecosystems. In brief, agricultural diversity improves the functions, productivity and inherent resilience of agro-ecosystems to increasing climatic variations and environmental changes while simultaneously generating significantly valuable goods and services.

48. In response to the agro-biodiversity threats a) to h) mentioned above, the project will focus on strengthening traditional family farmers and indigenous communities in the two macro-zones of Chile, namely Araucania Pewenche and Alto-Andino, considered priority sites in terms of their NIAHS attributes, as well as their socio-political and economic potential in terms of agro-biodiversity based development (eco-tourism, market niches, new employment opportunities, etc.) The direct beneficiaries of this project will be rural communities, small-scale family farmers, indigenous groups, women cooperatives and associations, as well as the elderly, who are central stakeholders and custodians in maintaining the ancestral practices and traditional knowledge related to agro-biodiversity.

[16] http://www.fao.org/giahs/giahs-home/es/

49. **Component 1 Conservation and sustainable use of agro-biodiversity, its associated cultural and ancestral knowledge, and the goods and services it provides**, with the corresponding **Outcome 1.1**. Globally important agro-biodiversity, its associated cultural and ancestral knowledge, and the goods and services it provides is conserved through the implementation of a *National System of national and globally Important Agricultural Heritage Sites* (NIAHS) in a participatory manner in the Araucania Pewenche and Alto-Andino macro-zones. Related Outputs and corresponding activities will include the participatory development of management plans, sustainable use guidelines, and monitoring and evaluation strategies for specific agro-biodiversity productive systems in the selected macro-zones of Araucania Pewenche and Alto-Andino. (See Annex 2 [a & b]) for specific crops and location of corresponding municipalities). Farmer families, community-based producer organizations, and indigenous groups will receive specialized training and technical assistance for the promotion and maintenance of culturally, and ecologically sustainable agro-biodiversity production practices and the effective implementation of the aforementioned management plans by both men and women.

50. To further and promote dissemination objectives, a *Communications Strategy* for the selected nationally important agricultural heritage sites will be developed in close collaboration with relevant stakeholder groups (technical counterparts, small-scale farmer organizations, women's cooperatives, and indigenous communities) to exchange management experiences and lessons learned in the application of ancestral productive practices, the cultural knowledge associated with agro-biodiversity, and the implementation of GIAHS-based approaches for its conservation as incorporated into the proposed management plans.

51. In addition and in complement to the above Communications Strategy, an updated on-line information system on national agro-biodiversity resources, traditional management practices, sustainable uses and associated cultural heritage will developed and established in MINAGRI to be used by all stakeholders at national, regional and local levels.

52. **Component 2 Development and implementation of market-based strategies to support agro-biodiversity conservation, cultural productive know-how and sustainable uses, whilst enhancing local rural livelihoods,** with the corresponding **Outcomes 2.1**. The goods and services provided by agro-biodiversity in the two selected macro-zones are valued in terms of their socio-economic contribution, including their benefits to rural livelihoods (nutritional, medicinal, cultural, and economic) in the Araucania Pewenche and Alto-Andino macro-zones; and **2.2.** Development assistance instruments (i.e. special credits, technical assistance, regional and local commercialization fairs, farmers label, etc.) for family farmers, community-based producer organizations, and indigenous groups are modified to include incentives for the commercialization and valuation of agro-biodiversity products.

53. Related Outputs and corresponding activities will include the collection and systematization of existing information on the goods and services provided by agro-biodiversity resources in the Araucania Pewenche and Alto-Andino regions, including the sustainable productive practices associated with its conservation, as well as feasible valuation methodologies from a variety of sources (studies, analyses, publications, etc.)

54. Based on this assessment, a strategic menu of products with commercial viability from the Araucania Pewenche and Alto-Andino regions will be identified. This will include products with marketing potential, due to their nutritional assets, medicinal properties, or cultural characteristics viable for eco-tourism, among other consumer related demands. Marketing strategies and pilot initiatives for *these specific products* will be defined and agreed upon with local community producers. The objective is to link agro-biodiversity to consolidated markets (local, regional, national or international) as means to achieve public recognition of the value of agro-biodiversity and thus ensure its conservation and sustainable use.

55. There are behavioral preferences and consumption patterns in Chile that reveal a growing demand for high-quality, as well as unique rural and territorial agro-biodiversity products and services. The increase in the average per capita income in Chile has also developed an increasingly sophisticated consumer base, giving priority to trends such as organic, gourmet, and ethnic products, among others. In Chile some agro-biodiversity products can already be found in a wide chain of specialty retail stores (including supermarkets), while others are already are part of a portfolio of relevant commodity exports and there is a growing inclusion of such products in new channels of marketing, some others can even be found in the menus of important national and international restaurants in Chile. Pilot studies for the market development of some traditional products carried out in the Santiago Metropolitan Region (the country's capital city) showed that a local association of renowned cuisine representatives demands an average of 2000 kg/ month of different agro-biodiversity based products.

56. On the other hand, Chile has been developing an important tourist industry, with rising levels of income of foreign

tourists and an even greater consumption of domestic tourists. This development also involves innovation and strengthening of a consistent design of products and services for various segments of tourists, which represents a huge opportunity so that rural tourism, agro-biodiversity and biodiversity assets are incorporated in new products and tourist circuits. The potential demand for products of the selected regions will be further analyzed during the design phase of this project

57. Once products are identified, training modules will be developed in a variety of marketing skills, including exploring viable strategies for added local value, practical information on certification, branding, or the application of standards and the specific requirements these instruments entail. Training modules will need to be prepared and tailored to the various stakeholder groups (family farmers, community-based producer organizations and indigenous groups) engaged in agro-biodiversity production activities, considering the specific products they will be involved with, including their final consumer clientele, whether local, regional, national or international. Experiences derived from the Chiloe model will be tapped on as appropriate.

58. Finally, *alliances and partnerships* amongst small-scale producers and potential entrepreneurs will be promoted, established and strengthened to further bolster the development and marketing of profitable agro-biodiversity based products, based on successful practices, on-going mutual exchanges and successful experiences. The result will be a set of pilot products from the Araucania Pewenche and Alto-Andino macro-zones successfully commercialized at local, regional, national or international levels, produced following traditional practices which conserve the agro-ecological patrimony of productive landscapes and the cultural values which have characterized it for thousands of years.

59. **Component 3. National agricultural policy incorporates agro-biodiversity conservation principles and valuation considerations into its programmes and planning frameworks.** The corresponding **Outcome** includes **3.1.** National, Regional, Provincial and local plans and programmes integrate GIAHS conservation and sustainable use principles, productive guidelines, and valuation methods for the sustainable use of agro-biodiversity and the traditional and cultural productive practices associated with its maintenance.

60. Related Outputs and corresponding activities will include a capacity building programme with training workshops/modules specifically designed for MINAGRI-line agencies (including INDAP, ODEPA, INFOR, CONAF, SAG, FIA, CNR, INIA)[17] to facilitate the incorporation and adoption of GIAHS based approaches for agro-biodiversity conservation into their respective operational programmes. Responsively, regional and local development strategies in Araucania Pewenche and Alto-Andino will incorporate agro-biodiversity conservation and sustainable use principles in their work-plans, technical assistance programmes and budgetary allocations. Finally, inter-institutional coordination mechanisms (working groups, discussion round-tables, etc.) will be established among regional and local institutions (SERNATUR, CULTURE MINISTRY, CORFO, PROCHILE, CONADI, GORE[18]) to facilitate programmatic alignment and complementarities for the mainstreaming of agro-biodiversity conservation objectives into the programmatic agendas of resource based institutions at all government levels.

61. **Component 4: A project Monitoring and Evaluation strategy is developed based on the principles of adaptive management, and the delivery of measurable and objectively verifiable results.** The Outcome associated with this component is designed to ensure that Project implementation is supported by a Monitoring and Evaluation strategy based on measurable and verifiable results and the principles of adaptive management.

62. More specifically, a project Monitoring and Evaluation strategy will be developed with relevant stakeholder groups, clearly defining expected results, the expected time-frames for their attainment, and their confirmation by objectively verifiable indicators and means of verification. Yearly work-plans and corresponding budgets will also be developed on the basis of expected Outcomes and their corresponding Outputs, including the progressive steps and milestones required for their measurable achievement. To assist in this process, annually based progress indicators will be articulated in a participatory manner for each outcome in yearly implementation work-plans.

63. Midterm and final evaluations will be conducted at strategic intervals with the aim of constructively informing and

[17] Instituto de Desarrollo Agropecuario –INDAP, Servicio Agrícola y Ganadero -SAG , Corporación Nacional Forestal – CONAF, Fundación para la Innovación Agraria – FIA, Comisión Nacional de Riego-CNR, Instituto de Investigaciones Agrarias –INIA

[18] Servicio Nacional de Turismo-SERNATUR, Corporación de Fomento a la Producción-CORFO, Servicio de Cooperación Técnica-SERCOTEC, Corporación Nacional de Desarrollo Indígena-CONADI Gobierno Regional – GORE

advising project implementation, overseeing sustainability considerations, articulating a coherent "exit strategy" and the application of adaptive measures as needed. Throughout the course of project implementation, project-related best practices and lessons learned will be systematized and disseminated for a variety of audiences and stakeholder groups via the most appropriate means depending on the targeted audience. A project website will also be established and maintained (with the relevant links to INDAP among others) to continually share experiences, disseminate information, particularly for mainstreaming and policy-making purposes, highlight results and progress and facilitate replication processes during the lifetime of the project.

d. Incremental cost reasoning and expected contributions from the baseline and the GEF

64. The project relies on a substantive operational baseline managed by the Ministry of Agriculture, through INDAP and its multiple assistance programmes as described in the baseline section. These programmes whilst essential to delivering project objectives, particularly in relation to the local development benefits they are designed to provide, will be significantly modified, adapted and revised by the proposed project to fully include agro-biodiversity conservation considerations and sustainable use principles within their operations and corresponding budgets in the Araucania Pewenche and Alto-Andino macro-zones.

Table (a). Summary of Principal Baseline Operations, gaps, and GEF alternative scenario, including USD co-financing.

Principal Baseline programmes Main Elements & Focus	Existing "Gaps" and how the GEF alternative will address them – How this baseline program will then support agro-biodiversity in the future.	Value of co-financing
I. Programme for Local development (PRODESAL) ➢ Supports farmers in sustainable agricultural activities - provides technical assistance, investment, capital financing, training & covers all project sites.	**Gaps:** Agricultural support follows more practical, albeit conventional approaches, geared towards improving productive capacities, linking farmers to markets, accessing credit modalities, facilitating networking, etc. **GEF Alternative:** Existing development assistance, incentives and development tools will be modified to include agro-biodiversity considerations and sustainable use principles.	**USD 7,401,671**
II. *The Programme for Indigenous Territorial Development* (PDTI) ➢ Designed to support indigenous communities, small-scale producers, and cooperatives in their agriculturally oriented livelihoods. Provides capital investment, grants, and technical support to these communities. Operates in all project areas	**Gaps:** Technical assistance and/or investment or grant financing, while mindful of the social organizational structures of indigenous communities, does not incorporate agro-biodiversity conservation objectives, nor does it promote the ancestral traditional practices that would ensure its preservation and sustainable use. **GEF Alternative:** the PDTI programme will be modified to align itself directly to the requirements and goals of the project supporting the consolidation, dissemination and wide-scale application of traditional sustainable use practices as they regard agro-biodiversity resources.	**USD 8,638,306**
III. The *Technical Assistance Services and Extension support* (SAT) ➢ Technical assistance promoting the insertion of small-scale producers into competitive commercial chains.	**Gaps:** Currently, assistance and technical services provided by SAT relate to the requirements and demands of a conventional market place. **GEF Alternative:** The SAT programme will be adjusted to include training and capacity building related to the commercialization of agro-biodiversity products, and associated elements such as branding, certification and proof of origin standards, to name a few.	**USD 304,468**
IV. *Programme of Productive*	**Gaps:** Training and know-how, similarly to the SAT	**USD 87,944**

Alliances and the development of commercial chains ➢ Provides technical know-how for small-scale producers to deliver products consistent with the specificities and standards of larger markets and consumer demands.	programme, focus almost exclusively on conventional/traditional market requirements. **GEF Alternative:** This programme will be substantially revised to specifically include a new set of skill-requirements, and training considerations related to very specific niche markets dealing with organic agro-biodiversity produce.	
V. The Programme for Irrigation ➢ Co-finance investments in irrigation systems benefiting small-scale producers incorporating new technologies in water use to generate efficiencies	**Gaps:** The programme focuses on infra-structural developments designed to mitigate and lessen water contamination, whilst incorporating efficiency considerations. **GEF Alternative:** Irrigation programmes would be adapted to include on a priority basis farmers involved in agro-biodiversity conservation and sustainable uses.	**US 1,059,649**
VI. The *Incentive Systems for the recovery of degraded lands* (SIRSD) ➢ Recover the productive potential of degraded agricultural soils.	**Gaps:** While the programme aims at the application of sustainable production practices and soil management strategies, these are not based on traditional/ancestral soil management techniques. **GEF Alternative:** Soil conservation programmes would be revised by the inclusion of traditional soil management techniques in Agricultural heritage sites. Sustainable soil management practices associated with agro-biodiversity and agro-ecological principles would be included amongst the priority initiatives to receive financial resources as part of the *Soil Conservation Incentives Programme*.	**USD 1,552,198**
VII. The Incentive programme for grasslands and foraging resources ➢ Foster the establishment and maintenance of grasslands and/or fodder resources for family farmers for which livestock rearing is their principal source of income.	**Gap:** The programme supports the provision of critical resources for livestock rearing without any prioritization process or considerations to the livestock rearing practices. **GEF Alternative:** The existing programme would be customized prioritizing resource allocations and support to project sites and farmer communities applying traditional practices consistent with agro-biodiversity conservation.	**USD 918,836**
VIII. *Financial support programme for individual farmers* ➢ Financial assistance/credits are provided in response to farmers/small-scale producers needs.	**Gap:** Credit assistance is granted to support farmer's needs with an emphasis on productive performance. **GEF Alternative:** With project support, special credits with favourable conditions and built-in incentives would be established for NIAHS related activities supportive of agro-biodiversity conservation and sustainable use goals.	**USD 891,655**
Others	**GEF Alternative: Raising awareness**	**345,274**
Total		**21.200.000**

In unison they will address the identified barriers as detailed below.

65. More specifically, under **Component 1**, GEF resources (USD 1,250,000) will address barriers a), b) and f) by supporting the establishment of *national and globally Important Agricultural Heritage Sites* in the Araucania Pewenche and Alto-Andino macro-zones as parts of a *National System of National and Globally Important Agricultural Heritage Sites* (NIAHS). This will include the participatory development of management plans, the definition of sustainable use guidelines, the collective development of monitoring and evaluation strategies for specific agro-biodiversity productive systems, the preparation and delivery of specialized training and technical assistance for the implementation of the aforementioned management plans by both men and women, and the creation of practical mechanisms for information exchanges among project stakeholders on experiences regarding the sustainable use of agro-biodiversity. Regarding GEF Programming Directions, Component 1 is aligned with BD 3 (*Sustainable Use of Biodiversity*) Programme #7, (*Securing Agriculture's future: Sustainable Use of Plant and Animal Genetic Resources*), Outcome 7.1 (*Increased genetic diversity of globally significant cultivated plants and domesticated animals that are*

sustainably used within production systems.) and BD 4 *(Mainstream biodiversity conservation and sustainable use into production landscapes and production sectors)* Programme #9, Outcome 9.1. *(Increased area of production landscapes that integrate conservation and sustainable use of biodiversity into management.)*

66. For **Component 2,** GEF resources (USD 1,241,030) will address barriers e) f) g) and h) by focussing on the development of instruments and incentives supportive of agro-biodiversity conservation goals, particularly in relation to its contribution in support of rural livelihoods; this component will thus focus on the required training and expertise required for the commercialization of agro-biodiversity products for small scale producers in the Arauca Pewenche and Alto-Andino macro-zones to ensure the effective insertion of their products into the market place, and by association the long-term sustainability of corresponding conservation and sustainable use objectives. Regarding GEF programming directions, Component 1 is aligned with BD 3 (*Sustainable Use of Biodiversity*) Programme #7 (*Securing Agriculture's future: Sustainable Use of Plant and Animal Genetic Resources*) and Outcome 7.1. (*Increased genetic diversity of globally significant cultivated plants and domesticated animals that are sustainably used within production systems.)*

67. Under **Component 3,** GEF resources (USD 190,000) will attend barriers c) d) and f) by addressing agro-biodiversity mainstreaming objectives into corresponding agricultural plans and strategies adapting a series of instruments and development tools so that they fully incorporate NIAHS and agro-biodiversity conservation objectives within their frameworks. This will equally entail preparing and providing the necessary training and capacities to government counterparts and institutions at national, provincial and local levels. Regarding GEF programming directions, Component 1 is aligned with BD 3 (*Sustainable Use of Biodiversity*), Programme #7 (*Securing Agriculture's future: Sustainable Use of Plant and Animal Genetic Resources*), Outcome 7.1. (*Increased genetic diversity of globally significant cultivated plants and domesticated animals that are sustainably used within production systems.)*

68. In addition, GEF incremental financing (USD 220,253) will support **Component 4,** dealing with monitoring and evaluation with primarily focus on financing the oversight of technical agro-biodiversity aspects, including the effectiveness of selected monitoring and evaluation tools, innovative alternatives pertaining to agro-biodiversity commercialization, as well as the commissioning of independent evaluations staffed with high level expertise.

e. Global environmental benefits

69. The project will generate global environmental benefits, consistent with national development priorities, and sustained over the long-term by the regional and local benefits it will also generate in terms of improved livelihoods, cultural reaffirmation and environmental sustainability. These multiple benefits at varying levels will be achieved through the application of sustainable agricultural practices, the maintenance of critical ecosystem functions in the productive landscape, and the preservation of unique ancestral and cultural knowledge in the efficient management of agro-ecosystems.

The principal global environmental benefits expected from the project are:

1. Conservation and sustainable use of globally significant wild and agricultural biodiversity in priority areas in Chile (namely the two macro-zones of Araucania Pewenche and Alto-Andino) and the application of associated traditional sustainable production practices. These practices will be applied in 40,000 ha managed according to NIAHS criteria and involve 21,000 beneficiaries (estimating on the low side).
2. A minimum of ten globally significant traditional or animal breed varieties of global significance. The selection of crop species to be targeted by the project is detailed in Annex 2. The conservation of the genetic resources associated with these crop varieties and wild relatives is of global importance by virtue of their resiliency, reliability, and adaptability thereby ensuring food security and adaptation potential in the face of increasing climatic changes, natural disasters and environmental disruptions.
3. Mainstreaming of conservation and sustainable use of biodiversity in policy and planning frameworks.

This proposed project will also generate GEBs by contributing to the following Aichi Targets:

Aichi Biodiversity Target	Related Project Outputs	Selected SMART Indicators[19]

[19] The intermediate milestones to be achieved during project implementation will be established in the full project formulation phase.

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	1.1.2 1.1.3 1.1.4 2.1.1	✓ Trends in awareness, attitudes and public engagement in support of biodiversity
Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	3.1.1 3.1.2. 3.1.3.	✓ Trends in integration of biodiversity and ecosystem service values into integrated in sectoral and development policies
Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	1.1.1 1.1.2 2.2.1 2.2.2	✓ Trends in proportion of products derived from sustainable sources ✓ Trends in area of forest, agricultural and aquaculture ecosystems under sustainable management
Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	1.1.1 1.1.2 1.1.3 1.1.4	✓ Trends in genetic diversity of cultivated plants, and farmed and domesticated animals and their wild relatives
Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	1.1.1 2.2.1 2.2.2 2.2.4	✓ Trends in benefits that humans derive from selected ecosystem services ✓ Trends in economic and non-economic values of selected ecosystem services

At local and national level, project benefits include:

- Reliable ecosystem services from agricultural production systems:
  - Supply services, e.g. availability of water through the recharge of aquifers.
  - Hydrological regulation services
  - Support services: organic matter formation and storage, improvement of nutrients cycle, soil formation and assimilation, water purification.
- Conservation of local genetic resources.
- Cultural, aesthetic and spiritual benefits: beauty of the landscape, places of cultural and religious significance, territorial identity.
- Food and nutritional safety through diet diversification.
- Benefits for the local economy by creating new sources of income and improvements in livelihoods.
- Social benefits: partnership and empowerment of rural communities and local stakeholders.

More specifically, Table (b) provides a more detailed appreciation of the number of beneficiaries estimated by the project and its alternative scenario.

Table (b). Number of Beneficiary Families of INDAP's programs in each Macro-region, Region, and Municipality/Commune in 2014.

MACRO regions	REGION	Municipality/Commune	Total N° of families (*)
ALTO ANDINA and SERRANIAS	Arica and Parinacota	General Lagos	138
		Putre	213
	Tarapacá	Pica	200
		Camiña	272
		Huara	230
		Colchane	210
	Antofagasta	San Pedro de Atacama	408
ARAUCANIA PEWENCHE	Biobío	Alto Biobo	2.136
	Araucanía	LLonquimay	2.790
		Melipeuco	824
		Curarrehue	1.769
TOTAL			*9.190

Source: INDAP 2015, Institutional Registries.

(*) This figure corresponds to the net amount of beneficiaries without repetition between programmes. Based on this figure, it is estimated on the low side that beneficiaries from this project can add up to at least 21,000 individuals, considering a lesser total of 7,000 beneficiary families from these diverse INDAP initiatives.

f. Innovation, sustainability and potential for scaling up

70. Innovation: The project is innovative in terms of agro-biodiversity conservation models in Chile. It adopts a conservation approach that integrates: the notion of productivity in agricultural systems based on the conservation and sustainable use of ecosystems and their composite resources, the integrity of their functionality, the goods and services on which sustainable agricultural production depends on, the active participation and engagement of local communities, and the systematic coordination of various institutions working in tandem towards a common objective. The approach, inspired by the Chiloe experience, will represent a significant shift in agricultural and rural development policy in Chile. For the first time it will be tested on a broader national scale, commencing with GEF support in the two selected macro-zones in which it will promote the application of agro-ecology principles, resource conservation, the valuation and recognition of agro-biodiversity goods and services, and the acknowledgment of the unique ancestral and cultural knowledge which has sustained it over countless generations.

71. Sustainability: The sustainability of the project will be achieved by strengthening integrated production and conservation processes at local level with the ample support of local communities and producers. Critical to sustainability prospects will be: (i) the incorporation of GIAHS principles into agricultural development programmes, policies, and incentive systems; (ii) the strengthening of capacities at different levels, ranging from local rural communities, to extension agencies and programmes, to policy makers; and (iii) the valuation of agro-biodiversity resources and access to more comprehensive and holistic development instruments. In the same vein, efforts to increase consumer awareness and developing markets at varying levels (local, regional, national, international) are expected to bolster demand and/or better prices for agro-biodiversity products. It is also expected that the resulting diversification these products will entail in relation to income sources will further contribute to the improvement and sustainability of local livelihoods. In addition, communities will be empowered through the recognition of the cultural and ancestral knowledge associated with agro-biodiversity and the ecological and cultural heritage it recognizes and promotes.

72. Replicability: The replicability of project objectives and the further development of a NIAHS is assured by the firm and progressive political commitment toward the establishment of such as National System and the progressive integration of agro-biodiversity conservation objectives into development policies. More notably, it is the corresponding formulation and implementation of a national public policy that not only recognizes the environmental services rendered by sustainable agricultural systems, but also the unique and priceless ancestral heritage associated with its practices. Two macro-zones, Araucania Pewenche and Alto-Andino have been deliberately chosen for the development and national validation of management and production models with the aim of further replicating them in other territories both in Chile and abroad. The experiences and models emanating from this experience will be actively disseminated by the project through GIAHS networks, both nationally and internationally.

2. **STAKEHOLDERS Will project design include the participation of relevant stakeholders from civil society and indigenous people? (yes ☒ /no☐) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation.**

73. The Ministry of Agriculture of Chile has defined a public policy of implementation of the NIAHS, which will involve two institutions of the Ministry for its design, implementation and monitoring: the Office of agricultural policies (ODEPA) and the National Institute for agricultural development (INDAP), who have already formed a technical and coordination committee at national level. This committee currently defines the general design and detail of this public policy, its required strategies at national and regional levels and the subsequent plan of action for its implementation.

74. It will therefore be in the framework of this Committee currently in operation, where specific functions for the implementation of this project will be assigned and its consequent implementation arrangements defined. Final responsibility of this model will lay on the national directions of both institutions, who will be ultimately responsible to ratify it.

75. Preliminarily we can draw on the basis of the current working model, that both institutions have the following features and global functions for this project:

Institution	Role	Responsibilities in the project
Ministry of Environment (MMA) through the Natural Resources and Biodiversity Division	National Environmental Authority	Coordination from the Ministry of Environment and environmental counterpart.
Ministry of Agriculture (MINAGRI) through the *Institute for Agricultural Development/Instituto de Desarrollo Agropecuario* - INDAP	Main implementing partner	INDAP, as the main executing partner, will coordinate the project at national, regional and local level. Because of INDAP's established local presence across the country, it will implement and support the creation of the NIAHS. It will manage the instruments and extension programmes to support mainstreaming of agrobiodiversity by family farmers and indigenous groups at the designated project sites.
MINAGRI through ODEPA, the Office of Studies and Agricultural Policy	Implementing partner	ODEPA advises the Ministry of Agriculture in the development of sectoral policies, among other functions. The Institution acted as the government counterpart in the pilot project GIAHS Chiloé. For the proposed project, it will be entrusted with the project monitoring at national level; coordination of public and private actors at national level; support regional and local coordination and the work to be performed by INDAP.
Municipalities	Local authorities	With INDAP's resources, they provide technical assistance to family farmers and indigenous groups. They will coordinate with INDAP actions to mainstream agrobiodiversity in their services. Component 3: mechanisms to strengthen and consolidate the participation in and for policy decision making processes.
FAO	GEF Implementing Agency	Provision of technical assistance on sustainable natural resource management, rural development, biodiversity preservation, land degradation, and sustainable forest management. Support of methodologies according to international standards. Support and monitoring of project implementation.

Local communities including indigenous communities	Beneficiaries	Component 1 and 2: Establishment of NIAHS and building capacities for agro-biodiversity use and conservation.

76. Given the project's comprehensive approach, a wide range of relevant government institutions, ranging from the *Ministries of Environment*, to the *Ministry of Economy* (responsible for fishing and tourism sectors), to Social Development (of which the *National Indigenous Development Corporation*– CONADI depends on), and the *National Council for Culture and Arts*, for the coordination of activities, will be invited to participate in the Technical Committees to be established to oversee, guide and advise project implementation. Local stakeholders, government, producers associations, artisans, indigenous communities organizations, and civil society, are also an integral part of the project's conceptualization and will be actively involved through the corresponding structures to be established by the project for such a purpose.

77. In addition to the above, the project will consider setting up an Advisory Committee to include other government institutions such as the *National Forestry Corporation* (CONAF), *the Agricultural and Livestock Service* (SAG), the *Institute of Agricultural Research* (INIA), *the Foundation for Agricultural Innovation* (FIA), *Foundation of Agricultural Communications, Training and Culture* (FUCOA), *the National Forestry Institute* (INFOR), all the institutions under the *Ministry of Agriculture* in charge of protecting biodiversity and promoting sustainable agriculture. Other relevant institutions are the *National Service of Tourism* (SERNATUR), the *National Fishery Service* (SERNAPESCA), the *Production Development Corporation* (CORFO) and *Technical Cooperation Service* (SERCOTEC) of the *Ministry of Economy, Development and Tourism*; the *National Indigenous Development Corporation* (CONADI) of the *Ministry of Social Development*; and the *Council of Culture and Arts.*

78. Moreover, the project design will incorporate and coordinate the participation of public and private institutions at regional and local level, such as:

Public Sector:

- Regional Town Council
- Regional Governments
- Province Governments
- Regional Ministerial Secretariats (SEREMIs)
- Municipalities
- Universities
- NGOs involved with the issue of territorial development, cultural identity and Agroecology

Private Sector

- Regional and local organisations of agricultural producers
- Regional and local organisations of micro-entrepreneurs
- Chambers of Regional and Local Tourism
- Network of Rural Tourism entrepreneurs in the territories
- Regional and local Agricultural Development Corporations
- Institutes and organizations specialized in education and training.
- Universities and Technical Institutes

79. Special attention will be given to the active and on-going participation of indigenous organizations, as custodians of the ancestral knowledge and related productive practices associated with agro-biodiversity conservation and sustainable use. Similarly, the participation of civil society will be promoted through a variety of mechanisms facilitating its involvement, critical among which, will be that of women's organizations present in the project areas due to the fundamental role they play and wealth of knowledge they possess in relation to agro-biodiversity. Equally, leaders and representatives of community organizations will continue to be consulted for their inputs and recommendations as the project further develops. For indigenous groups, consultation processes and joint work with the project will be developed according to the protocol established by the National Indigenous National Corporation (CONADI). This consultation process will also consider FAO guidelines for consultation with indigenous communities, consensus and prior agreement (http://www.fao.org/3/a-i4413e.pdf)

3. **GENDER CONSIDERATIONS Are gender considerations taken into account? (yes ☒ /no☐). If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women**

80. Women have historically assumed a leading role in the management and application of the traditional knowledge that forms Chile's agricultural and cultural heritage. Women play an invaluable role in managing agro-biodiversity in both plants and animals (ODEPA, 2013) and as such the maintenance and valuation of this in-situ heritage must be fully tailored and developed on the basis of gender-sensitive considerations. In this regard, the project will take special care to respect and acknowledge the different roles that men and women play in these important agricultural heritage systems and how their unique and individual contributions can be maximized within the context of the project's strategy and its implementation.

81. The design and development phase of the project will therefore include and promote the active participation of women's organizations (through consultations workshops and during communities' selection) and ensure a balanced participation in project planning and implementation activities. Project implementation at local levels will strengthen the role of female producers, as a high percentage of them represent the "head of households" (depending on the region). Politically, the development of guidelines and tools will include practical measures to ensure equal access for women and men in all aspects of project design, development and implementation. In this regard, the project's monitoring and evaluation strategy will consider indicators specifically designed to measure project impact by gender.

4. **RISK MATRIX OF THE PROJECT Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).**

Potential Risks	Probability	Mitigation Measures
Low commitment of local actors	Medium	The methodological and strategic approach of the project is a highly participatory one. No activities will be conducted in areas, which do not have the explicit approval, on-going support and active involvement of key players from the local community. To ensure this, throughout the development of the project, workshops, and joint planning and design exercises will be carried out. Mechanisms for public-private coordination will also be established at regional level, led by the ODEPA and INDAP, in order to facilitate participation, monitoring, feedback and decision-making by the different actors. Regional governments and municipalities will be involved during project design phase to guarantee their participation.
Insufficient inter institutional coordination in the territories	Medium	The project design includes mechanisms to strengthen the coordination of institutions in the chosen macro-zones. These coordination mechanisms will define the roles and functions of the different actors, formalize joint-work agreements, alliances and agree upon concrete goals.
Low capacity to effectively manage the NIAHS	Medium	Training programs with leaders and community stakeholders will be developed at local level and a programme to exchange experiences with other areas, producer organizations and rural leaders will be established.
Conflicts in working with indigenous communities	Medium	The project will continue to work with the associative structures of the communities, using the spaces for dialogue and work with the government. The FAO standard of joint work with indigenous peoples, including free, prior, and validated informed consent will be applied. To ensure empowerment of indigenous people, their organizations and representatives at territorial level will continue to be involved in the design and development stage, the process of validation of the proposal as well as the commitments of all local actors. Participatory coordination with the communities shall be set up to report, motivate, increase awareness and receive systematic feedback on project
Low revenue generated	Medium	The project will focus on alliances and partnerships to guarantee

Potential Risks	Probability	Mitigation Measures
after the commercialization pilots		successful market introduction of agrobiodiversity products. Considering the experiences of the Chiloé pilot, which has already allocated products in a big Chilean supermarket chain.
Loss of political alignment due to political changes in the government	Medium	The commitment of the current government is shared and recognized by all sectors irrespective of political affiliations. That being said it is imperative to formally establish the relevant policy frameworks to support AGBD conservation and adapt government programmes (particularly those operating at the local level to do the same) so that they fully embrace and adopt these conservation considerations, principles and objectives.
Climate Risk	Medium	The project will work in areas vulnerable to climate change and the prompt implementation of adaptation measures, as determined by the Plan of Forestry, farming and cattle Sector Adaptation to Climate Change published in 2013.

5. COORDINATION WITH OTHER GEF FINANCED PROJECTS AND OTHER INITIATIVES

MINAGRI and its associated institutions coordinate closely with the GEF Operational Focal Point, at the Ministry of the Environment. Main GEF projects to be coordinated with this initiative in Chile are:

- **"Implementation of a Comprehensive National System of Protected Areas in Chile: Financial and Operational Structure"** (# 2772), 2009-2015. The main objective of this project was to create and implement a National System of Protected Areas (PA), including terrestrial and aquatic, as well as public and private, which properly represent the biological and cultural diversity of the nation, guaranteeing the protection of its biodiversity and the provision of critical ecosystem services for the sustainable development of the country and the benefit of present and future generations. The selected pilots are close to buffer zones of important biosphere reserves, hence the need to coordinate with this project.
- **"Sustainable Land Management"** (# 4104). This on-going project aims to promote incentives to contribute to sustainable land management practices and to combat land degradation, conserve biodiversity and protect and increase carbon stock. This project will coordinate in those degraded areas selected by this iniative.
- **"Integrated National System of Monitoring and Assessment of Forest Ecosystems to support policies, regulations and SFM practices incorporating REDD + and conservation of biodiversity in forest ecosystems"** (# 4968). This on-going project aims to develop and implement an Integrated System of Monitoring and Assessment of carbon stocks and biodiversity in Forest Ecosystems (SIMEF) supporting the National Inventory of Greenhouse Gases and design of policies, regulations and SFM practices incorporating REDD + and conservation of biodiversity in forest ecosystems. Both projects will coordinate in areas where forest products can be obtained.

At a global level, this project will be coordinated with the various GIAHS initiatives being managed by FAO, some of which have been proposed for GEF for financing consideration, such as Peru and the Philippines.

6. CONSISTENCY WITH NATIONAL PRIORITIES

82. The project is aligned with the strategic guidelines of the Government in promoting sustainable and inclusive agriculture, reducing inequality, adding value to goods and services from forestry, farming and livestock activities and strengthening product quality and differentiation.

83. The project is fully aligned and reflective of the agenda promoted by the Ministry of Agriculture designed to protect biodiversity, value the country's unique agricultural heritage and its strategic benefits, and ensure the generation of ecosystem services stemming from deliberately maintaining functional productive landscapes and systems, as

explained in the Strategic Guidelines of INDAP for the government period 2014-2018.[20]

84. Furthermore, the proposal is in line with: (i) Forestry, farming and cattle sector development plans, the national strategy for Adaptation to Climate Change (ii) the Plan for Biodiversity Adaptation to Climate Change, (iii) the objective of strengthening *in situ* conservation in State Wild Protected Areas and (iv) the objective of strengthening *ex situ* conservation in State or community germplasm banks.

85. Internationally, Chile has committed to conserve and sustainably use biodiversity in various international agreements and fora that are part of the policy of the country, where the NIAHS approach is part of supporting their compliance:

    1. Convention on Biological Diversity: conservation and sustainable use of agro-biodiversity; articles 10c and 8j.
    2. International Treaty on Plant Genetic Resources for Food and Agriculture, FAO
    3. Global Action Plan for the conservation and sustainable use of plant genetic resources, animal and forestry, FAO
    4. Strategic Plan for Biological Diversity 2011-2020 and the Aichi Targets of the Convention on Biological Diversity, among other goals, 1, 7, 13 and 14.
    5. The overall objective of the National Biodiversity Strategy is to conserve the country's biodiversity, promoting sustainable management, in order to protect their vital capacity and ensure access to benefits for the welfare of present and future generations.

86. The project is aligned with the National Biodiversity Strategy, which was approved in 2003, and its Action Plan, approved in 2005, (NBSAP). With the implementation of this project, the following strategic lines and actions of the NBS will be supported: the conservation and restoration of ecosystems; preserve species and genetic heritage; promote sustainable production practices that ensure protection of biodiversity, both in agriculture and livestock and forestry, and strengthen inter-institutional and inter-sectoral coordination for an integrated biodiversity management.

87. In addition, this project is inserted into the priority B of the Programme Framework of FAO Representation in Chile, which focuses on the governance of natural resources and forestry, farming, cattle and fishery systems under Climate Change Scenarios, with the aim of protecting biodiversity and conserving natural and genetic resources for food security. This project will also support FAO's Strategic Objective 2 (SO2), Achievement 1, which essentially contributes to increasing and improving the supply of goods and services in the agricultural sector, including forestry.

7. KNOWLEDGE MANAGEMENT

88. Knowledge management is an element that traverses all components of the project. The dissemination of ancestral knowledge among farmers, indigenous communities, civil society organizations and decision makers at territorial level will be achieved through a series of mechanisms and tools, defined in a participatory manner, described in Table B and the alternative scenario section of the PIF, applying a strategy of "learning by doing", taking as reference field schools and extension methods developed, tested and validated by FAO for many decades. In addition, a dissemination and information campaign (including a project website) will be developed to generate public awareness on the importance of agro-biodiversity, conservation of productive landscapes and the diversity of the agricultural and cultural heritage existing in Chile.

89. Finally, the systematization of knowledge on agro-biodiversity across the country, as well as the characteristics and practices in each of the selected sites of Araucania Pewenche and Alto-Andino will be made available to the interested public via an easily accessible online information system permanently updated by counterpart institutions and housed in MINAGRI.

[20] The Guidelines state that "... are part of this new perspective of institutional support, adding value under the approach of valuing local resources and the development of short circuits, which can play a fundamental role. This implies a specific job to identify local resources, auscultating the local culture, the ecological and historical assets as well as local gastronomic and productive traditions to find new responses to the challenge posed by globalization. Likewise, this compels to identify and support the type of short circuits that best fit the binomial producer-consumer in the local reality "..." Regarding the exercise of communities' participation, things have changed dramatically and today these communities demand to participate in definitions of development of their territories. This means that the relevance of the intervention is not only determined by the quality of technical decisions, but also for its legitimacy in the communities, that is, the way to decide. "

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. **RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the Operational Focal Points endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/DD/YYYY)*
Ms. Ximena GEORGE-NASCIMENTO	GEF Operational Focal Point	MINISTERIO DEL MEDIO AMBIENTE DE CHILE	JULY 9, 2015

B. **GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**Date** *(MM/DD/YYYY)*	**Project Contact Person**	**Telephone**	**Email Address**
Gustavo Merino Director, Investment Centre Division Gustavo.merino@fao.org		10/09/2015	Benjamin Kiersch, Natural Resources Officer, RLC	(56-2) 2923-2129	Benjamin.kiersch@fao.org
Jeff Griffin FAO GEF Coordinator Jeff.griffin@fao.org					Jeff.griffin@fao.org

Annex 1.

Number of INDAP Programmes according to Macro-Zones, Regions and Communes

(Farmers and indigenous groups)

PROGRAMA INDAP	Macro Zona Alto Andina y de Serranías							Araucanía Pewenche				
	Arica y Parinacota		Tarapacá				Antofagasta	Biobío	Araucanía			
	General Lagos	Putre	Camiña	Colchane	Huara	Pica	San Pedro de Atacama	Alto Biobío	Lonquimay	Melipeuco	Curarrehue	Total
SIRDS	1	26	55	19	47	41	175	162	105	27	21	**679**
Emergencias			67	4	34	43		1.996	2.682	775	1.652	**7253**
PROGYSO	1	1		1					1	2	2	**8**
PRODESAL	2	136	252	171	185	124	248	539	626	373	408	**3.064**
PDTI		50		1		55	119	513	1.371	146	542	**2.797**
Corto Plazo	8	50	51	18	55	25	22	47	504	111	194	**1.085**
Largo Plazo	3	22	20		7	9	23	14	131	52	88	**369**
Riego		12	2	7	2	4	20	29	24	4	2	**106**
PDI	3	7	8	26		4			319	1	1	**369**
PRODESAL Inv	132	110	116	94	129	71	200	337	1.084	264	199	**2.736**
PDTI Inv		44		33	34	32	97	357	336	131	526	**1.590**
Praderas								113	5	95	127	**340**
Alianzas						4			133	1		**138**
SAT	3			1			1				1	**6**
Deuda Flotante		1				1						**2**
Total	**153**	459	**571**	**375**	**493**	**413**	**905**	**4.107**	**7.321**	**1.982**	**3.763**	**20.542**

Source: Information provided by INDAP Central level for the purposes of this project.

Note: One person can be recipient of one or more programs; therefore the number of 20.542 corresponds to the total number of interventions for a number of underserved families, reaching 9.190 people, i.e. approximately each recipient of INDAP instruments applied in at least 2 of them

Annex 2 (a): Species in the **Macro Zone Alto Andino**

Tipo	Nombre Común	Nombre Científico	Arica y Parinacota		Tarapacá				Antofagasta
			General Lagos	Putre	Camiña	Pica	Huara	Colchane	San Pedro de Atacama
Fauna Silvestre	Vicuña (EN)	*Vicugna vicugna*	X	X		X		X	X
		Vicugna vicugna de mensalis	X	X		X		X	X
	Taruca (EN)	*Hippocamelus antisensis*		X					
	Tagua cornuda (VU)	*Fulica cornuta*	X	X		X		X	X
	Tagua gigante (VU)	*Fulica gigantea*	X	X		X		X	X
	Chinchilla cordillerana (CR)	*Chinchilla brevicaudata*							
	Quirquincho de la puna (EN)	*Chaetophractus nationi*	X	X		X		X	X
	Perdiz de la puna (VU)	*Tinamotis pentlandii*							
	Ñandú (VU)	*Rhea pennata tarapacensis*	X	X		X		X	X
	Flamenco andino o Parina Grande (VU)	*Phoenicoparrus andinus*	X	X		X		X	X
	Flamenco Chileno o Austral	*Phoenicopterus chilensis*	X	X		X		X	X
	Flamenco de James o Parina Chica (VU)	*Phoenicoparrus jamesi*	X	X		X		X	X
Flora nativa	Queñoa(EN)	*Polylepis besseri*							

Tipo	Nombre Común	Nombre Científico	Arica y Parinacota		Tarapacá				Antofagasta
			General Lagos	Putre	Camiña	Pica	Huara	Colchane	San Pedro de Atacama
	Queñoa de altura (VU)	*Polylepis tarapacana*	X	X		X		X	X
Fauna domestica	Llama	*Lama glama*	X	X	X	X	X	X	X
	Alpaca	*Lama pacos*	X	X	X	X	X	X	X
	Bovinos			X					
	Ovinos		X	X	X	X	X	X	X
	Caprinos			X		X		X	X
Hierbas Aromaticas, Culinarias y Medicinales	Rica-Rica	*Acantholippia tarapacana*	X	X		X		X	
	Ñaca tola	*Baccharis sp*	X	X		X		X	
	Sipu tola	*Baccharis sp*	X	X		X		X	
	Uma tola	*Baccharis sp*	X	X		X		X	
	Queñoa (Corteza)	*Polylepis tarapacana*	X	X		X		X	
	Muñe		X	X		X		X	
	Chachacoma	*Senecio graveolens*	X	X		X		X	X
	Hierba Luisa				X		X		
	Hierba del té				X		X		
	Huacata				X		X		
	Llareta (Vu)	*Azorella compacta*	X	X		X		X	X
Pseudo cereal	Quínoa	*Chenopodium quinoa*		X		X		X	X
Chacras y hortalizas	Papa Petohuallaca			X					
	Papa Chiquiza		X	X					

Tipo	Nombre Común	Nombre Científico	Arica y Parinacota		Tarapacá				Antofagasta
			General Lagos	Putre	Camiña	Pica	Huara	Colchane	San Pedro de Atacama
	Papa negra			X					
	Papas chuño,					X		X	X
	Papa blanca			X		X		X	X
	Papa lila					X		X	X
	Papa amarilla					X		X	X
	Papa rosada					X		X	X
	Choclo Camiñano				X				
	Ajo Camiñano				X				
	Tumbo	*Pasiflora trupartita*			X				
	Maiz				X		X		X
Praderas naturales	Llareta (VU)	*Azorella compacta*	X					X	X
	Bofedal		X	X		X		X	X
Praderas Artificiales	Alfalfa Altasierra			X			X		X
	Trigo y otros cereales				X		X		X
	Horticultura y Chacarería		X	X	X	X		X	X
	Frutales					X	X		X

Source: to) INDAP (2015). Regional reports for the purposes of this project. (B) Ministry of environment (2015). Species, classification according to status. Revised on 06.07.2015 in http://www.mma.gob.cl/clasificacionespecies/listado-especies-nativas-segun-estado-2014.htm

' Existing category of conservation according to IUCN: CR = critically endangered in = endangered VU = Vulnerable

Note: Species which do not present classification in some category of conservation are not in the official listing reported by MMA; however they have been reported by the regional teams of INDAP and are relevant to the production systems of the territory.