Programme to sustainably manage and restore land and biodiversity in the Guadalquivir Basin

Part I: Project Information

GEF ID
10627

Project Type
MSP

Type of Trust Fund
GET

CBIT/NGI
☐CBIT
☐NGI

Project Title
Programme to sustainably manage and restore land and biodiversity in the Guadalquivir Basin

Countries
Bolivia

Agency(ies)
FAO

Other Executing Partner(s)
Vice-Ministry of Water Resources and Irrigation

Executing Partner Type
Government

GEF Focal Area
Land Degradation

Taxonomy
Food Security, Land Degradation, Focal Areas, Land Productivity, Land Degradation Neutrality, Sustainable Livelihoods, Sustainable Land Management, Sustainable Forest, Restoration and Rehabilitation of Degraded Lands, Improved Soil and Water Management Techniques, Income Generating Activities, Civil Society, Non-Governmental Organization, Stakeholders, Community Based Organization, Academia, Awareness Raising, Communications, Participation, Type of Engagement, Consultation, Information Dissemination, Beneficiaries, Gender-sensitive indicators, Gender Mainstreaming, Gender Equality, Women groups, Sex-disaggregated

indicators, Access to benefits and services, Gender results areas, Participation and leadership, Capacity Development, Knowledge Generation and Exchange, Learning, Capacity, Knowledge and Research, Capital providers, Private Sector, SMEs, Individuals/Entrepreneurs, Strengthen institutional capacity and decision-making, Influencing models, Local Communities, Knowledge Generation

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Duration

60 In Months

Agency Fee($)

147,726.00

Submission Date

6/24/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount($)	Co-Fin Amount($)
LD-1-1	GET	1,555,012.00	12,250,000.00
	Total Project Cost ($)	**1,555,012.00**	**12,250,000.00**

B. Indicative Project description summary

Project Objective

Develop and implement an inclusive territorial planning and governance strategy as a model for the conservation, restoration and sustainable management of soils, water and integrated production systems that enable the achievement of Land Degradation Neutrality (LDN) in the Guadalquivir River Basin (GRB).

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
1. Strategic framework for strengthened and gender sensitive governance and integrated territorial management enabling the restoration of vegetation and environmental functions and sustainable socio-economic development in the Guadalquivir River Basin (GRB).	Technical Assistance	1.1 Effective governance mechanisms for water, soil and vegetation management in landscapes of the Guadalquivir River Basin (GRB) have been designed, validated and implemented for the GRB, contributing to the goals of achieving LDN, sustainable production systems and advancing towards gender equality. <u>*Indicators*</u>: *-Number of actors (tracked by gender and youth) that participate in the Territorial Consultative Platform (public sector institutions, private sector e.g.traders, and producers organizations)* *-Model Territorial plan and Governance Strategy for Integrated Soil, water and vegetation management and LDN indicators in the Agricultural Territories of the Guadalquivir Basin has been designed and piloted, with a gender responsive.*	1.1.1. Platform for the governance of water, soil and vegetation in the Guadalquivir River Basin, operates strengthened and institutionalized as a multilevel and inter-institutional field space sensitive to gender with implementation actions from the government, producers, marketers, financial sector and academia. 1.1.2. Two Sub-Basin Integrated Territorial Plans (PDTI-SC, in Spanish) (Yesera and los Pinos) including governance arrangements developed using integrated diagnostic, analytical and water balance tools (component 1), piloted and evaluated (Component 2) and validated as a model to	GET	145,000.00	1,250,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
2. Demonstration of sustainable land and forest management practices in the Central Tarija Valley	Investment	2.1. Technological innovation processes are implemented for sustainable and resilient production with an integrated approach to basin management Plans, LDN indicators such as the introduction and validation of technologies in productive tasks, the development of new business models and efficient marketing systems. *Indicators:* *Participatory action plans result in:* *- 2,300 ha of degraded slopes under silvopastoral management restored. (Core indicator 3.2: 460 hectares and core Indicator 3.3: 1840 hectares)* *- 259 families (50 percent women and at least 30 percent youth) and 10 producers/marketing associations benefiting from innovative, sustainable and diversified productive systems in 2 model Sub-basins.* *- Percent increase*	2.1.1 Selected activities under the PDTI-SC (see 1.1.2) are implemented by project beneficiaries, leading to increased productivity, reduced land degradation and improved BD conservation in the Central Tarija Valley 2.1.2. Integrated technical support and extension services strengthened to support the implementation of the PDTI-SC (in 2.1.1) to implement LDN with a gender approach and thereby generate environmental and socioeconomic benefits. 2.1.3. Data and Information System compiled for the target Sub-basins using a participatory approach and robust practical tools to assess ecosystem functions / services	GET	683,000.00	5,700,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
3. Financial mechanism for the conservation and integrated management of water, soil and vegetation, as well as the establishment of productive ventures composed by associated farmers	Investment	3.1 The regional financial mechanism supports the adoption of good practices based on soil management and restoration, efficient water use, vegetation conservation and the preservation of environmental functions. *Indicators:* *-Total funds allocated to the financial mechanism and number of funding partners (tracked by private sector) supporting farmers?production and adoption of sustainable farming systems (soil, water and vegetation).* *-At least 20 productive enterprises (50% led by women) have sustainable financing/ investment and technical assistance (e.g.through field schools, business training) for their development and implementation.*	3.1.1. Regional Fund for Sustainable Water and Soil Management and adoption of good practices in the Central Valley of Tarija capitalized. 3.1.2. Effective management of financing and investment in productive enterprises (based on land, vegetation and water management/ restoration) at family or association level. 3.1.3. Family productive entrepreneurship strategy guided by a Steering Committee led by women, financed and technically supported for viability and sustainability.	GET	444,000.00	3,600,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
4. Project management, monitoring evaluation and dissemination of experiences	Technical Assistance	4.1. Effective Knowledge management, monitoring and evaluation, and communication mechanisms in place. *Indicators:* *-Indicators of environmental impacts and social and economic benefits monitored and analyzed disaggregated by gender.* *-Mid-term review conducted and supporting implementation.* *-Terminal evaluation implemented with lessons learned and good practices identified*	4.1.1. Integrated monitoring and evaluation (M&E) system for the project applied within the framework of national LDN commitments. 4.1.2. Midterm Review and Terminal evaluations conducted and informing replication strategies. 4.1.3. Communication strategy developed and implemented to contribute to the objectives of the project and national LDN strategy (lessons, experiences, tools). 4.1.4. Knowledge, tools and information materials developed, validated and distributed among relevant actors for wider uptake.	GET	141,647.00	1,100,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount($)	Co-Fin Amount($)
				Sub Total ($)	**1,413,647.00**	**11,650,000.00**
Project Management Cost (PMC)						
				GET	141,365.00	600,000.00
				Sub Total($)	**141,365.00**	**600,000.00**
				Total Project Cost($)	**1,555,012.00**	**12,250,000.00**

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Environment and Water (Viceministry of hydric Resources)	Grant	Investment mobilized	7,150,500.00
Recipient Country Government	Gobierno Autonomo Municipal de San Lorenzo	Grant	Investment mobilized	86,000.00
Recipient Country Government	Gobierno Autonomo Municipal de Tarija	Grant	Investment mobilized	1,700,000.00
Recipient Country Government	Gobierno Autonomo Municipal Uriondo	Grant	Investment mobilized	47,500.00
Recipient Country Government	Gobierno Autonomo Municipal de Padcaya	Grant	Investment mobilized	875,000.00
Recipient Country Government	Gobierno Autonomo Departamental de Tarija	Grant	Investment mobilized	2,330,300.00
Beneficiaries	Communities	In-kind	Recurrent expenditures	60,700.00
			Total Project Cost($)	**12,250,000.00**

Describe how any "Investment Mobilized" was identified

The investment mobilized in the Guadalquivir River Basin was identified in view of the growing problem of land degradation which, with climate change, is causing water availability constraints, a situation that is common in the different basins of the country. The investment thus was mainly achieved through the support from the Vice-Ministry of Water Resources and Irrigation that is responsible for coordinating and implementing programs and projects in the central Valley of Tarija in the Guadalquivir basin. As part of the national MI RIEGO Program aims to increase the agricultural area under irrigation then, most of the investments are concentrated on irrigation systems and counterparts are focused on that, through inter-institutional coordination, general administration, execution, follow-up and monitoring .In that sense the Vice-Ministry is implementing irrigation systems in the valley with concurrent investments from the Government of the Department of Tarija and the Municipal Governments of Tarija, Padcaya, San Loranzo

and Uriondo. Additionally, there are investments from the PROCUENCA program (implementedby GIZ, the German government is the donor and the Program is implemented in coordination with Viceministry of Hydric Resources and Irrigation), the Land rehabilitation programme-Tarija (PERTT), NGOs as PROMETA, each one works with a basin approach in the face of current environmental challenges and proposes the Regional ?Fund of the Water?.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Bolivia	Land Degradation	LD STAR Allocation	1,555,012	147,726	1,702,738.00
			Total GEF Resources($)		**1,555,012.00**	**147,726.00**	**1,702,738.00**

E. Project Preparation Grant (PPG)

PPG Required

☐

PPG Amount ($)

43,162

PPG Agency Fee ($)

4,100

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Bolivia	Land Degradation	LD STAR Allocation	43,162	4,100	**47,262.00**
				Total Project Costs($)	**43,162.00**	**4,100.00**	**47,262.00**

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
2500.00	0.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
200.00			

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
460.00			

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1,840.00			

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
40200.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
40,200.00			

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	918			
Male	918			
Total	1836	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The project will contribute to UNCCD 2018-2030 Strategic Framework in all its objectives; as well as Bolivian Land Degradation Neutrality (LDN) National Strategy (2018). LDN is also recognized as an accelerator and integrator for the achievement of the Sustainable Development Goals (SDGs) and for playing a critical role in carbon sequestration and the implementation of the Paris Agreement. Indicator 11 459 families

Part II. Project Justification

1a. Project Description

1a. *Project Description.*
i) Project context, global environmental and adaptation problems

1. The present proposal aims to implement an integrated and systemic model of Land Degradation Neutrality (LDN) in the Plurinational State of Bolivia, that considers the sub-basin as the unit of analysis and implementation of participatory LDN action plans in the Guadalquivir river basin in the department of Tarija in the south of the country (site identified by the government). This will inform lessons learned and identification of best practices for scaling up to address priority land degradation problems in the interlinked mountain and valley landscapes which are typical of the central mountainous region of Bolivia, or the Valleys Macroregion[1] where 3,290,000 people live, equivalent to 30 percent of the national population. The Guadalquivir basin is a sample territorial area that can be a catalyst for national public policies/strategies and participatory planning processes for conservation, sustainable use and restoration of land, and water resources, based on the LDN hierarchy, for application across the Valleys Macroregion. This Region includes six of the ten most important cities in Bolivia, as well as 1,300,000 family farmers who produce basic food supplies for the population.

2. The central valley of Tarija is located in the Guadalquivir river basin. The basin area includes the autonomous municipal governments of San Lorenzo, Tarija, Uriondo and Padcaya with a total population of 262,700 inhabitants in the 2012 census[2]. The Guadalquivir river basin covers an area of approximately 3,194.69 km2 (equivalent to 319,469 ha[3], located between the coordinates of 21? 15? latitude south and 21? 35? longitude west. The basin extends between the Cerro Negro of Chiquiro in the Serrania de Sama with an altitude of 4 674 meters above sea level and the so called ?gorge of San Luis?[4] with an altitude of 1 790 meters above sea level, where the Guadalquivir river joins the San Jacinte river. The average monthly temperature is between 15 and 23 degrees Celsius with a frost-free period of seven months. Precipitation varies from 500 to 700 millimeters per year.

3. The main economic activity is agriculture and most important, viticulture. Due to its agroclimatic conditions, the valley is one of the areas with greater agricultural potential with 40,500 hectares that are suitable for intensive agriculture. In the department of Tarija, agricultural production reached more than 155,000 hectares in 2018) and is increasing due to less job opportunities in the cities, the cropping area expanded by 68,616 ha in 1984 to 123,994 ha in 2013 which means more than doubledin 35 years and the livestock has sixfold the production since 1984 which were 342,768 to 1,925,735 heads of cattle in 2013[2]. The main food crops in 2014 were cereals (38,747 ha), groundnut (3,321 ha.), root crops (10,176 ha.) of which potatoes (9,794 ha.), vegetables (6,280 ha.) and forage crops (852 ha). In the municipality of Bermejo the production of sugar cane (12,000 ha), the rice production is negligeable at 28 ha. For example, in the municipality of Bermejo, and coffee has disappeared due to low yields. However, vineyards expanded from 1,352 ha. in 2014 to 3,232 ha. in 2018, and citrus fruit production from 2,566 ha to 3,028 ha. in the same period as both are

economically viable due to high value of fresh produce and other products (wine, conserves, etc.). Around the San Jacinto reservoir is where the main wine production occurs, namely, the grape, wine and singani (distilled liquor) value chain that accounts for 40 percent of gross domestic product (GDP) of the municipality of Tarija and is one of the main sources of employment in the rural area. The aquatic ecosystem created by the hydroelectric power dam is close to Tarija and also supports pisciculture and tourism activities.

4. The Guadalquivir basin, the project intervention area, which comprises 6 subbasins[5], is prioritised in the National river basin plan of the Ministry of Environment and Water (2013). Two of the six subbasins were prioritized in the present proposal, for attention on the ground based on a) biophysical; b) socioeconomic; and c) climate change criteria and attributes[6]. (See the map 1b Project Map and Coordinates). The situation in Guadalquivir basin is representative of the problem of land degradation in Bolivia?s central mountainous region.

5. The Sama Mountain Biological Reserve (Cordillera de Sama Biological Reserve ? RBCS), is a protected area that covers 108,500 hectares, with 12 rural communities and 4 different eco-regions. It is part of the central valley of Tarija and preserves the areas richest in biological diversity in the Tarija highlands and intermediate valleys. The reserve is comprised of two types of basins: the Tajzara closed (endorheic) basin in the highlands, is the only RAMSAR site in the department of Tarija; and open basins such as those of the Guadalquivir, Camacho and Tolomosa rivers that feed the central valley of Tarija with water for human consumption and irrigation.

6. The biodiversity of the reserve and the buffer zone is rich, and despite many environmental threats and its proximity to populated areas there are 216 species of birds, 69 species of mammals, 23 species of amphibians and reptiles and 13 species of fish[7]. In the reserve there are species that correspond to biogeographic endemisms, especially birds, and nationally threatened species of flora such as *Jacaranda mimosifolia* and *Tipuana tipu* which are Vulnerable (VU)*, Erythrina falcata, Myrcianthes pseudomato and Prunus tucumanensis* that are Endangered (EN), fauna such as the Andean cat *Leopardus jacobita* which is considered critically endangered (CE) at national level and endangered (E) by the International Union for Conservation of Nature (IUCN); the Andean deer *Hippocamelus antisensis* which is considered endangered (EN) at national level (NT) by the Red Book of Vertebrates of Bolivia and vulnerable (VU) by the IUCN; the water blackbird, *Cinclus schulzii* (VU), and *Poospiza baer*i (VU), and the Andean condor *Vultur gryphus*, which is considered vulnerable (VU). Also highlighted is the presence of vicu?a, *Vicugna vicugna*, which is not registered as a threatened species, but in recent years the poaching of this species has increased dramatically.

ii) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

7. The main problems that affect livelihoods and natural resources in Tarija, where the basin is located, are land degradation and biodiversity loss in the dissected mountain and valley landscapes due to extensive grazing and burning for clearing land (chaqueos), uncontrolled fires and intensive cropping systems that cause runoff and erosion and affect land productivity and the quality and availability of water in the valley, as well as settlement expansion and efects of climate change. In particular:

? **Deterioration of the plant cover**, especially in the mountain landscape, due to overgrazing and inappropriate practices of burning and uncontrolled fires, which results in very low vegetation cover on hillsides and bare soil in agricultural plots in fallow periods, that are exposed to accelerated surface runoff and soil erosion. These processes are exacerbated by more intense rainfall events and extended drought periods due to climate change. Currently, 35 percent of the basin is considered to have moderate to severe degrees of erosion. [8]

? **Fire or burning of plant cover**. In 2002, more than 13,500 hectares of vegetation were burned through uncontrolled fires, including Victoria basin, one of the most important sources of water for the Tarija valley. In 2017, another 12,600 hectares were affected in the Sama Protected Area, which is another fundamental source of water supply, with all the attendant side effects of reduced water recharge in the future. There are no adequate fire control measures (firewalls, early warning, brigades) or regulations to reduce the impact of fire (degradation, loss of productivity and livelihoods). The causes are rural communities? poor practices of burning to clear land for agriculture or for the regeneration of pastures for extensive cattle raising. Fires that are set without control expand uncontrollably due to winds. [9]

? **Environmental threats due to expansion of human settlements**: The growth of unplanned human settlements in the foothills of the Sama mountainous region places increasing pressures on grasslands, shrubs, planted forests and native forests, causing deleterious effects on the environmental functions including water supply, loss of habitat, and water pollution. The impacts threaten the recharge of aquifers in the central valley of Tarija.

? **Climate change effects:** More frequent frost and hail risks have impacts on fruit and vegetable production in the central valley, where there is a medium degree of frost threat (30 to 80 days with possibilities of frost). Also heavy rains coupled with effects of land use result in increased erosion and sediment load and flooding of the Camacho, Guadalquivir, Santa Ana, and Tolomosa river valleys.

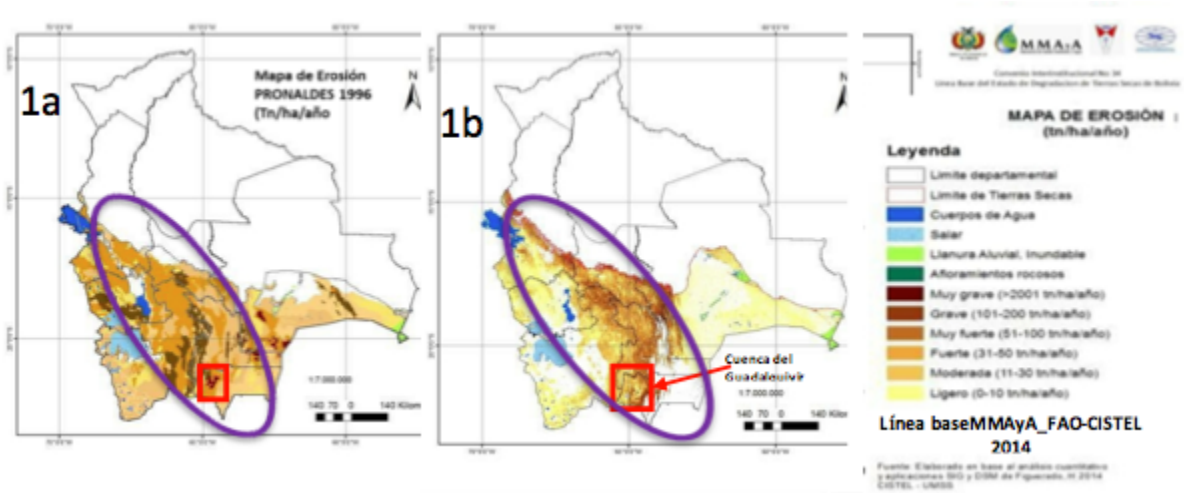

Figure 1. Erosion Map (ton/ha/year).

8. Comparative studies show the increasing trend and strong to very serious erosion processes found in the eastern mountainous region or the Valley macroregion, see Figure 1: 1a (PRONALDES,

1996) [10] and 1b (LADA, 2014)[11] above. The inset boxes highlight the Guadalquivir basin area with serious erosion processes recorded in the last two decades. According to the land degradation evaluation (LADA which shows strong risk of soil erodability measured by the K factor) in the Guadalquivir basin, as indicated by the blue intense tone show in the box in Figure 2 below, which represents soil susceptibility to erosion and the degree of runoff, depending on land use, biological and physico-chemical characteristics, soil organic matter content and geology.

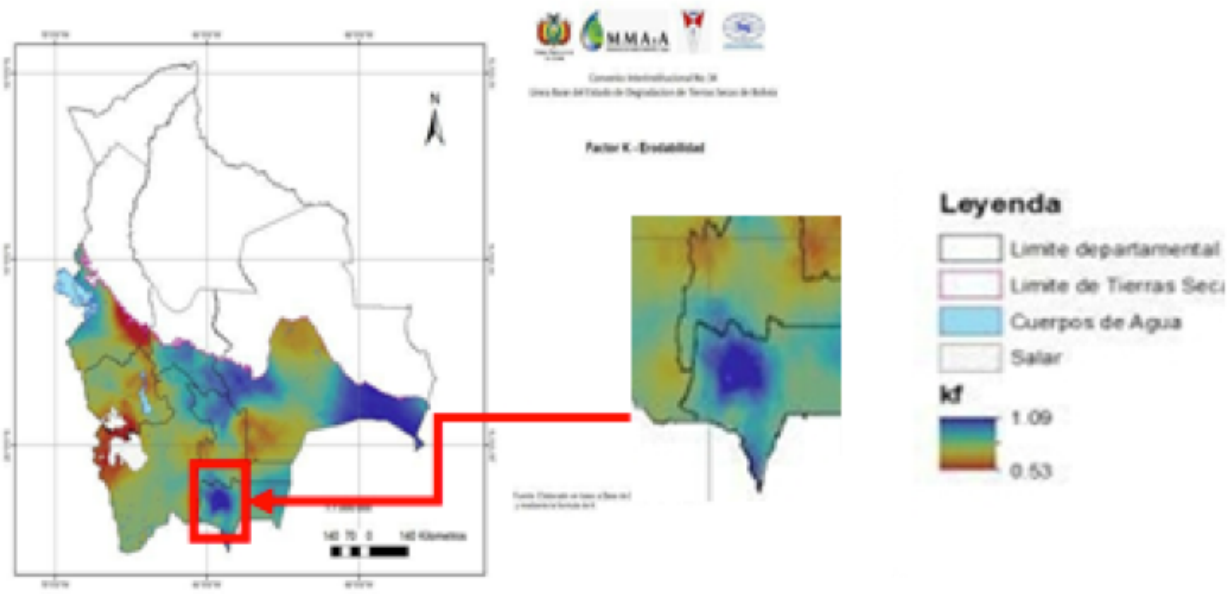

Figure 2. K Factor: Soil Erodability.

Climate change:

9. According to the latest hydrological study of the Guadalquivir river basin, the trend is for decreasing water resources, both during the dry and wet seasons, due to a significant reduction in rainfall and its poor distribution. This is confirmed by the climate change scenarios formulated for both seasons, for the 1980 to 2050 period. [12]

10. Indeed, actual evapotranspiration maps (2018) and future scenarios (to 2050) of the eastern mountainous region or Valleys macroregion (see Figure 3 and the Guadalquivir basin inset) indicate climate change scenarios, that warn of a temperature increase from +2.7 ?C to +3.4 ?C. The RCP 8.5 scenario[13], without mitigation actions, indicates that water requirements for crops and natural vegetation will tend to be greater due to the increase in temperature, which will directly impact on increasing evapotranspiration and risk of drought. [14]

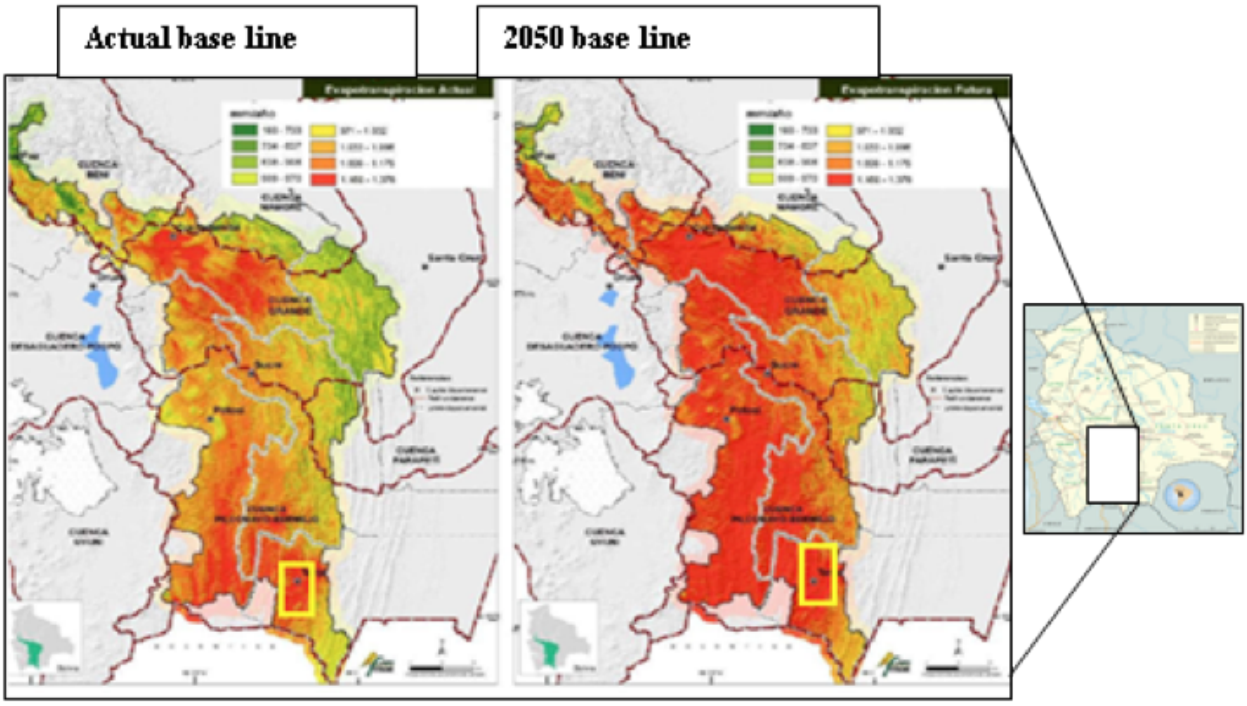

Figure 3. Actual and Future Evapotranspiration to 2050 represented by a red intense color than baseline scenario, scenario RCP 8.5. Eastern mountainous region or Valleys macroregion. Guadalquivir basin in yellow square.

Effects of the advance of the urban area on water sources or buffer zones to protected areas that are important for water recharge.

11. The unplanned expansion of the urban area into the foothills of the Sama Mountain range, which forms part of the buffer zone of the Sama Mountain Biological Reserve, threatens water sources and the flow of the Guadalquivir river basin, as well as access to water for farmers and rural villages. If the advance of the urban frontier and human settlements on water sources persists, the main areas of water recharge would be seriously affected.

12. The central valley of Tarija ? comprised of the (total or partial) territory of four municipal governments (see Map1): Padcaya, Uriondo, San Lorenzo and Tarija ? has grown by 190 percent during the 1992?2012 inter-census period. This growth has led to a proporcional increase in the demand for domestic water supply services during the dry season, while during the rainy season there is a significant deficit in drinking water, due to the sediment load in the water.

13. The population of 262,700 inhabitants in the Guadalquivir river basin is supplied with water from surface and groundwater sources of the Sama reserve. When the water supply from the surface sources decreases during the dry season, a series of underground wells are activated (52 in the city of Tarija) to cover water demand in the populated centers. Despite this effort, however, there are many areas that do not have continuity in service, due to the ongoing water deficit.[15]

Remaining Barriers

A. Institutional fragility and incipient articulation in the implementation of policies, programs and projects.

14. There is a lack of inter-institutional mechanisms that would enable to develop a comprehensive and sustainable system of basin planning and management for the Guadalquivir river basin from national to local levels, due to strong sectoralization, especially at the national and departmental levels. There is a duplication of governmental natural resources and socioeconomic interventions because the basin has not been considered as a unique territorial space for applying integrated landscape or ecosystem approaches. Moreover, there is a lack of local governance mechanisms to foster effective participation and concurrence of actions across all public-private sector actors. The weak local governance is weak due to the lack of tools and processes for participatory land planning at the subbasin level and for an inclusive gender and generational approach (age and youth).

15. Institutional fragility is related to the weak capacities on the ground for implementing public policies to address land degradation, in particular to empower local communities and actors in sustainable land management and to articulate and complement interventions between national and local level. Harmonised public policies and integrated activities are required in order to foster the comprehensive and sustainable management of watersheds, sustainable and resilient production systems, efficient irrigation systems, conservation of water sources and above all, financing and its management to sustain actions on the ground. At the same time, there are inexistent or weak monitoring systems on the ground of progress towards sustainable and resilient land use and related national targets (LDN, NDC?s, Aichi, etc.) hindering the timely identification of problems or limitations that need to be addressed or even positive changes that could be built upon to promote LDN efforts.

B. Inefficient use of water in production systems and lack of technified irrigation and support for viable food chains and women?s empowerment.

16. The lack of technical capacity and financial resources for the optimization of water use through efficient drip and sprinkler irrigation technology, especially for cultivation in the central valley of Tarija, is a barrier. Irrigation results in high levels of water consumption in Tarija, 76 percent of the water use[15], and typical of the situation across Bolivia. (see Figure 4).

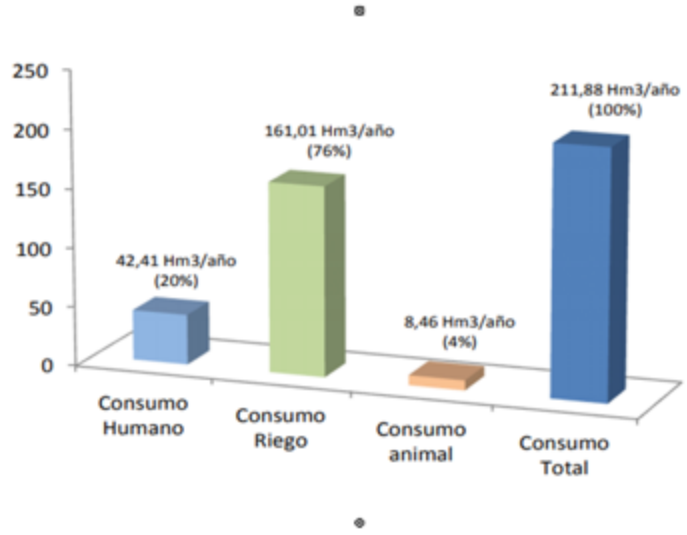

Figure 4. Total water consumption in Tarija.

17. In the Guadalquivir basin and the Central Valley of Tarija, from local sources more than 95 percent of the distribution and irrigation systems is by gravity using large volumes of water, as the adoption of sprinkler and drip systems is minimal, also there is lack of technology for the return and reuse of water or to optimize the recharge of aquifers. Moreover, 93 percent of the irrigation systems in Bolivia have seasonal rivers as a source of water, that is, they provide water in the rainy season but there is a need for investment in small reservoirs lined with impermeable membrane, to store water in dry periods and affordable drip or sprinkler systems. In Tarija, one medium-sized and eight large dams have been built, however sedimentation problems have been encountered that reduces their useful life.[16]

18. The role of women in the rural area of the Central Valley of Tarija is important considering that most of the men "Heads of Household" in a period of the year migrate to look for other sources of income, leaving the women in charge of crops and households. Rural women from the Central Valley of Tarija are key actors in seasonal food production, using ecological approaches with minimal inputs, on plots from 0.5 to 2.5 hectares, but often smaller cultivated areas due to limited access to water for irrigation. Women are members of at least 15 associations of organic producers in the four municipalities of the Central Valley, and they are leaders in organic agriculture, preparing organic fertilizers and other bioinputs for their plots. Women are in charge of deciding what to sow at different times and the husbands, if they are not absent, may help with the heavy work such as tillage and harvest and children also help. It is a means within the reach of women to generate income since they have access to a weekly fair in the city and nearby towns. Through "Bio Tarija" there is ecological certification of the region's products with the national seal; women's participation is from 67% to 100%, 83% of them live in the place where they produce[17]. Other women in the central valley who have not achieved capacities in ecological production are more vulnerable to the climatic factors that affect agricultural production. There is a large sector of peasant women who migrated to the city to sell food or prepare the masses "criollo style". There is a need to recogise and support women in the food and agriculture sectors.

C. Low land productivity in the Central Valley of Tarija[18]

The availability of water for irrigation, which is reduced especially during the low water period, constitutes a serious limitation for the agricultural production of the area. The lack of efficient irrigation system infrastructure does not allow for the expansion and diversification of agricultural production and productivity, especially in the areas of hillsides and high terraces. The alluvial terraces along the Guadalquivir River in low water periods stop irrigating, the high cost of rehabilitation and maintenance required each year for farmers, does not allow the cultivation of all available arable land. Agro-ecological limitations such as, presence of pests and diseases, soils susceptible to erosion and loss of fertility, lack of irrigation. The traditional and rudimentary system of production results in low production and productivity of the agricultural crops currently being grown. There are also limitations in terms of the small amount of irrigated farmland, i.e., the accentuated minifundia with respect to irrigated farmland does not allow for socio-economic development for the valley's population.

In the specific case of wine production, which is the main economic activity of the Tarija Valley, the yield has increased by 37% since 2009, that is, if it produced 12.4 Tn/ha in the last decade, with the implementation of irrigation systems and technical management of the crop the yield has increased to 17 Tn/ha, however the technified drip irrigation systems reaches only 10% at the business level, ie 90% of water for irrigation is traditional by gravity and little efficient furrow, considering that in the valley there are 2. 600 families of which 85% are small producers with plots of 0.5 to 1 ha.[19]

In the case of corn another important crop in the Tarija valley without irrigation can be increased from 1.8Tn/ha to 2.8Tn/ha or potato from 6.7Tn/ha to 10.6Tn/ha these differences are given between crops without irrigation and irrigation respectively.[20]

Irrigation does not solve all aspects of productivity, it should be considered that in the Tarija valley there are signs of lamellar and furrowed erosion as well as badlands and the organic matter content is low and the availability of nutrients low to very low.[21]

On the other hand, in mountain landscapes the animal load is generally uncontrolled and the grazing is done on native fields with or without secondary succession forage vegetation (agricultural fields in rest). Generally, the breeds adapted to these conditions are Creole and mestizo. Animal production and health infrastructure is scarce or absent. The management practices employed, such as the use of food supplements and reproductive and sanitary management, depend on the knowledge of the users to apply the technologies and the available capital. Production is for both self-consumption and the market. New management practices for sheep, goats and cattle must be introduced, such as rotational grazing, which in some areas may involve the use of perimeter fences and the division of pastures. These techniques should ensure that different sources of natural forage complete their growth cycle, so that populations of all species can be maintained.19

D. Inadequate attention to the importance of conservation and sustainable use of Ecosystems in production systems for sustained environmental functions and adaptation to climate change

19. According to Bolivia?s fifth national report to the CBD "Living Well in Harmony with Mother Earth" (2015), one of the main causes of soils, water, vegetation and biodiversity loss is the degradation of ecosystems and loss of habitats through deforestation for the expansion of the agricultural and

livestock frontier (M?ller et al. 2014). Deforestation is estimated at around 200,000 ha/year. Some areas of natural savannahs have also been degraded by intensive cultivation in lowlands and overgrazing and over-exploitation of bofedales at altitude (Zeballos and Quiroga, 2010).

20. Among the causes of ecosystem degradation identified by local communities in the Gudalquivir basin and wider Tarija area are illegal and selective logging of native trees, such as mara, cedar or oak, crop and livestock expansion and uncontrolled fires leading to habitat fragmentation. In the Department of Tarija, comparing the richness of forest species in 2000 (473 species) with the situation in 2100, it is predicted to fall by half due to the impact of deforestation (-197) and climate change (-30) (Andersen and Mamani, 2009).

21. Expansion of crop and livestock besides encroaching on natural habitat specially at mountain landscape, also leads to loss of agricultural diversity due to crop specialization (limited seeds and germplasm varieties), animal breeding for performance but not adaptation, and associated loss of beneficial predators and pollinators and soil degradation with associated loss of soil organic matter, soil biodiversity and reduced carbon sequestration. The solution of the considered barriers in the project resolves consecutively problems of ecosystems, reducing deterioration of the plant cover, reducing fire or burning of plant cover and environmental threats due to expansion of human settlements and climate change, the effects of vegetal recover: increases biomass availability, protect soils increasing the carbon organic stocks (also a global benefit) consecutively recovers biodiversity and enhance water availability resources indeed integrity of actions a virtuous cycle as the nature is. The fragile ecosystem of the Cordillera de Sama Biological Reserve[22], despite being a protected area and harbouring a wetland of international importance (Ramsar site) is in danger due to human intervention: overgrazing, burning and the construction of a road, added to the intense and prolonged droughts. Water is the most affected resource, and local actors noted the risk that the Central Valley of Tarija could lose one of its main sources of water unless substantive measures are urgently taken. The reserve has a Plan Participatory and Integrated Territorial Management; the Conservation of Natural Resources through integrated management of basins including development of agro-ecological projects: beekeeping, hydroponic forage, organic production as well as the Prevention and control of fires. There is a need to review progress, identify limitations and gaps and revise the plan taking into account climate change and other pressures. Among others, there is a lack of recognition of the importance of protected areas and reserves for the maintenance of wild crop relatives.

E. Lack of use of territorial planning instruments and management plans for the use of natural resources to prevent and reduce the processes of degradation, desertification and drought.

22. More than a third of the Guadalquivir basin is affected by erosion and every year between 200 and 600 hectares are degraded[23]. This may be due to institutional weakness and gaps in assessing and promoting alternative SLM intervention strategies, for example, the impact on reversing land degradation with reforestation plans or sustainable practices in agricultural systems are not very visible. The lack of decentralized processes, instruments and training in territorial planning that could support upscaling is another weakness, as is the lack of design and implementation of local plans, with the participation of community members, for the sustainable management of natural resources in the sub basins. There is also a lack of regulation and monitoring of land use to mitigate the reduction of plant cover, change of land use, forest fires (sometimes actually caused by controlled burns in times of

drought), and indiscriminate burning for annual cultivation and overgrazing, and incentivate soil and water conservation and restoration practices. The lack of applied research to identify and analyze the costs and benefits of efficient sustainable management practices of dryland and irrigation crops and natural and improved grasslands is a key weakness impeding wider investments.

23. The institutional barrier includes a range of factors, including staff turnover, lack of technical capabilities and financial resources to identify and scale good practices, lack of monitoring and evaluation processes to identify the successes and failures of interventions, absence of innovative methodologies and technologies (remote sensing, sensors, mobile phones apps, etc.) to learn about and promote the sustainable management of natural resources (vegetation, soil, water) and the restoration of ecosystem services. There is also a lack of capacity to develop the baseline and monitor the implementation of LDN and identify successes and failures of interventions to avoid and reduce degradation and restore land use systems to increase productivity and adapt to and mitigate climate change.

F. Absence of public, private or mixed intersectoral and financial mechanisms for the integral and sustainable management of the Guadalquivir river basin.

24. Governance policies cannot be developed if economic resources are not available yet there are no targeted financial mechanisms in the Guadalquivir basin for co-financing of conservation activities, protection of water sources and productivity actions to local Institutions, municipalities and indeed farmers who are involved at basin natural resources protection and restoration and a mixed public and private directory[24] this mechanism is designed by SEDEGIA, PROMETA and Municipalities Governments, the technical assistance for the development of integrated watershed management activities are in charge of local institutions. To complement national and departmental planning there is a need for local governance mechanisms to plan at territorial or sub-basin level and make informed decisions to protect and manage land and water resources including surface and groundwater in an integrated way. Activities should focus on strengthening livelihoods and building resilience of rural communities to adapt to and reduce risks of drought and other effects of climate change.

25. Such management plans require public-private sector collaboration and innovative financing mechanisms with private sector institutions will be represented by the wine and singanis exporting companies, the family farmers and the Fund of Water who will establish incentives for the conservation of water sources and a co-benefit of carbon fixation and capture in plant cover and soils. A key area for collaboration is to link efforts through this project to preserve or restore land and water resources and sustainable production systems in selected subbasins through an integrated and participatory watershed approach (GEF) with concurrent projects and investments, for example, in water supply, drinking water and water treatment and reuse for the population of Tarija.

26. It also requires important technical and financial resources for the design of intersectoral and local plans that contribute to the three pillars of ensure sustainability (environmental, economic and social) as well as governance through an inclusive approach for the development of activities between the different actors, according to their abilities and a clear allocation of roles and responsibilities and taking into account gender, intergenerational and indigenous issues.

iii.) Baseline scenario and any associated baseline project

Socioeconomic Context

27. The Guadalquivir river basin is composed of the municipalities of Uriondo, Padcaya, San Lorenzo and Tarija and is mainly characterized by being the most populous and densest territorial unit of the department, a large share family farmers. The population growth rate in the city of Tarija is relatively high, with intercensal growth of more than 33 percent in a decade according to the 2001 and 2012 censuses ? from 153,457 to 205,375 inhabitants[25]. On the other hand, in the case of Uriondo and San Lorenzo, which are predominantly rural municipalities, intercensal growth did not exceed 11 percent and in the case of Padcaya growth was negative. In addition, it is an area with great development and agricultural potential.

The economy of the central valley of Tarija centers on the cultivation of 3,000 hectares of vineyards, just over 50 percent of which is destined for consumption as table grapes and the rest to wine and singani production (INE, 2013). It generates USD 24 million annually through the production of 30,000 tonnes of grapes. Some 80 percent of the vines belong to small producers, generating 2,300 jobs for rural households and 1,100 direct jobs in the wineries, and some 12,000 jobs in complementary activities such as transport and marketing. Additionally there are 2,367 jobs in other crops such as maize, fruits, onions, and garlic. Extensive livestock is an important activity both in the valley and on the hillsides with cattle (300,000 heads), causing overgrazing. Actually the mean yields of some crops in Guadalquivir valley are: maize 1,5t/ha, potato 7 t/ha, green pea 1,5t/ha, peach 16 t/ha, grape 12t/ha.

28. The predominant land tenure regime in the Central Valley of Tarija is ?ownership? with more than 90% of the farmers de facto owning their land, and almost 80% with regularized titles according to INRA[26]. This will promote access to incentives and other schemes that promote the adoption of sustainable practices. Also in many cases the parcels are very small and play a secondary role in terms of livelihoods so there is little incentive for sustainable use.

29. In the Guadalquivir basin there is a very limited existing governance structure that is weak and limited in scope to only the water sector and does not include an integral approach of water management across all relevant sectors (such as agriculture, energy, land use, rural and urban development). In this context, it is necessary to incorporate an integral view of challenges and solutions focusing at basin level where it is necessary to take actions of preservation of the natural resources on the geographic levels of landschapes and water basins.

30. In this way, the project objectives aim to avoid land degradation that reduces water availability to human consumption and agricultural irrigation in a holistic manner. Notably, the Political Constitution of the State considers in Article 108 "a duty of Bolivians to protect and defend natural resources and contribute to their sustainable use, in order to preserve the rights of future generations.? Article 299 of the Constitution states that ?basin protection is an obligation of the central level of the State and the Autonomous Territorial Entities?, Article 375 is more specific about basins: ?It is the duty of the State to develop plans for the use, conservation, management and sustainable development of river basins? and ?The State shall regulate the sustainable management and administration of water resources and basins for irrigation, food security and basic services, respecting the uses and customs of the communities.? Article 23 of Law 300 of Mother Earth has the same meaning in its article 23 of

"Promoting the conservation and protection of water recharge zones, headwaters, national security strips of the country and areas with high conservation value, within the framework of integrated watershed management". Article 87 of Law 031 of Autonomies cites "Execute the general policy of conservation and protection of basins, soils, forest resources and forests" Article 88 of the same law states ?The regulation of integrated management of basins, investment, water resources and their uses.? Article 13 of Law 144 of the Productive Revolution states: "The construction and improvement of irrigation and aqueduct infrastructure, identifying the best systems for capturing water in terms of quantity and quality, implementing efficient technologies for the use of water in plots and soil conservation, and recovering knowledge, science and technology.?

31. Up to 2020 in the Central Valley of Tarija a total of 9,021 hectares of irrigation systems have been implemented in the four municipalities, as detailed in Table 1. However, more than 90% are by traditional gravity-fed systems with canals and flooding with important water losses and there has been minimal investment in more efficient drip or sprinkler systems, except by larger farmers with access to capital. It is worth noting that land potential for intensive agriculture is 54,200 hectares in the Department, which is six times that actually cultivated [27].

Table 1. Source Ministry of Environment and Water. 2020

Municipalities	**Surface_under_Irrigation (ha.)**
Padcaya	1,556
San Lorenzo	3,384
Tarija	3,990
Uriondo	91
Total general	**9,021.35**

32. The Ministry of Environment and Water is the governing body for water resources management with autonomous units such as MI RIEGO and MI AGUA. These also have regional offices in Tarija and are in charge of investments by the State respectively for the implementation of irrigation projects and of water supply systems for human consumption at rural level. PROCUENCA is another national entity responsible for the integrated management of basins, especially with reforestation programs.

33. The Departmental Government of Tarija and the Municipal Governments of Tarija, Uriondo Padcaya, and San Lorenzo administer counterpart resources, through their Annual Plans and budget, for investments to implement projects related to water supply for irrigation and human consumption under MI RIEGO, EMAGUA and PROCUENCA. At the local level, there is also the PERTT Executive Program for the Rehabilitation of Land in Tarija, which for decades has supported the reforestation of the central valley to recover degraded land. As already noted the Sama Biological Reserve (SERNAP)

is a mountainous protected area that is extremely important for its biodiversity resources and as a recharge area for surface and underground aquifers in the Central Valley of Tarija.

34. MI RIEGO (autonomous unit within the Ministry of Environment) provides important investments in infrastructure to extract, transport and control the water through canals, sluices and other structures and distribute it to the irrigated areas and in many cases also levelling of the land. Therefore the on farm investments need to be provided by the farmers which is usually using traditional furrows systems as they lack finance and knowledge to adapt and improve irrigation systems which allows efficient water usage. The farmers require access to finance and technical assistance to technify the irrigation systems, where feasible adopt sprinkler or drip systems and improve irrigation scheduling to distribute water equitably and thereby improve water use efficiency. The farmers also need to restore their increasingly degraded soils through adapted crop-soil-water management techniques to enhance productivity and quality of their annual and perennial crops and in turn to access to the market to obtain a fair price for their products.

35. The German GIZ, in coordination with the Vice-Ministry of Water Resources and Departmental authorities in Tarija, has the mission of implementing PROCUENCA, which aims at strengthening the capacities of the stakeholders at the basin level to improve integrated water resource management. To this end, plans and projects are prepared to increase water security and the resilience of the population vulnerable to climate change. It seeks to implement programs and projects related to water resources related to drinking water, sanitation, for productive issues through intelligent conservation agriculture and environmental services considering the basin

36. There is an absence of tools and incentive or compensation mechanisms to address negative, social and environmental externalities in agriculture in Bolivia (land degradation, water footprint, greenhouse gas emissions).19. Only when their livelihoods improve can the local communites through their territorial plans and with governmental support, effectively contribute to preserving ecosystems, reducing demand on water resources, fixing organic carbon and reducing contamination of water through agrochemicals.

37. The inhabitants of the four municipalities of the Central Valley of Tarija have as their main concern to ensure improved availability of water in the Central Valley of Tarija now and in the future. This is why an initiative is recently being developed at the local level across a number of actors for developing a Water Resources Management Plan for the Guadalquivir River Basin in order to improve water security, reduce water risks and strengthen resilience to climate change. Studies in 2013 led to the "Departmental Water Plan of Tarija" and work is being done on developing a Water Fund for the Central Valley with State and private resources, to provide financial sustainability to the development of initiatives in integrated water resource management. The aim of this body being to finance the investment requirements that the public sector does not cover, through its management instruments and budgetary allocations. However, these water governance mechanisms are not yet securing tangible benefits in terms of water availability, access and quality for the land and water users in the agriculture sector and in terms of food The monitoring system will follow bases of neutrality is based on quantifying the baseline and then assessing the balance between the area of ?gains? (significant positive changes/improvements) and area of ?losses? (significant negative changes/degradation) relative to the baseline, within each land type where have to employ remote sensingother example of monitoring out of the proposal, is the serious contamination of the river through a residual water treatment plant in

Tarija, for which remedial measures are seriously needed to avoid serious health risks. There is clearly a need for continuous monitoring, analysis and improved data availability for decision making and investments in the basin and subbasins based on land and water resources and trends, taking into demographics, climate change, land use change and technological developments.

38. There are mechanisms to foster and strengthen the participation of civil society, including women, youth and local communities through existing local governance mechanisms. However in the Guadalquivir River Basin, relevant governance bodies and instruments must integrate the following fundamental elements in order to establish an effective, efficient and concerted management of the basin: i) Citizen Participation and Guarantee of Transparency; ii) Articulated Policies and Standards; iii) Strengthened Institutionality; iv) Territorial planning for the management of natural resources at sub-basin level and v) Regular Budget Allocation.[28] Moreover communication and decision making mechanisms are weak, such as platforms for information sharing and dialogue between interest groups, and there is a lack of decentralised planning tools and regulations to control use of land and water resources, to recognize and strengthen communal rights over resources and cope with increasing pressures on resources and water scarcity. This leads to limited capacity to know about and apply policies and legislation to address land degradation, conflicts over resources, to secure tenure, and to reach agreement and consensus on coordinated actions by all interested parties to promote sustainable use and management of natural resources.

39. The overgrazing and burning of hillsides in the mountains and reduced vegetation cover leads to a serious cascade of problems (runoff, soil erosion and soil compaction which reduces productivity and accelerates desertification processesresulting also in flash floods at raining periods and high sediment load to rivers and sedimentation and loss of capacity in reservoirs recharge in the drainage systems of in the sub basins. There is a need to capitalize on investments in water storage through investing in more sustainable livestock and grazing management and in forestation of recharge areas to restore water flow and reduce risks. The technical institutions of Tarija know of these practices but any support is fragmented as there is a need for collaboration among water, agriculture and environmental sectors and interaction and agreement between farming communities and local institutions on responsibilities and required needs and capacities for basin level management of natural resources.

40. There is a need to bring together across sectors the sectorial technical knowledge and farmer knowledge systems in order to develop clear intervention strategies in the area. The nascent Platform for the Guadalquivir Basin could play a key role in this process and in the participative planning of sub basins involving civil society representatives, local institutions, Productive Secretary of Departmental and Municipal Governments, NGOs as well as PERTT, PROMETA, PROCUENCA.

41. There are localized interventions in other regions of the country that could be introduced and adapted to local farming situations . For example, through small Technical cooperation projects with the Ministry of Agriculture, FAO Bolivia is piloting the adaptation of Conservation Agriculture practices in the highlands of the country for cropping systems based on quinoa and other indigenous crops as tarwi (*Lupinos mutabilis*), fava bean (*Vicia faba*), very important for their high level of protein and nitrogen fixation in the soil. Also silvopastoral management practices are being developed with rural communities in the central highlands near La Paz to recover overgrazed areas on mountain slopes with the Bolivian NGO REVERDESER (in Spanish), Association for strategic environmental

development). The results of both initiatives are substantive and worthy of replication through the current GEF project.

42. According to the index of femininity in the country, from the age of 16 women in rural areas move to the cities in search of better living conditions.[29]. This is the situation in Tarija where the index is 1.01, that is to say slightly higher than the average, with a a slight net migration to cities of young people, both men and women, in seeking higher education centers and job opportunites. This is fueled by the lack of inclusive processes to incorporate rural women into productive initiatives in the agricultural systems and to improve access to markets and income through value addition and ensure gender equity and effective governance. [30] Nonetheless it is thought that this trend is reversing due to lack of opportunities in cities.

43. In the Guadalquivir basin, organic agriculture is practiced by women in small plots of land and supplyng markets in urban areas, which has a reasonable level of success because of the hard work and capacitiy of farmers and their high level of organization. However conservation agriculture techniques are unknown in the area and the women farmers face problems of low productivity due to poor soil conditions, including very low oganic carbon content and erosion.

Institutional Context

44. The Plurinational State of Bolivia, within the framework of United Nations Convention to Combat Desertification (UNCCD) [31], has developed its National Strategy[32] to achieve Land Degradation Neutrality (LDN) by 2030 with which this proposal is aligned. The LDN strategy seeks to avoid and reduce degradation, and rehabilitate degraded lands and soils, including lands affected by desertification, drought and floods (SDG15.3). According to the LDN Strategy, the country will (i) strengthen management of at least 400,000 hectares in flat arid areas or with reduced slope, (ii) implement at least 20 agroecological land management projects in an area of at least 200,000 hectares, (iii) establish competitive seed funds for small soil conservation projects in arid and semi-arid areas that favor the sustainable management of at least 100,000 hectares, (iv) reduce laminar erosion in 200,000 hectares of sloping areas. The LDN strategy commits to support agropastoral management on at least 50,000 hectares in river basins with high erosive potential and with significant impact of small livestock (especially in the south of the country). Moreover, 700,000 hectares are expected to be under irrigation by the PDES to enhance agricultural productivity. The Government has sets its targets and this project aims to show how the LDN strategy can be implemented in a prioritized river basin and integrate across agricultural and environmental sectors.

45. Currently, there is more competition among water users given the absence and validity of clear regulations on access to resources within the basin. According to the country?s NDC[33], the government is seeking to triple both the available water (to 3,779 million m3) and the area under irrigation (to 1 million hectares) in an effort to strengthen food security with resilient agricultural production systems. In addition, the government established a goal to reduce illegal deforestation to zero by 2020 and to strengthen environmental functions on approximately 29 million hectares by 2030 (i.e. increase carbon sinks, organic matter and soil fertility, improve biodiversity conservation, and water availability). There is a need to develop a clear strategy to work towards these goals and address

identified barriers in an integrated manner taking into account actual and potential impacts of land use and climate change and through improved territorial planning and governance arrangements.

46. The Ministry of the Environment and Water (MMyA) has initiated the implementation of the 2019 ? 2030 Policy on integrated and sustainable biodiversity management (GISB)[34]. Among its strategic objectives[35] in promoting the policy is to prioritise strategic ecosystems and through a territorial approach and respect of the rights of Mother Earth, to contribute to maintain integrity of the livelihood systems, eliminate poverty and foster integrated development for wellbing.

47. In relation to the institutional framework and the project framework, some of the most important institutions at the national and department levels are shown in Section II-2 (Stakeholders). Table 2 below shows the baseline programs or projects and their associated budgets:

Table 2. Baseline projects and programmes.

Programme o project	**Relevant activities in the basin or the Department of Tarija**
Vice-Ministry of Water Resources and Irrigation	Executes public policies, regulations, plans, programs and projects, such as the development of actions for the preservation of water resources and irrigation with an integrated watershed approach . US$10,013,308 Part of the resources in execution
Plan Nacional de Cuencas (PROCUENCA)	The National Plan of Basins is to improve the quality of life of the communities and inhabitants through the Integrated Management of Basins in Bolivia and the Integrated Management of Water Resources, under modalities of participation and self-management, as a support to human and environmental sustainable development. The program is expected to invest US$434,000 over the next three years
Autonomous Government of the Department of Tarija	Aims to Link and articulate between civil society and public and private organizations, to prioritize the demands of urban and rural development. The program is expected to invest US$733,0300 over the next three years
Municipal Governments of Tarija	Idem. The program is expected to invest US$270,000 over the next three years
Gobierno Municipal de Padcaya	Idem. The program is expected to invest US$875,500 over the next three years
Gobierno Municipal de Uriondo	Idem. The program is expected to invest US$47,913 over the next three years
Gobierno Municipal de San Lorenzo	Idem. The program is expected to invest US$86,000 over the next three years
INRA Tarija	National Institute of Agrarian Reform which has the main objective to provide small farmers titles of land which means the consolidation of land tenure

iv) Alternate scenario, objective and description of results and products by project components

48. The objective of the project is to ?Develop and implement an inclusive territorial planning and governance strategy as a model for the conservation, restoration and sustainable management of soils, water and integrated production systems that enable to achieve Land Degradation Neutrality (LDN) across the Guadalquivir River Basin (GRB), based on environmental functions of the Strategic Guadalquivir River Basin with emphasis on water recharge areas.? One of the main sources of income for the inhabitants of the Guadalquivir basin is agriculture. Thus, all investments in technical assistance services that will be directed for the optimization of water use and improved management of natural resources will be realized through improved governance structures. This improvement in local governance structures for Land Degradation Neutrality, that will be achieved through a participatory model involving not only the local institutions but also the local communities. Experiences and lessons learned from this improved governance system will be monitored and evaluated and best practices can be applied in other areas of the country.

49. This project will be implemented through four components with the purpose of strengthening and/or advancing in the implementation of policies, programmes and strategies supporting the development of sustainable and diversified productive systems, the implementation of financial mechanisms to encourage and scale up the broad adoption of good practices of sustainable land management throughout the basin, and monitoring that shows evidence in the LDN hierarchy (avoiding and reduction of degradation and restoration of degraded areas, to protect environmental functions and strengthen the livelihoods of producers).

50. All this will be achieved through the application of comprehensive and multi-scale management approaches and the construction of a common vision in the area of intervention of the project that allows for the articulation and implemention of the policy, programmes and strategies of forests, water and soil in the territorial plans of the sub-basin and the strategic Guadalquivir River basin. It will allow for the overcoming of the barriers mentioned above and, at the same time, will strengthen synergies between strategies and plans and make progress towards the commitments related to the three Rio conventions in the basin.

Component 1: Strategic framework for strengthened and Gender-sensitive governance and integrated territorial management enabling the–restoration of vegetation and environmental functions and sustainable socio-economic development in the Guadalquivir River Basin.

Outcome 1.1. Effective governance mechanisms for water, soil and vegetation management in landscapes of the Guadalquivir River Basin have been designed, validated and implemented contributing to the goals of LDN, sustainable production systems.

51. The integral management of natural resources is based on the construction and effective implementation of public policies and national, sub-national and/or local norms within the governance framework under the principle of citizen participation. Likewise, the integral management of natural resources and water management must play a catalytic role in national and departmental policy according to municipal needs and realities that allow effective and efficient management, and establish guidelines for action and strategies based on the analysis performed by local actors, whether institutional, social or economic.

52. In order to achieve the proposed outcome, the project will implement the following outputs and activities:

Table 3. Output/Activity matrix for Outcome 1.1.

Outputs	Activities
1.1.1. Platform for the governance of water, soil and vegetation in the Guadalquivir River Basin, operates strengthened and institutionalized as a multilevel and inter-institutional space sensitive to gender with implementation actions from the government, producers, marketers, financial sector and academia.	? Carry out participatory design workshops on the platform with the key stakeholders in the Central Valley of Tarija. ? Operationalise and strengthen the Platform as a strategy to support the Governance of Water and Soils in the Agricultural Territories of the Guadalquivir River Basin. ? Develop internal norms and tools to manage intergovernmental and private agreements for the institutionalization of the Platform of the Strategic Basin of the Gudalquivir River. ? Technically assist the Platform's secretariat in order to carry out reporting and follow-up on the established agreements.
1.1.2. Two Sub-Basin Integrated Territorial Development Plans (PDTI-SC, in Spanish) (Yesera and los Pinos) including governance arrangements developed using integrated diagnostic, analytical and water balance tools (component 1), piloted and evaluated (component 2) and validated as a model to achieve LDN, and sustainable production systems.	? Two sub-basin Integrated Territorial Plans PTDIs and community agreements (Yesera and los Pinos) leading to multiple benefits in terms of sustainable land use, restored ecosystem services, enhanced productivity and livelihods and climate resilience: 40,200 ha (Core indicator 4.3) ? Support the process to prepare and generate financing for the pilot execution of two sub-basin Territorial Plans of Integrated Development (PDTI-SC, in Spanish) covering an area of 4,299 ha. This includes a Yesera basin (2,597 ha) and Pinos basin (1,702 ha) ? Carry out participatory design workshops to advance the application of policies and regulations and promote cross-sector and multi-actor collaboration as a basis to implement the PTDIs, put in place governance arrangements (such as communal tenure arrangements, local regulations and bye-laws, mechansims for intersectoral collaboration and interaction between farmers and institutions) and thereby achieve LDN. ? Review results with a view to revising the PTDI process as an LDN implementation model for scaling up in the Guadalquivir basin and more widely.
1.1.3. Capacity building strategy developed and under implementation for government, civil society and academia on (i) LDN baseline, design and implementation, (ii) inclusive governance mechanisms for community-led integrated territorial development, and (iii) data collection and monitoring of environmental functions and livelihood benefits.	? Baseline data compiled for natural resource monitoring systems in the Guadalquivir basin. ? Report to the Water resources information systems, SIARH (MMAyA) and SIHITA (Department of Tarija), for incorporation of any changes or additional information collected for the Guadalquivir basin. ? Conduct a capacity needs assessment to determine gaps that will be addressed by the project. ? Raise awareness of key stakeholders in LDN and integrated basin and sub basin management Develop a capacity building strategy to implement LDN principles in the Guadalquivir basin, in line with national efforts. ? Present and validate the strategy. ? Organise a LDN distance training course and develop information sharing materials with Universities and in coordination with the UNCCD knowledge hub. ? Conduct LDN training and planning workshops.

53. Proposed Outcome Indicators include:

Indicators:
-Number of actors (tracked by gender and youth) that participate in the Territorial Consultative Platform (public sector institutions, private sector e.g.traders, and producers organizations).
-Model Territorial plan and Governance Strategy for Integrated Soil, water and vegetation management and LDN in the Agricultural Territories of the Guadalquivir Basin has been designed and piloted, with a gender approach.
-Number and scale (beneficiaries and hectares) of government programmes interventions that integrate the LDN hierarchy (avoid, reduce, reverse and other SDG targets).
-Share of women and youth representing different target groups participating in the development of the 2 Integrated Territorial Development Plans.
-Two sub-basin Integrated Territorial Plans PTDIs and community agreements (Yesera and los Pinos) leading to multiple benefits in terms of sustainable land use, restored ecosystem services, enhanced productivity and livelihods and climate resilience: 40,200 ha (Core indicator 4.3)

Component 2: Demonstration of sustainable land and forest management practices in the Central Tarija Valley

54. The component aims to implement sustainable practices that contribute to a reduction of land degradation through implementation of basin management plans, holistic silvopastoral management, reforestation of mountain landscapes, and conservation agriculture. The main beneficiaries are at least 200 family famers in the project intervention area that practice organic agriculture (output 2.1.1). Additional benefits would include the mitigation and adaptation of climate change, and sustainable income generation for the communities in the Central Tarija Valley.

55. At mountain landscape level the component seeks to implement rotational silvopastoral management to recover pastures reducing overgrazing, creating conditions to improve biomass and protect microbasins improving water availability. The component further seeks technical support for the establishment of 12 Farmer Field Schools (output 2.1.2) and the establishment of a data and information monitoring system (Output 2.1.3)

Outcome 2.1. Technological innovation processes are implemented for sustainable and resilient production with an integrated approach to basin management Plans, LDN indicators such as the introduction and validation of technologies in productive tasks, the development of new business models and efficient marketing systems.

56. The proposed project will (i) support local stakeholders improve their production systems to strengthen the local economy through improved silvopastoral, irrigation and conservation agriculture practices (ii) build capacity of local stakeholders to improve the organizational systems of local

communities, and (iii) finance activites to avoid and/or reduce degradation, recover environmental functions and thereby improve life systems and resilience to climate change in the region.

Table 4. Output/Activity matrix for Outcome 2.1

Outputs	**Activities**
2.1.1. Selected activities under the PDTI-SC (see 1.1.2) are implemented by project beneficiaries, leading to increased productivity, reduced land degradation and improved BD conservation in the Central Tarija Valley	? Design and develop guides and catalogues on conservation agriculture, organic agriculture. ? Participatory community planning for holistic silvopastoral management, protection or reforestation of water recharge areas, conservation agriculture, efficient irrigation systems. ? Implement pilot investments to ? Restore agricultural land and silvopastoral areas in 2,300 ha of hillsides (Core indicator 3.2: 460 hectares and core Indicator 3.3: 1840). ? Restore forests in water recharge areas covering 120 ha ? 200 small farmers (covering 200 ha) implement conservation and organic agriculture (Core indicator 3.1)
2.1.2. Integrated technical support and extension services strengthened to support implementation of the participatory action plans (in 2.1.1) to generate environmental and socioeconomic benefits.	The project will support the establishment of at least 12 Farmer Field Schools which will contribute to the training of community technicians (50 percent women and 30 percent young people) and professionals specialized in conservation agriculture, organic agriculture, pasture management, efficient irrigation systems, and product marketing and diversification. In order to achieve this output, the project will: ? Develop protocols for efficient and resilient irrigation systems (i.e. taking into consideration soil and water conservation, water use efficiency, renewable energy, ecological inputs) for the production of various crops. ? Restore irrigation systems efficiently to increase crop and fruit tree yields. ? Development and monitoring of activities through Farmer Field Schools and the farmer-to-farmer model ? Conceptual design of Farmer Field Schools. ? Preparation of the academic curriculum of field schools. ? Sign agreements with the Universities and the Platform in order to implement the field schools to train community professionals and technicians. ? Implementation and evaluation of Farmer Field Schools ? At least 200 families have access to technical assistance/extension services

2.1.3. Data and Information System compiled for the target Sub-basins using a participatory approach and robust practical tools to assess ecosystem functions / services (biophysical and socioeconomic).	The project will support the development and validation of a monitoring system under Output 1.1.3. This system will be used to keep track of actions (conservation agriculture, organic agriculture, grassland management, efficient irrigation systems, and product marketing). and integrated territorial management processes implemented by the project. By the end of the project, the 2 sub-basins will be monitored using this system and the tool will be available for wider use. Key activities include: ? Training of stakeholders on data collection ? Procurement of measuring tools ? Training of stakeholders on use of measuring tools ? Support in implementing the monitoring and feeding data to the information system at various levels

57. Proposed Outcome Indicators include:

Participatory action plans results in:

-2,300 ha of degraded slopes under silvopastoral management restored. (Core indicator 3.2: 460 hectares and core Indicator 3.3: 1840 hectares)

- 259 families (50 percent women and at least 30 percent youth) and 10 producers/marketing associations benefiting from innovative, sustainable and diversified productive systems in 2 model Sub-basins.

- Percent increase in annual productivity in current crops and diversified agricultural products.

-200 families in 200 ha, have access to technical assistance services on irrigation systems complementing conservation agriculture and holistic management (Core Indicator 3.1).

Component 3: Financial mechanism for the conservation and integrated management of water, soil and vegetation, as well as the establishment of productive ventures composed by associated family farmers.

Outcome 3.1. The regional financial mechanism supports the adoption of good practices based on soil management and restoration, efficient water use, vegetation conservation and the preservation of environmental functions.

58. A regional financial mechanism (RFM) will have to be established by the Bolivian State, and thus, can legally receive funds from State entities (Central Government, Departmental Government, Municipalities, etc.). The mechanism will have an autonomous management and a board composed by civil society and the State which manages the funds and technical cooperation, but fundamentally orders local contributions for the conservation of Water Sources: State bodies, cooperatives, private companies, among others. In this sense, for the execution of actions, the fund should resort to entities that already have installed capacity; government, municipalities, decentralized entities, which manage resources; that is broadly participative where the project can be involved and involves all the actors

linked to the subject: social organizations, business people, universities, and that contributes from its board of directors to adequate water governance in the Central Valley of Tarija

59. The regional financiam mechanism financed by public-private institutions to rehabilitate and conserve the sub-basins that supply the Central Valley of Tarija will support the financing of projects that seek to achieve Integrated Water Resources Management and the protection and rehabilitation of soil. It will catalyse active participation of all those involved in water management in productive sectors and facilitate associated incentive mechanisms to support local producers and community enterprises. The regional fund practices in relation with the present project is closely related with 20 ventures implemented by associations with productive initiatives complementing with natural resources management, productive activities that generates income in a reciprocity way, the project and other technical institutions have to bring technical asistance. Two options have to be established: a revolving fund or grants/ counterparts by associations depending on the economic situation of family farmers.

60. The project will work in a first instance under administrative, operational mechanisms and financial management arrangements established by the Regional Institutions, catalyzing the economical resources capture based on State and private sectors on annual budgets ensuring access for rural families and associations.

61. The fund will be established in the region by means of a Law that is being developed by the municipalities located in the Guadalquivir Catchment. This Trust Fund, called Departamental Fund for the Protection of Water Resources (FODAGUA), will constitute a financial mechanism to promote and guarantee the sustainability and preservation, conservation and protection of water sources, and will pursue the following purposes:

- To develop policies, programs, and projects for an effective, efficient, rational, and sustainable management of water in the communities near the water sources, which shall include enclosures of the water sources and reforestation with native vegetation.

- Execute plans and programs and projects for the protection of water sources, water management, reforestation and integrated management of water basins.

- Promote sustainable productive activities with the inhabitants of the potential water recharge areas that have been prioritized;

- Promote, and support the organization and participation of users to improve water management, drinking water systems and encourage their broad, informed participation with the capacity to make decisions and assume commitments;

- Provide ongoing technical assistance to water users on issues related to efficient and sustainable use, water conservation and productive projects;

- Promote the development of markets for technological services related to the efficient and sustainable use of water.

- Promote a culture of saving and efficient use of water resources.

- Partially or totally finance the implementation of investment projects aimed at the conservation of water sources through the Trust Fund.

According the to the law that is being developed, the fund will support two main lines or work:

- The implementation of development activities, which are determined on the basis of projects aimed at priority sectors for the FODAGUA, in order to increase economic and social development.

- The implementation of investment projects, established by virtue of a specific purpose, entrusting the Trustee with the administration and/or implementation of a given work or specific mandate.

62. The present project, under component 3, will conduct activities to support the development of the law that will establish and regulate the fund, providing studies and technical inputs. These activities are outlined in Table 5.

Table 5. Output/Activity matrix for Outcome 3.1.

Outputs	**Actividades**
3.1.1 Regional Fund for Sustainable Water and Soil Management and adoption of good practices in the Central Valley of Tarija capitalized.	? Prepare the conceptual and technical document of the social and economic importance for the constitution of a regional Fund of the Central Valley of Tarija that finances the conservation of soils and water management practices in the the Central Valley of Tarija. ? Prepare regulations for the administration and operation of the Regional Fund for financial promotion. Design a simple system for access to the Fund for families in rural areas and/or producer associations in rural areas. ? Establish an information system for users seeking access to the fund with a focus on families and / or associations of producers in rural areas. ? Support the technical and legal requirements for the development of the Departmental Fund for the Protection of Water Resources.
3.1.2. Effective management of financing and investment in local producers (based on land, vegetation and water management/ restoration) at family or association level.	? Financial management and direct financial promotion transferred to local producers that carry out conservation agriculture, organic agriculture, pasture management, reforestation and product diversification and marketing activities. ? Financing of community productive enterprises and support with other identified incentive measures ? Monitoring efficiency and impacts in promoting the adoption of good land management practices and identifying new barriers and solutions such as land and water tenure.

Outputs	Actividades
3.1.3 Family productive entrepreneurship strategy guided by a Steering Committee led by women, financed and technically supported for viability and sustainability.	? Identification of target communities ? Development of Terms of reference and election and training of Steering Committee members ? Participatory analysis of potential investment activities, included market assessment, using tools such as FAO?s Rural Invest ? Detailed financial analysis of selected investment activities ? Preparation of proposals for financing by the Regional Fund (50% led by women)

63. The project will support the design of the mechanism to capitalize the fund and involve the different stakeholders that will contribute to the fund including: state bodies, cooperatives, private companies, among others.

64. Proposed Outcome Indicators include:

-Total funds allocated to the financial mechanism and number of funding partners supporting farmers?production and adoption of sustainable farming systems (soil, water and vegetation).
-At least 20 productive enterprises (50% led by women) have sustainable financing/ investment and technical assistance (e.g.through field schools, business training) for their development and implementation.

Component 4: Gender-responsive project management, monitoring, evaluation and dissemination of experiences .

Outcome 4.1. Effective Knowledge management, monitoring, and evaluation, and communication mechanisms in place.

65. Knowledge management will be a central part of the proposed project. The project outputs and outcomes will be disseminated at different levels during the processes of participatory planning and investment. In this context, during project design, the project development team will design a Knowledge Management Strategy taking into consideration the needs of the different stakeholders. In addition, the project will support the development of a Communication Strategy to ensure awareness is raised about national efforts to achieve its commitments under the **UNCCD 2018-2030 Strategic Framework**. In order to achieve its goals, the team will develop an integrated monitoring and evaluation system for the project to ensure that activities are delivered on time, constraints identified and addressed and expected impacts achieved. Proposed project activities under this component are detailed below:

Table 6. Output/Activity matrix for Outcome 4.1.

Outputs	Activities

Outputs	Activities
4.1.1 Integrated monitoring and evaluation (M&E) system for the project applied within the framework of national LDN commitments	? Participatory design of the M&E system based on a typology of users based on the different levels of project intervention ? Definition of project M&E criteria and indicators. ? Design and implementation of a system for managing information, data sources, data collection protocols and data sharing to report on project results. ? Consolidation and systematization of information collected at the field, completing the information gaps and their homologation for its incorporation into the M&E system.
4.1.2 Medium-term and final evaluations conducted	? Monitoring of log-frame indicators and independent MTR evaluation ? Final evaluation (three months before closing).
4.1.3 Communication strategy developed and implemented to contribute to the objectives of the project and national LDN strategy.	? Development of a communication and information strategy addressed to different actors. ? Development and dissemination of materials, adapted to the different actors and audiences. ? Development of a project website to continuously share experiences, disseminate information, and motivate replication of products.
4.1.4 Knowledge and information materials developed, validated and distributed among relevant actors	? Systematization and publication of the PDTI Plans ? Systematization of capacity building processes and lessons learned throughout the project design and implementation process ? Knowledge and learning assessed for the generation of field guidelines. ? Preparation of a policy briefing document that systematizes the experience of the project.

66. Proposed Outcome Indicators include:

- *Integrated evaluation programme and monitoring system.*
- *Indicators of environmental impacts and social and economic benefits monitored and analyzed disaggregated by gender.*
- *Mid-term evaluation implemented for use and decision making.*
- *Final evaluation implemented with lessons learned and good practices identified.*

v) Alignment with GEF focal area and/or Impact Program strategies

67. This project aims to generate a favorable national context and a governance system for Land Degradation Neutrality applying the LDN hierarchy (avoid and reduce degradation and reverse degraded lands, Figure 5) and indicator set (land cover, land productivity and soil organic carbon) water conservation and sustainable use, as well as to improve the management of natural resources in a sustainable and integrated manner through: (i) the creation of synergies and inter-institutional coordination mechanisms; (ii) the development of technical capacities focused on sustainable land management practices as a means to implement land degradation neutrality and resilience and improvement of livelihoods; (iii) the promotion of holistic silvopastoral, conservation agriculture and organic agriculture management systems, watershed management, and efficient water management including wastewater; and (iv) an effective monitoring system capable of identifying progress and limitations regarding actions to achieve LDN in the project areas.

Figure 5. The LDN response hierarchy and measures to achieve neutrality.

68. This project is aligned with the Land Degradation Focal Area, in particular Objective 2, seeks to introduce tools for Land Degradation Neutrality in existing plans and in participatory planning processes that are supported by rural and urban local governments. It will apply a gender approach throughout and promote effective governance, especially from a land tenure point of view to secure smallholder livelihoods and in promoting an integrated landscape approach.

69. Land tenure in the central valley is reasonably secure as over 90 percent having de facto property rights over their land. Nonetheless problems arising in terms of inheritance or gender constraints hinder sustainable and equitable land use in particular at sub basin level will be investigated in the further development of the project with a view to address any gaps and facilitate application of the Voluntary guidelines on responsible governance of tenure of land, fisheries and forest, as well as access rights in terms of water. The registration of water use rights should be promoted by differentiating the water use rights intended for human consumption and those of farmers, the latter often being informal and unprotected by the law, and often not even registered. The concept of comprehensive water management under the right of use can be a valuable tool for broadening the debate and strengthening the links between land tenure, resource efficiency and food security.[19]

vi) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

70. The project will start working from a baseline where the Guadalquivir River Basin is characterized by a growing problem of land degradation and water availability concerns. The proposed GEF project will work to address these environmental concerns and will complement the ongoing efforts of the Vice-Ministry of Water Resources and Irrigation and the MI RIEGO program that is increasing the agricultural area under irrigation with the Government of the Department of Tarija and the Municipal Governments of Tarija, Padcaya, San Loranzo and Uriondo. In addition, the PROCUENCA program is strengthening the capacities of the stakeholders at the basin level to improve integrated water resource management. Starting from this baseline, the proposed GEF project will address the remaining barriers that need to be addressed to avoid environmental degradation as follows:

The first component of the project will address the barriers explained in points A, B and E described in Section 2 - Project Justification, through the design, implementation and validation effective governance mechanisms for water, soil and vegetation management in the landscapes of the Guadalquivir contributing to LDN goals and sustainable production systems.

Component 2 will address the barrier explained in point C of Section 2 - Project Justification, by implementing technological innovation processes for sustainable and resilient production with an integrated approach to basin management Plans and the development of new business models and efficient marketing systems.

Component 3 will answer to the challenges that arise from barrier F by supporting the creation of the regional financial mechanism for the adoption of good practices based on soil management and restoration, efficient water use, vegetation conservation and the preservation of environmental functions.

The last component of the project, component 4, will contribute to overcome barrier D with the development and implementation of the communication strategy that contributes to the national LDN strategy (lessons, experiences, tools).

71. The present GEF Project will constitute a consultative, participative multilevel inter-institutional instance, sensitive to gender participation from the government, producers, marketers, financial sector and academia, thus contributing to the identification and actions to solve problems of landscape degradation that will be almost irreversible in the short term, especially due to climate change trends. The environmental benefits are related to the restoration of ecosystems that will allow the increase of carbon stocks, and the recovery of the water resources of the Guadalquivir River Basin and productivity. The project will work in conservation, sustainable management and restoration of the land resource and its sustainable use systems and will increase connectivity which could include many aspects such as upstream and downstream mountain and valley landscapes, managed production systems of rural and urban communities and all sectors to be involved under participative land use planning, improving the effectiveness of management approaches at the river basin and sub-basin levels, considering a platform that takes into account existing and new civil society entities through a monitoring system that tracks progress according to LDN and other relevant national objectives.

72. The GEF grant will allow the consolidation of inter-institutional coordination at the regional, local, and national levels through governance mechanisms, while the new landscape management tools will be used to implement Land Degradation Neutrality, both in productive areas with a gender focus to strengthen livelihoods and in protected areas as a management model for the country, including the use of a management platform and the adoption of new innovative emerging technologies and governance mechanisms for conservation, inspection, interdiction and enforcement.

73. The project, will identify new priority areas for land resources conservation, sustainable management and restoration and sustainable land use systems and increase connectivity (this could include many aspects such as upstream - downstream, mountain and valley landscapes, protected areas and managed production systems rural and urban communities and across sectors and actors) by improving the effectiveness of existing basin management approaches especially at sub-basin level, this means the recovery of ecosystems through the restitution of vegetation cover and water basin areas this allows to improve soil conditions reduce soil runoff in an integrated manner, improve the availability of water resources and the fixation of organic carbon, thus increasing its productive capacity and promoting biodiversity, while expanding the network of existing and new civil society entities through a monitoring system that tracks progress according to LDN and other relevant national targets (towards Aichi targets and SDGs on terrestrial systems, sustainable agricultural practices, water and climate action 15, 2.4, 6,13, etc.).

74. The project will also address the integration of land tenure and participatory land planning in its strategy for implementing LDN, including through applying the FAO Voluntary guidelines for Responsible governance of tenure of land, fisheries and forests in the context of national food security (VGGT) and other governance arrangements, as per the recent Decision 16/COP.14, part. 9, of the Conference of the Parties to UNCCD which inter alia: ?*Encourages country Parties to take into account land tenure and land-use planning conditions, as appropriate, for creating an enabling policy and regulatory environment for land degradation neutrality (LDN), following the VGGT to manage impacts of land degradation neutrality measures on land tenure by, inter alia:*

(a) Integrating land tenure security into national strategies to achieve land degradation neutrality;
(b) Reconsidering programmes aimed at solely providing individual land titles, as these often fail to increase land tenure security;
(c) Recognizing and protecting customary land governance systems in national laws to enable customary land rights holders to be partners in land degradation neutrality;
(d) Recognizing the need to protect local communities from dispossession and loss of access to land when implementing policies and investments aiming at land degradation neutrality;
(e) Estimating the cumulative impacts of land-use decisions by assessing trends in land degradation neutrality indicators;
(f) Accounting for actors involved in private land governance who have an increasingly prominent role in shaping land governance and can therefore be instrumental to achieving land degradation neutrality.

75. The project will increase social participation in the broader natural resources management strategy, including the improvement of production systems for food security and access to markets with

a gender perspective, as well as participation in the integral management of water resources and safe use of wastewater.

76. The Project will contribute to generate integrated agriculture and livestock management and development tools in promote increased productivity and efficiency based on land potential /suitability and diversified agrosilvopastoral production systems and prioritizing food security.

vii) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

77. This project is expected to deliver the global environmental benefits described below. These benefits will be further evaluated and refined during the PPG phase:

? Implement a strategy for sustainable landscape management and comprehensive management of land and water resources in 2 sub-basins covering 2,300 ha *of degraded slopes under silvopastoral management restored and 200 ha which are introduced technical assistance services on irrigation systems complementing conservation agriculture and holistic management,* ha (Core Indicators 3.1, 3.2 and 3.3). This will include applying the LDN indicators (land cover, land productivity and soil organic carbon) in an integrated way while also assessing co-benefits in terms of water resources, climate adaptation and mitigation and socioeconomic and livelihood benefits.

Area and Landscapes	**Area and Activities**
Sub-Basins and Area (ha) management plans (Core Indicator 4)	*Core indicator 4.3* Two Sub-Basin Integrated Territorial Plans PTDIs and community agreements (Yesera and los Pinos) leading to multiple benefits in terms of sustainable land use, restored ecosystem services, enhanced productivity and livelihods and climate resilience: 40,200 ha Specifically, the project will support the process to prepare and generate financing for the pilot execution of the two sub-basin Territorial Plans of Integrated Development (PDTI-SC, in Spanish) covering an area of 4,299 ha. This includes a Yesera basin (2,597 ha) and Pinos basin (1,702 ha)
Mountain Landscape (Core Indicator 3)	*Core indicator 3.* 2,300 ha of the hillsides restored with good silvopastoral practices under agrements with local actors in 2 sub basins. (460 ? Core indicator 3.2 & 1,840 Core indicator 3.4) 200 ha which are introduced technical assistance services on irrigation systems complementing conservation agriculture and holistic management (Core indicator 3.1)
Valley Landscape	*80 small farmers (coverin aprox. 40 ha) receive technical assistance on irrigation systems complementing agricultural conservation and organic agriculture. (accounted for under core indicator 4.3 above)* *At least 20 productive enterprises (50% led by women) have financing, technical assistance including field schools and investment for their development and implementation.*
Beneficiaries	*459 families (approx. 1836 individuals, 50% women)*

viii) Innovation, sustainability and potential for scaling up.

Innovation

78. Participatory and inclusive planning at the local level will allow for comprehensive development and the achievement of LDN in the Guadalquivir basin under a holistic landscape approach. This basin is a basic territorial space due to its homogeneous biophysical and socioeconomic conditions, for participatory and consensual land planning, implementation and monitoring. Efforts will focus on establishing targets for the three main indicators of LDN (land cover, land productivity and soil organic carbon stocks) the strategy of intervention will be differentiated between mountain and valley landscapes units, because the land use is different, the soil degradation causes are different across both sub-basins, while also achieving those targets alongside associated biodiversity, water (access, quality) and socioeconomic impacts in the target landscape units.

79. The implementation of conservation measures and sustainable forest and land management (SFM/SLM) practices in productive systems, and at the landscape level and addressing interrelations with the Sama Biological Reserve will contribute to the LDN initiative as an important pilot site/landscape in Bolivia. This will represent breakthrough for the wider ecological region by opening up the possibility of its wider implementation through national policies and terrirorial agreements, and the establishment and strengthening of the capacities necessary for sustained implementation, evaluation and monitoring. These capacities will be strengthened through the use and local adaptation of relevant technological tools and networks developed and supported by FAO with partners and innovative experiences in their use in the region through digital technologies and platforms such as:

? LADA-WOCAT database, network and tools for decision support (local to national level) in scaling up and mainstreaming sustainable land resources management technologies and approaches,
? ASIS (drought risk management), EX-ACT (activity based carbon balance assessment), SHARP (Self assessment of climate resilience of farmers and pastoralists) and VCA (value chain analysis) Tools,
? Spatial data collection and analysis tools such as Trends.Earth, Collect Earth, Open Foris and EarthMap,
? The action plans and instruments of the Global Soil Partnership and its regional partnership (AMS and ASLAC in Spanish) in promoting sustainable soil management, including Voluntary guidelines for sustainable soil management (VGSSM) and Voluntary guidelines for responsible governance of tenure of land, fisheries and forests (VGGT).

80. Emerging water governance systems must be strengthened, in order to favor agriculture and food security, with the firm objective of promoting the effective and efficient resolution of problems in a way that is considered legitimate by all interested parties. For this purpose, governance evaluation tools should be developed to facilitate the analysis and examination of institutions, laws, strategies, plans, and investment frameworks to favor effective water governance, both in terms of quantity and quality. Likewise, the development of tools to institute reciprocal compensation and joint benefits corresponding to recharge areas and sites with greater water use should be promoted.

81. This project can be o model of development considering that the country is identifying as a serious problem caused by land use changes at environmental fragile landscapes, the loss of biodiversity and CO2 increase drives to Bolivian government to seek alternatives to reduce this effects. It is a challenge to develop actions in an integrated manner, in that context, the project can be a model of action, where there is an enabling environment in the institutions of the Department of Tarija, taking the Guadalquivir River Basin as a reference base, in order to implement governance mechanisms where the stakeholders themselves identify and solve the problems based on the basin and its landscapes.

82. In terms of governance, work must continue to foster citizen participation with gender and generational equity, that is, to involve all social agents in decisions, taking into account their needs and interests. This will guarantee transparency and reciprocal trust, by informing and consulting (formal mechanisms), in addition to agreeing to the relevant decisions regarding the future of the basin and its landscapes. The processes of implementation and articulation in the area of policies, standards, plans and strategies must be improved, to guarantee access by the producers and to make the management of the basin more efficient and effective, through the monitoring of its impacts and data and evidence for making informed decisions at different levels (local, basin, municipal and departmental). Lack of effective, efficient and transparent governance in the basin will impede increased investment and budgetary allocation for the management of water and natural resources, in addition to the complementarity of funding sources.

83. Experience shows that interventions that include the views and contributions of both men and women generally work better. Water is not ?gender neutral? so it will be essential to understand gender roles to plan water interventions and policies that meet day-to-day needs and gender constraints such as lack of remuneration for women in agriculture and inadequate involvement in decision making.

84. The migration to cities of young people in seeking higher education centers and job opportunites must be reversed. According to the index of femininity in the country, from the age of 16 women in rural areas move to the cities in search of better living conditions. According to a study by UN Women, the upper limit of the femininity index is 1.03 and the lower limit is 0.85 at the national level[2]9. This is the situation in Tarija where the index is 1.01, that is to say slightly higher than the average. This is why it is necessary to strengthen inclusive processes so that rural women are incorporated into productive initiatives under agro-productive systems that associate men and women, which allows them to have greater access to markets and income through value addition and capacity building with gender equity and governance. [36]

An alternative to strengthen livelihoods in rural areas is a productive venture that groups peasant families in order to generate a joint productive initiative that aims to create a certain product, transform the same to have added value with the objective of taking advantage of an opportunity offered by the market. These ventures in many cases are successfully led by rural women.

Sustainability

85. The environmental, productive and social aspects of sustainability are closely related and will be addressed by the project in an integrated way. Regarding *environmental sustainability*, the project will promote the restoration of degraded ecosystems based on landscapes which are clearly identified into a basin, mountain and valley which have its own conditions, land use, degradation the project proposal is

related to the diversification of production systems to guarantee adoption and long-term sustainability, in addition to increasing the carbon stock in soils and plant cover. The *social sustainability*, strengthening the capacities of local communities and institutions under governance principles in natural resource managemen and strengthening livelihoods, incorporating the perspective of gender and generational equity, given the key role of women and youth in the decision-making process, and providing a sound financing mechanism through public-private partnership are fundamental aspects of the project?s design.

86. The mechanism for economic sustainability of the project is the public-private partnership through which economic resources will be collected for the Fund maintenance through the time, the resources will be considered in the budget of the institutions which will be involved in the Fund by law. The institutions and resources that may constitute the partnership include:

Resources from the Direct Tax on Hydrocarbons (IDH).
Resources from hydrocarbon royalties.
Resources for inter-governmental transfers, in accordance with agreements signed with Municipal Autonomous Governments, the Gran Chaco Regional Autonomous Government or the Central Level of the State.
Financing resources and/or donations from national and international, bilateral or multilateral sources to the Departmental Autonomous Government of Tarija, specifically for the preservation, conservation and protection of water sources, within the framework of FODAGUA (Water Fund in Spanish).
Other resources from private or public sources. The strategy to convene stakeholders from the private sector will be developed by the project as a support of the development process of the law that will regulate the fund.

Scale up/out

87. The project, under the direction of the Ministry of Environment and Water, will generate land degradation neutrality measures to confront the severe land that the country is facing while also enhancing resilience to climate change and will develop an inclusive territorial planning and governance strategy as a model for implementation and scaling out. This model, once proven to be successful, may be replicated across the Guadalquivir Basin and as appropriate in other areas of the country and, importantly, will build on relevant initiatives and lessons learned. In addition, it will channel the support of national programmes related to sustainable agri-food systems, strengthen the preservation and/or restoration of natural resources based on a mixed public ? privated financial mechanism. This will be guided by a Steering Committee whereby local institutions submit proposals to conserve and integrate water and soils as well as the establishment of productive ventures and integrate small farmers led by women of the central Valley of Tarija.

88. The focus of the project will allow to scale out efforts to improve environmental functions at large geographic scales and the consequent climate adaptation and mitigation benefits, generating resilience

capacities to farmers and rural communities considering the basin as the unit of participative land use planning in close relationship with land tenure, enhancing national capacities for the effective implementation of integrated land-use planning, establishing the full integration of a neutrality framework for counterbalancing assessed losses with equal or greater gains, and applying the land degradation neutrality response hierarchy for measures to avoid, reduce and/or reverse land degradation with participation of small farmers on that way the Project will be working in a monitoring system which is crucial to verify the improvement of actions and landscapes changes based on project proposal.

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[1] Named ?Valleys Macroregion? after the Agency for the Development of Macro-Regions and Border Areas ADEMAF, 2016

[2] Population and Housing Census, 2012, National Institute of Statistics)

[3] ha = Hectares

[4] Study of the Integral Water Balance of the Guadalquivir River Basin. MMAyA. 2016

[5] ViceMinistry of water resources and irrigation.

[6] PROMETA: Para For the biophysical component, there are indicators on the availability of water resources, slope classes, type of plant cover, biodiversity and size of the sub-basin. In the socio-economic component, the following were considered: water supply for human consumption, water for irrigation, water for animal consumption, proactivity of the population, presence of protected areas, water sources and the population. In climate change, the following were considered: frost, hailstorms and temperature and precipitation anomalies according to change scenarios.

[7] Red book of Vertebrates, MMAyA.2009.

[8] Integral Diagnosis and Strategic Guidelines of the Guadalquivir River Master Plan: MMAyA, VRHR, Helvetas, 2015.

[9] Environment Protection Tarija. PROMETA, 2020.

[10] National Programme to Combat Desertification and Drought : official document : Pronaldes / Land Conservation Directorate. 1996.

[11] Baseline of the State of the Dryland Degradation Process in Bolivia (Arid, semi-arid and dry sub-humid lands) and Design of the Scheme of the Land Degradation Monitoring System in Drylands based on the LADA Approach Technical Explanatory Report. MMAyA - FAO 2014.

[12] Integral Water Balance for the Guadalquivir River Basin. MMAyA_PNC 2016.

[13] Increase in GHG emissions over time without mitigation action(reference).

[14] Current and future context in the Valleys Macro-region. FAN Bolivia ? FAO. 2017.

[15] Departmental Water Plan in Tarija, 2013 ? 2025.

[16] Multi-annual Programming and Performance Evaluation Framework for the 2017-2020 Irrigation Subsector: MMAyA, VRHyR.2017.

[17] Doctoral Thesis Women in Production Systems under Agroecological Principles in Bolivia Universidad Complutense Madrid.Ana Dorrego Carl?n. 2018.

[18] Please refer to Bolivia?s National LDN Strategy (link here) for a baseline assessment on land productivity dynamics. The Strategy shows (pg. 33, Land Productivity Dynamics map) important areas of decreasing productivity and stable but stressed productivity. Annex 4 highlights plans to revert erosion in hillsides in the regions targeted by the project.

[19] Tarija Strategic Wine Plan to 2040 Government of Tarija, GIZ 2019.
[20] TESA Study of the South Side Irrigation Project in the Municipality of Uriondo Tarija.2014.
[21] Agro-ecological Zoning of the Department of Tarija. 2000.
[22] Management Plan for the Cordillera de Sama Biological Reserve. SERNAP. 2004.
[23] Integral Diagnosis and Guidelines of the Guadalquivir River Basin. MMAyA 2015
[24] Departmental Service of Integrated Water Gestion of the Departmental Govenment of Tarija and PROMETA
[25] Datos INE 2001 y 2012
[26] National Institute of Agrarian Reform
[27] Tarija Departmental Water Plan 2013-2025. Government of Tarija. 2013.
[28] Gobernanza del Agua de la Cuenca del Guadalquivir. FAO 2019.
[29] Territorial Approach for the Empowerment of Rural Women: Study Bolivia. UN Women. 2011.
[30] PROMETA.
19 Guadalquivir River Water Governance. FAO 2019.
[31] United Nations Convention to Combat Desertification.
[32] https://knowledge.unccd.int/sites/default/files/ldn_targets/2018-11/Bolivia%20LDN%20TSP%20Country%20Report.pdf

[36] PROMETA.
19 Gobernanza del Agua del R?o Guadalquivir. FAO 2019.
29Territorial Approach for the Empowerment of Rural Women: Study Bolivia. UN Women.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

89. The sub-basins were prioritized following three categories: a) biophysical indicators, b) socioeconomic indicators and c) climate change indicators in the case of Pinos Basin has considered that is part of Sama Protected area see Map 1. These are listed below:

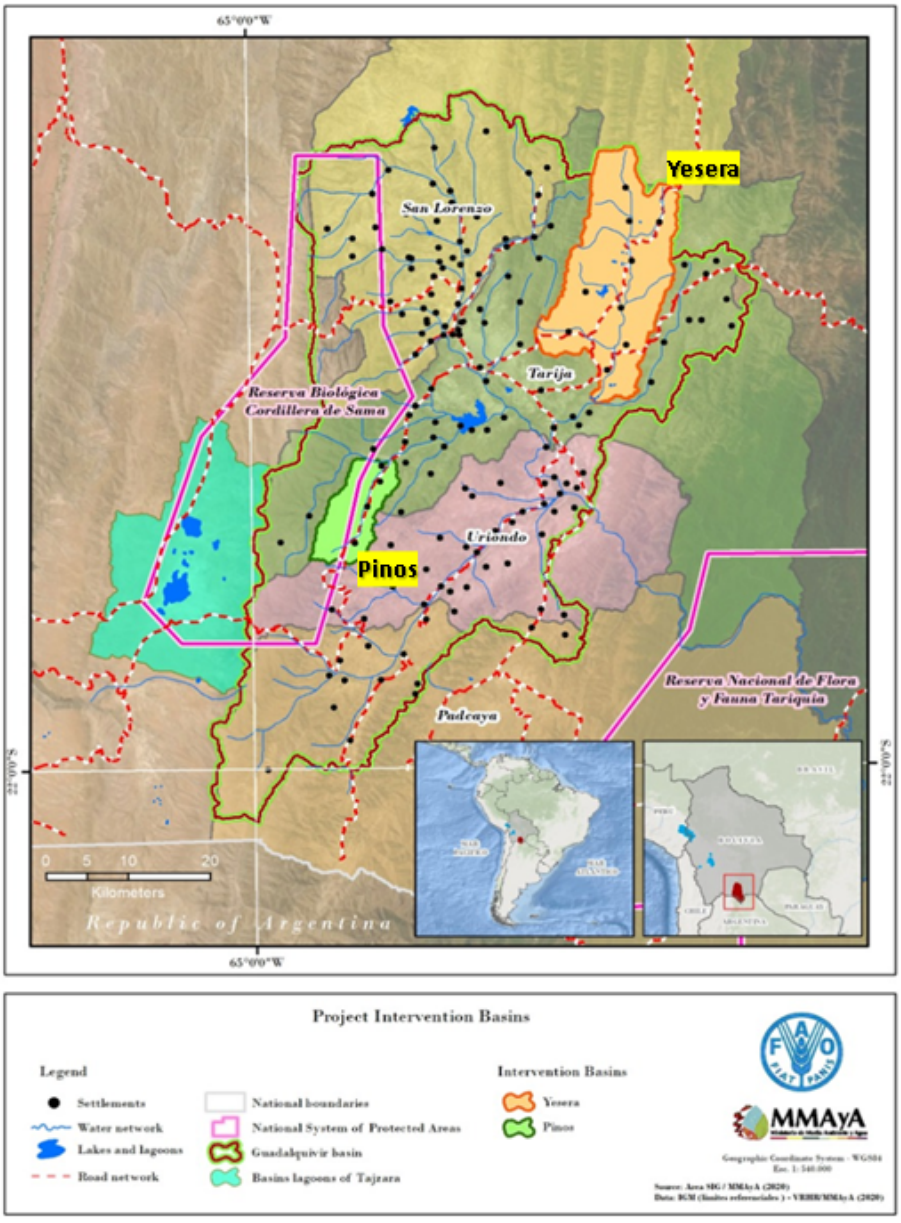
? **Biophysical indicators**: (i) Availability of water resources, (ii) slope class, (iii) type of vegetation cover, (iv) biodiversity, and (v) size of the sub-basin.

? **Socioeconomic considerations**: (i) water supply for human consumption, (ii) water for irrigation, (iii) water for livestock consumption, (v) presence of protected areas, (vi) water sources and (vii) total population.

? **climate change indicators**: (i) frost, (ii) hail, and (iii) temperature and (iv) precipitation anomalies according to climate change scenarios.

Sub-Basins Prioritized

Sub-Basins	Surface (Km?)	Population (hab)
1 Pinos	84,37	1.702
2 Yesera	318,00	2.597
Total	**402,37**	**4.299**



Map 1. Localization of Yesera and Pinos Sub-basins in Guadalquivir basin.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities No

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

The Project idea was developed by the Viceministry of Water Resources and Irrigation as the focal point of United Nations Convention to Combat Desertification and to showcase how to implement at field level the National Strategy for Land Degradation Neutrality (NDT) by 2030. The Government prioritized 14 basins at National Level one of them is Guadalquivir Basin in Department of Tarija and it was selected for the present proposal for different environmental conditions , degradation of ecosystems, water scarcity, soil degradation. Simultanously the actions of institutions to solve above mentioned problems of Guadalquivir basins created the interinstitutional platform of Guadalquivir Basin involving the Viceministry of Water Resources and Irrigation, the Departmental Government of Tarija, the Municipal Governments of Tarija, San Lorenzo, Uriondo and Padcaya, involving associations of producers ? family farmers who request the project through the Sindical Federation of Farmer Association of Tarija, the GIZ, NGOs as PROMETA and the actions are catalized by the Governance platform where FAO actually is involved.

The process of gathering information in the office and in the field was carried out by means of interviews and field visits, as well as the development of validation activities in workshops with the key actors of the Guadalquivir River Basin, which has allowed the preparation of a document that establishes the socio-economic and environmental baseline, as well as the level of governance in which the management of the basin is located and the tasks to be developed to consolidate it, which served as the basis for the PIF proposal.

Information and Socialization

Activity	Entities and/or stakeholders	Dates

Interviews with relevant national stakeholders to explain the scope of the Water Governance Study in the Guadalquivir River Basin.	Luis Marka, Director General of Basins and Water Resources, Ministry of the Environment and Water: Mike Gemio, Executive Director National Forestry Development Fund Alfonso Cosme, Director of Planning, National Irrigation Service. Alfonso Blanco, Director of the Departmental Service of Integral Water Management.	September 26th, 2019
Workshop on information gathering and scopes of the Water Governance Study in the Guadalquivir River Basin.	Guadalquivir Basin Platform.	September 27th, 2019
Field visit to grape Productive Systems under irrigation, in the municipality of Uriondo.	Higinio Castro, Association of Producers and Irrigators of Uriondo.	september 28th, 2019
Workshop to return findings Water Governance Study in the Guadalquivir River Basin.	Guadalquivir Basin Platform. International Cooperation NGOss	December 18thde 2019
Socialisation of the Water Governance Study in the Guadalquivir River Basin..	Scivil ociety	July 8th 2019

Finally, the methodology used throughout the study is qualitative, based on an analysis of public policy and the information gathered in the Guadalquivir basin itself. The main findings of the Water Governance research are related to the inter- and intra-institutional difficulties faced by the national and sub-national public administration, as well as the inter-institutional platform of the basin to implement integrated and sustainable water management; based on the attention to the needs and demands for access to water and efficient irrigation systems by local producers in a context of mitigation and adaptation to climate change, food insecurity and poverty.

In this context, natural resources management needs agreements that could potentially be positive flows to strengthen environmental ecosystem functions including those related to water supply, improvement

of productivity and improvement of soils conditions. For Project implementation it will be important to constantly involve the following institutions:

National and Local Level Stakeholders	How will it be involved during project preparation?	Role	Means of engagement
Ministry of Environment and Water	Monitor project design to ensure alignment to national priorities.	Governing body	Implement the national policies on basin management, biodiversity conservation, and land management, as well as projects and standards for compliance.
Vice Ministry of Water Resources and Irrigation	Lead project design. Coordination of the project contribution to the 2030 National Strategy for Land Degradation Neutrality.	Executing partner	Implement the Integral Management of Watersheds and the Integral Management of Water Resources for the efficient and equitable use of the multiple water resources. Focal Point to the UNCCD.
Vice Ministry of Environment, Biodiversity, Climate Change, Forest Management and Development	Ensure alignment of project activities with Strategy for the Integral and Sustainable Management of Biodiversity ? Action Plan 2019-2030 and other GEF projects under preparation/implementation.	Co-executing partner	Formulate and define policies for the conservation and sustainable use of biodiversity and forest; implementation of related strategies, programs and plans. Focal Point to the CBD and its Protocols.
SERNAP, National Protected Areas Service	Participatory development of co-management models of protected areas and buffer zones.	Strategic Partner	Operate the National System of Protected Areas, guaranteeing the integral management of protected areas of national interest, in order to conserve biological diversity, in the area of its competence.
APMT, Plurinational Authority of Mother Earth	Guidance on the project implementation in light of the Joint Mechanism of Mitigation and Adaptation to Climate Change, and NDCs.	Strategic Partner	Implement the Joint Mechanism of Mitigation and Adaptation to Climate Change. Focal Point to the UNFCCC.
SENAMHI, National Meteorology and Hydrology Service	Provision and follow up of meteorological and hydrological data.	Strategic Partner	Provide official meteorological and hydrological data.

National and Local Level Stakeholders	How will it be involed during project preparation?	Role	Means of engagement
Ministry of Rural Development and Land	Coordination of capacity building and implementation activities on SLM.	Strategic Partner	Contribute to the integral and sustainable management of agrobiodiversity, forests and lands, and their mainstreaming in rural areas and productive development strategies.
Vice Ministry of Land	Coordination of capacity building and implementation activities on SLM; and coordination of actions for the production of zoning maps and the identification of areas under expansion of the agricultural frontier.	Strategic Partner	Propose policies, strategies, actions and projects of legal and regulatory norms in agricultural lands matters, as well as operational programs.
Vice Ministry of Rural and Agricultural Development	Coordination of capacity building and implementation activities on Conservation Agriculture, tillage zero and use of the national seal for ecological agriculture under Participatory guarantee systems ecological certification (SGP in spanish)	Strategic Partner	Propose policies, programmes, strategies, actions and projects in agricultural matters for rural development.
SENASAG, National Agricultural Health and Safety Service	Coordination of the national food safety seal to be obtained for the communal enterprises processing products from (agro) biodiversity and forests; and registration of farmers with ecological production with the national seal for ecological production and Participatory Guarantee Systems	Strategic Partner	Administration of the agricultural health and food safety regime in the productive and processing sectors.

National and Local Level Stakeholders	How will it be involed during project preparation?	Role	Means of engagement
INIAF, National Institute of Agricultural and Forestry Research	Coordination of capacity building related to conservation; and sustainable use of agricultural genetic resources.	Strategic Partner	Regulate and carry out research, extension, technical assistance, agricultural, aquaculture and forestry technology transfer; management of genetic resources of agrobiodiversity, and seed certification services. Focal Point to the International Treaty on Genetic Resources for Food and Agriculture.
INRA, National Institute of Agrarian Reform	Collaborate and follow up on land titulation.	Strategic Partner	Direct, coordinate and implement the policies established by the National Agrarian Reform Institute.
INSA, National Institute of Agrarian Insurance	Provision of feedback on regulation related to the protection of production in relation to weather risk.	Strategic Partner	Contribute to the protection of agricultural production and livelihoods of agricultural producers against adverse climatic events.
Ministry of Planning and Development	Provision of data on the project contribution to achieve the 2025 Patriotic Agenda and SDGs.	Governing body	Direct the Integral Planning of the Plurinational State, towards the achievement of the objectives of Integral Development to Live Well in Harmony with Mother Earth, within the framework of the 2025 Patriotic Agenda.
Vice Ministry of Planning and Coordination General Directorate of Territorial Planning	Provision of data on the project contribution to the territorial planning for integral development.	Strategic Partner	Governing planning institution.
Local municipalities	Support mobilization of local actors during project design, as well as direct involvement through local authorities and municipal staff.	Local authorities	Administration of the local public order, services, and policies.

National and Local Level Stakeholders	How will it be involed during project preparation?	Role	Means of engagement
Local communities in the Guadalquivir basin	Consultation and detailed participatory project design; and definition of the specific communities for implementation of the components 2 and 3 of the project.	Beneficiaries	Participation in the design and implementation of project activities, particularly on participatory planning, implementation of field activities and dissemination of knowledge
Private sector associations: -Valle Central de Tajira Irrigation Association, -Association of Wine Growers and Entrepreneurs, and -Tarija Departmental Federation of Farmers	Support mobilization of local actors during project design and implementation. Use of their networks to disseminate best practices and support project investments	Beneficiaries and Strategic partners	Participation in the design and implementation of project activities
REVERDESER	Holistic Management of Pastures.		The NGO is working in High lands of the country applying the holistic management of pastures which can be applied in Guadalquivir Sub Basins.
PROMETA (Protecci?n del Medio Ambiente Tarija)	Participation in project design, execution of specific project activities (as agreed with the government of Bolivia) It leads the design of the Fund of the Water under consultation with public and private institutions in addition to local governance actions and departmental environmental initiatives and programs among them . PROMETA has implemented the GEF-MSP Grant TF 051578 ?Removing obstacles to private sector participation in situ biodiversity conservation?.	Strategic Partner	Environment Protection Tarija. The activities developed by PROMETA which has similarities con complementarities with the present proposal, ata the same time PROMETA is generating actions in the regional aspiration to implemente the ?Fund of the water?

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

90. Recent assessments in Bolivia indicate that gender roles are well defined, and that women play an important role in natural resources management in Bolivia.[1][1] While men traditionally have controlled resources and the related decision-making, women are responsible for domestic reproductive and care activities, subsistence farming and other small-scale income generating activities, as well as supporting men in the productive sector. Generally, women?s participation in decision-making processes has been limited.

91. Bolivian women have a high rate of labor participation compared to other countries in the region. While the country has made significant progress towards gender parity in education,[2][2] other types of disparities remain, particularly with regard to access to production resources.[3][3] and recognition of and support to their agricultural and natural resources management activities.Within this context, the project will pursue a gender-responsive and a generational equity approach. This is, the project will ensure women?s and youth participation in project activities, including in leadership and decision-making roles. As needed, special arrangements will be made to ensure women and youth?s participation, in order to ensure that they can voice their opinion and needs including through Activity 3.1.3. To inform project design and development in this specific dimension, the project will develop a gender analysis as part of the socio/economic assessment that will be carried out during project preparation. The analysis will build on the above/mentioned baseline and will help the project design team identify gender sensitive indicators and ensure that a gender approach is considered during project implementation.

To support the design and implementation of the project in this specific dimension, a Gender Action Plan (GAP) will be developed during project preparation considering:

1) Baseline identifying gender gaps and prioritize them according to the problems on which the project seeks to act.

2) Intervention strategy that considers the actions and their indicators, based on 3 result areas considered in the GEF Gender Policy, which are the following:

? Unequal access and control of Natural Resources

? Participation and unequal decision making

? Unequal access to socioeconomic benefits and services

These actions will be reflected in the project's operational plans and also in the monitoring system, which will measure the progress made in the mainstreaming of the gender equality approach, based on the indicators.

92. In particular, the project will address gender gaps in terms of women's limited participation in decision making, access to the implementation of productive systems (i.e. land, water, forest resources, etc.) and economic opportunities by investing in strengthening their knowledge, technical and leadership skills through differentiated processes to enhance their participation. Activities will be carried out to increase women's access to local productive enterprises led by women by 50%, to sustainable land and water management practices, and to storage technologies and capacity building in these areas. In addition, the project will take into account their roles and knowledge in the integrated and sustainable management of water resources and biodiversity conservation. In particular, the project will:

? Under component 1, the project will implement specific training activities targeting women and youth to ensure they strengthen their capacities to actively participate and lead territorial planning processes. This includes ensuring their participation in the Platform for the basin, in the development of PDTIs, and in environmental monitoring processes. Project efforts will also seek to remove gender, youth and elder discriminatory norms and attitudes.

? Under component 2, the project will develop and implement targeted training programs for women and youth to ensure their participation in investment activities for productive systems. This includes participation in the development of programs to improve productive systems, and ensuring access to resources, value chains and in other monetary, and non-monetary economic activities.

? Under component 3, output 3.1.3, the project will support the implementation of family-based productive ventures targeting women and youth.

93. The proposed project is fully in line with the goal of FAO?s Policy on Gender Equality to achieve equality between women and men on sustainable agricultural production and rural development for the elimination of hunger and poverty. Women should be enabled to participate equally with men as decision-makers in rural institutions and in shaping laws, policies and programmes. Moreover, both should have equal access to and control over land and other productive resources, decent employment and income, goods and services for sustainable agricultural development, and to markets. Gender and generation-related indicators will be developed fully in the project preparation phase and included in the project logframe.

[1] Ashwin, M. et al (2011): Gender Dynamics and Climate Change in Rural Bolivia. (Link) and DED (2008) Avances hacia la equidad de g?nero Experiencias de la Asistencia T?cnica del DED ? Bolivia (https://www.bivica.org/files/genero-equidad-asistencia-tecnica.pdf)

[2] Education is a universal right in Bolivia

[3] ONU MUJERES (2018): Enfoque territorial para el empoderamiento de las mujeres rurales: Estudio Bolivia (http://www.nu.org.bo/wp-content/uploads/2018/09/Libro-Enfoque-territorial_-ONU-Mujeres.pdf)

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

94. The project will strengthen small-scale farmers especially women to incorporate ecological approach, since, in the central valley of Tarija ecological producers associations are led by organized women since primary production until comercialization, strengthening partnerships between local producer and supplier associations, community-based enterprises, collection centres and agricultural businesses. Public-private partnerships will be supported to provide incentives for production, and the identification of their production, for example, through the ecological certification of the region's products with the national ecological seal for ecological associations led by women in the central valley of Tarija. This will be supported through central role of the State in the design of incentive programmes for sustainable production and gender and intergenerational equity. Coordination will be made with financial mechanism in place to support the adoption of good practices based on the conservation, for the granting of loans and technical support to organizations. The private actors with whom the project will work include The Valle Central de Tarija Irrigation Association, Ecological associations, the

Association of Wine Growers and Entrepreneurs, and the Tarija Departmental Federation of Farmers, among others.

5. Risks to Achieving Project Objectives

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)

95. Potential identified risks are as follows:

Probability	Potential risks	Mitigation measures provided
Low	Low local technical capacity at different levels.	The project will pay special attention to maintaining a continuous process of development and strengthening of capacities through the exchange of experiences and training of technicians from participating institutions. Also the land, and forest management practices will be designed and implemented in a participatory manner to build on indigenous knowledge and heritage systems in terms of land management, as well as modern scientific knowledge and technologies to combat degradation and cope with climate change, which will further adoption by farmers and communities.
Medium	Problems in land tenure regularization make it difficult to access incentives and other schemes that promote the adoption of sustainable practices.	Security of tenure will be enhanced at territorial level through local community and sub-basin plans, governance arrangements and agreements. This will include, inter alia, awareness on applying the ?Voluntary Guidelines on the Responsible Governance of Tenure? VGGT, integrating tenure security into sub and basin strategies to implement LDN, and how to recognise and protect customary land governance systems to enable customary land rights holders to be partners in LDN (see Decision 16/COP 14, paragraph 9, of the United Nations framework Convention to Combat Desertification). Secure tenure is a complementary important condition for continued investments in sustainable land management (SLM), irrigation and water supply.
Medium	Conflicts arising from competition for the use of territory and natural resources - especially forests - between different actors and policies that converge on the same territory.	Planning to achieve LDN, based on PTDI and principles of participatory governance at different levels, will enable consensus to be reached to address common problems of degradation while also enhancing socioeconomic benefits of improved land productivity, water use efficiency and conservation..

Medium	The authorities and technicians trained by the project do not continue in relevant functions due to staff mobility.	The project will give priority to capacity-building processes targeting permanent staff of local institutions and organisations and local community members. In addition, the project activities will generate practical tools for the implementation of sustainable practices and for LDN monitoring and evaluation for wider use.
High	Extreme weather conditions negatively affect ecosystems, threatening the possibilities of implementing improved production systems, and maintaining environmental functions.	Sustainable management practices to conserve land and water resources and diversify production systems will be designed specifically for climate resilience, in particular drought and water scarcity, and implemented in a participatory manner to reduce the vulnerability of systems and livelihoods. In particular, this will include reforestation of recharge areas, soil and water conservation practices to reduce runoff and erosion, water use efficiency in irrigation schemes and equitable water allocations among farmers.
High	Intense and in some cases unauthorized changes in land use are a factor in land degradation. Forest fires caused by controlled burns in times of drought are potential risks due to their magnitude and short, medium and long term consequences.	Integrated participatory planning, embodied in community action plans, helps to mitigate changes in land use and cover and foster community involvement in, fire control, saving water, etc. Bioengineering (fire breaks, tolerant species, etc.) and sustainable vegetation and soil management practices help reduce the risk of fire and restore degraded areas.
Low	Risk of Gender inequality in project implementation.	A gender action plan will be developed to ensure full participation of women in the project including in decision making and in terms of derived benefits The leadership of women will be ensured in the Steering Committees that revise and decide on the approval of productive ventures submitted by local organizations from Guadalquivir Basin.
Low	Lack or change in policy commitment.	Actions will be coordinated among National, Departmental, Municipal level interacting with local Governance and land planning at sub- basins level to ensure that local and national priorities are addressed.

Medium	Potential risk of Pandemics (Including the on-going COVID-19 pandemic)	In order to avoid risk of spread of the virus, during preparation phase the project will consider measures to avoid face-to-face meetings and gatherings. Other alternatives to face-to-face meetings will be preferred whenever possible. However, only when necessary face-to-face meeting will take into account all biosecurity measures in line with national and FAOs standards and regulations. The project is expected to start implementation at the end of 2021 when the COVID pandemic is expected to be under control. Nevertheless, the evolution of the pandemic will be taken into account in the design of the project. After the COVID 19 experience, rural populations must be prepared for other pandemics, considering that climate change and the pressure of the population in search of food causing pressure on ecosystems is a catalyst for environmental imbalances that can lead to pandemics. COVID 19 has taught us that we must generate capacity in the rural area to maintain our logistical channels for the provision of food to the population, the establishment of decentralized mobile markets with a fair price avoiding intermediaries and developing a logistics supply of inputs such as seeds, agrochemicals, fuel, this with a comprehensive communication system that allows the planning of contingency activities to a pandemic. The project will consider these lessons learned into consideration in the design of activites and will raise awareness among stakeholders about mitigation actions for this risk (including future pandemics). The global environmental benefits that the project will deliver as mentiond above will represent an opportunity to build-back better from the adverse effects caused by the COVID-19 pandemic.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

96. The Food and Agriculture Organization (FAO) will act as the GEF Implementing Agency, and as such will be responsible for providing technical support and carrying out supervision missions during project implementation, as well as conducting the evaluation of the project results. The Ministry of Environment and Water (MMAyA), through the Viceministry of Water Resources and Irrigation will be the coordinating and execution agency, then, is responsible for technical assistance and the implementation of a Project Coordination Unit, which will be responsible for the day-to-day management and monitoring and evaluation of the Project. A Project Direction Committee (CDP), composed by MMAyA and FAO will be created to supervise and coordinate the project execution planning. A Technical Support and Scientific Committee (TSSC), integrated by local institutions, technical personnel from the sector institutions and the academic sector, will support the implementation of the project providing technical orientation about specific aspects related with the main components.

97. In addition, the proposed project will ensure coordination with the following relevant GEF-financed projects and other initiatives:

? ***GEFID 10393 ? Strengthening the integral and sustainable management of biodiversity and forests by indigenous peoples and local communities in fragile ecosystems of the dry forests of the Bolivia Chaco***. The proposed project will coordinate by exchanging intervention experiences and how from local level can retrieve the National Strategy of Land Degradation Neutrality, as well as the development of tools and approaches to implement community based land use planning and monitoring. It is expected that FAO will provide technical supervision and specific technical support. Both projects will support the implementation of activities to achieve LDN therefore there will be significant knowledge sharing and farmer-to-farmer (and community to community) sharing of experiences. At PPG stage.

? ***GEF ID 4577 ? Conservation and Sustainable Use of Agro-biodiversity to Improve Human Nutrition in Five Macro Eco-regions.*** This project has the objective of in-situ conservation and sustainable use of agrobiodiversity in five macro eco-regions, to improve the livelihoods of local people by mainstreaming the value, conservation and sustainable use of agro-biodiversity in national policies, regulatory frameworks, and programs (health, education, rural development and food security). It also involves providing market incentives, and a process of awareness-raising and training in the sustainable use of native agro-biodiversity. The proposed project will ensure exchange of experiences and knowledge sharing.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The project is consistent with the following national strategies, plans, reports and assessments under the Rio Conventions:
-Bolivian LDN 2030 National Strategy (2018),
- UNCCD National Report (2018)
?Plurinational Policy and Strategy for the integral and sustainable management of biodiversity ? Action Plan 2019-2030 under the CBD,
- National Bio Strategy Action Plan (NBSAP 28 March 2019)
- CBD National Report (31 December 2018)
- Cartagena Protocol National Report (31 December 2018)
- UNFCCC National Determined Contribution NDC(12 October 2015)
- Nagoya Protocol National Report (is not registered)
- UNFCCC National Communications (NC) NC2 2 December 2009
- UNFCCC Biennial Update Report (BUR) Bolivian Report is not registered
- UNFCCC Technology Needs Assessment (April 2002)
- National Adaptation Programme of Action Update Bolivia (date? not Registered with NAPA
- Others

98. The project will contribute to achieve the objectives of the PDES 2016-2020, and the departmental, municipal, indigenous and farmer autonomy objectives as will be described in the Integrated Territorial Development Plans related with the integral and sustainable management of forests and biodiversity, and the conservation of environmental functions (Law No. 300). Similarly, the project will contribute to the management of the territory in the Central Valley de Tarija region to improve food security (Law No. 144) the production of organic, biological and healthy food (Laws No. 3523 and No. 775) and socioeconomic development (Law No. 338). This will contribute to reducing poverty, strengthening food security, promoting gender equality and advancing towards integral development.

99. Specifically, the project will contribute to achieving the objectives of the following pillars of PDES: forests, integral production settings and transformation of food resources and biodiversity (Pillar 6), production diversification, protection of local varieties and promotion of nutritious traditional crops (Pillar 8) and development of sustainable production systems in the framework of the territorial management processes. Increasing forest cover (Pilar 9).

100. With regard to the Bolivian LDN 2030 National Strategy (2018), the project objectives contribute directly to the government strategy, focusing on integrated biodiversity, land and water management. In particular, the project will contribute to the following targets:

? Zero illegal deforestation for 2020.
? For 2030, 16.9 million hectares of forest under an integrated and sustainable management plan with a community approach for 2030.
? For 2025, no extreme poverty among forest dependent communities (baseline: 350.000 people in 2010).
? For 2030, 6% increase in forest Gross Domestic Product (GDP) for 2030.
? For 2030, reforestation of 4.5 million hectares.
? For 2030, 29 million hectares with improved environmental functions.

? 1 million hectares with resistant irrigation systems for food production in 2030.

101. Climate change: relevant aspects of the national adaptation and mitigation plan and NDCs commitments: The National Climate Change Plan regarding water resources management cites the Policies of the National Climate Change Adaptation Mechanism. Policy 1. Conserve and manage water considering future climate scenarios. One of the priority tasks of the state is to guarantee the availability of water resources and to promote its efficient use and maintain conditions that can serve nature, without causing imbalances in the same. The policy also considers whether in the future there will be water in sufficient quantity and quality required by natural and human systems. The policy aims to promote actions to conserve and maintain water quality suitable for various uses.

102. Among adaptation measures, the insertion of climate change and its impacts on water resources policies are considered to be the most important approach to watersheds seeking synergy with the National Watershed Program, National Irrigation Programs, Water Resources Management and others, to carry out joint actions aimed at better water management under climate change scenarios.

103. With regard to the NDCs, two of the three 2030 national efforts are inherent in this proposal: ? which are in relation with Water*: Increase in a holistic manner the adaptation capacity and systematically reduce the hydric vulnerability in the country* and Forest and agriculture: *Increase the capacity of joint adaptation and mitigation through the comprehensive and sustainable management of forests*.

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

104. The Central Valley of Tarija region is characterized by its cultural and biological biodiversity. Hence, the work approach should be based on governance and planning at landscape and watershed scale to implement land degradation neutrality, improve productive capacity and increase carbon sequestration. This has the purpose of choosing the right combination of components that constitute the integral and sustainable management of the watershed through the promotion of sustainable productive systems, and water source conservation and sustainable land use.

105. The proposal will integrate traditional communication with new multimedia and cross media technologies in order for the lessons and policies to be socially relevant and for the regions to become owners of the knowledge through dialogue and social consensus and to facilitate outscaling of the project experiences.

106. The project will contributes with important bases of territorial planning approach considering the landscape into a subbasin level as the unit for implementing measures to reverse land degradation and improve the aptitude of the land increasing at the same time stock levels of carbon, increasing productivity of crops, livestock and involving communities based on gender on the definition of actions into the plans approach.

107. The financial mechanism is a challenge since it is the first proposal model of local intervention in the country to preserve soils, water, vegetation and also improve and diversify

production of small farmers that is based on the basis of local planning, the monitoring system will play an importante role measuring the results and effects of the actions considering LDN indicators.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Environmental and Social Safeguards ? Risk screening at PIF stage:

In line with the FAO Environmental and Social Management Guidelines (ESMG), the implementing agency has conducted an Environmental and Social Safeguards (ESS) screening at PIF stage. A full environmental, social and climate risk analysis will be conducted during PPG phase.

As per the ESS checklist screening, the project has been classified as Moderate risk. The table below summarizes the Environmental and Social risks identified in relation to the proposed project:

Safeguard Triggered	Risk Identified	Answer	Risk Classification	Reference Guidance	Additional Description (if any)
1- Natural Resource Management	1.5 - Would this project aim at improving an irrigation scheme (without expansion)?	Yes	**Moderate**	The ICID-checklist will be included, as well as appropriate action within the project to mitigate identified potential negative impacts. Projects aiming at improving water efficiency **will carry out thorough water accounting** in order to avoid possible negative impacts such as waterlogging, salinity or reduction of water availability downstream.	The project will adapt planning and capacity-building methodologies in a participatory manner for the restoration of irrigation systems. On the other hand, protocols will be developed for resilient and efficient irrigation systems for food production, in order to increase production and yield.

	1.10 - Could this project result in any changes to existing *tenure rights*? (*formal and informal*?) of individuals, communities or others to land, fishery and forest resources? ?Tenure rights are rights to own, use or benefit from natural resources such as land, water bodies or forests ?Socially or traditionally recognized tenure rights that are not defined in law may still be considered to be 'legitimate tenure rights'.	Yes			Territorial plans at community and micro-watershed level to reduce degradation and improve adaptive capacity are expected to also secure governance over resources for local communities and producers
	1.10.1 - Could this project result in a negative change to existing legitimate tenure rights?	No	**Moderate**	Demonstrate how the project applies and adheres to the principles/framework of the Voluntary Guidelines on the Responsible Governance of Tenure land, Fisheries and Forests in the Context of Nation Food Security (VGGT)	

9- Indigenous peoples and cultural heritage	9.4 - Would this project be located in an area where cultural resources exist?	Yes	**Moderate**	To preserve cultural resources (when existing in the project area) and to avoid their destruction or damage, due diligence must be undertaken to: ?a)?verify that provisions of the normative framework, which is usually under the oversight of a national institution responsible for protection of historical and archaeological sites/intangible cultural heritage; and ?b)?through collaboration and communication with indigenous peoples' own governance institutions/leadership, verifying the probability of the existence of sites/intangible cultural heritage that are significant to indigenous peoples. In cases where there is a high chance of encountering physical cultural resources, the bidding documents and contract for any civil works must refer to the need to include recovery of "chance findings" in line with national procedures and rules.	Practices will be designed and implemented in a participatory manner, which will help to reduce the vulnerability of local productive systems.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted

Title	Submitted
ESSSupportingDocument_PIF Guadalquivir Climate Risk Screening SummaryESS risk certification	

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 Point endorsement letter with this template).

Name	Position	Ministry	Date
Mr. Alfredy Alvarez Saavedra	Vice Minister of Environment, Biodiversity, Clmate Change, Forest Development and Management	Ministry of Environment and Water	3/20/2020

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Map 1. Localization of Guadalquivir Basin