



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: Integrated Water Resources Management in the Titicaca-Desaguadero-Poopó-Salar de Coipasa System (TDPS)			
Country(ies):	Bolivia and Peru	GEF Project ID: ¹	5748
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4383
Other Executing Partner(s):	Ministry of Foreign Affairs of the Plurinational State of Bolivia, Ministry of Environment and Water (MMAyA) of the Plurinational State of Bolivia, Ministry of Environment (MINAM) of Peru, Ministry of Foreign Affairs of Peru.	Submission Date:	25 November 2015
GEF Focal Area (s):	International Waters	Project Duration(Months)	48
Name of Parent Program (if applicable):		Project Agency Fee (\$):	623,556
	<ul style="list-style-type: none"> ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/> 		

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
IW-3 (select)	Outcome 3.1: Political commitment, shared vision, and institutional capacity demonstrated for joint, ecosystem-based management of waterbodies and local ICM principles	National inter-ministry committees established; TDA & SAP programmes; local IWRM or ICM plans [National inter-ministry committees established; 1 TDA & 1 SAP; local IWRM plans]	GEF TF	2,142,050	12,629,136
IW-3 (select)	Outcome 3.2: On-the-ground modest actions implemented in water quality, quantity (including basins draining areas of melting ice), fisheries, and coastal habitat demonstrations for “blue forests” to protect carbon	Demo-scale local action implemented, including in basins with melting ice and to restore/protect coastal "blue forests" [11 pilot projects]	GEF TF	2,859,200	21,587,596
IW-3 (select)	Outcome 3.3: IW portfolio capacity and performance enhanced from active learning/KM/experience sharing	Active experience / sharing / learning practiced in the IW portfolio	GEF TF	998,750	4,847,525
Project management Cost (PMC) ³ (including Direct Project Costs: \$80,000)				563,750	1,665,143
Total project costs				6,563,750	40,729,400

¹ Project ID number will be assigned by GEFSEC.

² Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

³ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

B. PROJECT FRAMEWORK

Project Objective: To promote the conservation and sustainable use of water resources in the Titicaca - Desaguadero – Poopó - Salar de Coipasa (TDPS) transboundary system, through the updating the Global Binational Master Plan						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
1. Strengthening the tools for binational and national management in the TDPS system: preparation of a Transboundary Diagnostic Analysis and updating the Binational Global Master Plan (SAP) for the TDPS system	TA	Outcome 1. The Transboundary Diagnostic Analysis (TDA) and the Strategic Action Programme (SAP) for the TDPS have been formulated and adopted. Outcome 2. Improved institutional capacity to implement IWRM in the TDPS system in both countries	1.1. Additional studies to support the preparation of a TDA for the TDPS 1.2. TDA validated by the countries. 1.3. Strategic Action Programme formulated by a participatory process, integrating an IWRM approach, adopted by both countries. 2.1. Training of key stakeholders in IWRM. 2.2. Actions to strengthen the institutional arrangement for binational management of the TDPS.	GEF TF	3,542,050	12,629,136
2. Evaluation of interventions at the pilot scale	TA	Outcome 3. Practical learning generated in pilot experiences contribute to the development of the SAP and to decision making.	3.1. Eleven pilot projects on relevant issues of the TDPS 3.2. The systematization of the results of pilot projects and the analysis of their applicability to the TDPS system are accessible and available to all stakeholders in the area.	GEF TF	1,459,200	21,587,596
3. Support system to follow up on the TDPS status and implementation of the Binational Global Master Plan	TA	Outcome 4. Updated, accurate, and relevant information on TDPS management is available and accessible to allow implementation of the SAP with an adaptively approach, including attention to social and gender variables.	4.1. TDPS monitoring program	GEF TF	349,450	3,078,632
4. Improved communication, education, and participation of key stakeholders.	TA	Outcome 5. Key stakeholders know the core issues of the TDPS, become empowered and act in the context of IWRM to advance workable solutions. Outcome 6. Key	5.1. Website for the dissemination of project results, including the exchange of experiences through IW:LEARN and participation in IWC . 5.2. Strategies for environmental education and communication for	GEF TF	649,300	1,768,893

Project Objective: To promote the conservation and sustainable use of water resources in the Titicaca - Desaguadero – Poopó - Salar de Coipasa (TDPS) transboundary system, through the updating the Global Binational Master Plan						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
		stakeholders actively participate in a coordinated manner to address the core problems in the TDPS system.	IWRM in the TDPS. 6.1. Strategy for citizen participation and articulation among stakeholders in support of IWRM in the TDPS system.			
Subtotal					6,000,000	39,064,257
Project management Cost (PMC) (including Direct Project Costs: \$80,000 ⁴)				(select)	563,750	1,665,143
Total project costs					6,563,750	40,729,400

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the projects with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
National Government	Government of Bolivia	Grant	14,800,000
National Government	Government of Bolivia	In kind	1,500,000
National Government	Government of Peru	Grant	8,795,623
National Government	Government of Peru	In kind	14,803,777
Foundation	IUCN	In-kind	120,000
Foundation	CAFOD	In-kind	66,000
Local Government	IES Mariano Melgar	In-kind	229,000
GEF Agency	UNDP - Peru	Grant	50,000
GEF Agency	UNDP - Peru	In-kind	25,000
GEF Agency	UNDP – Bolivia	Grant	50,000
GEF Agency	UNDP – Bolivia	In kind	25,000
GEF Agency	UNDP Cap-Net	In-kind	265,000
Total Co-financing			40,729,400

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b)²	Total c=a+b
UNDP	GEF TF	International Waters	Bolivia, Peru	6,563,750	623,556	7,187,306
Total Grant Resources				6,563,750	62,556	7,187,306

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

⁴ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	0	0	0
National/Local Consultants	719,000	0	719,000

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION**A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁵**

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

NO CHANGES

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.

NO CHANGES

A.3 The GEF Agency’s comparative advantage:

NO CHANGES

A.4. The baseline project and the problem that it seeks to address: The baseline project and the problem to be addressed have not changed. However, the strategy of the project was fine-tuned to be a catalyst to mainstream IWRM and stakeholder involvement and participation into local, national and binational watershed management. Multi-level dialogue and cooperation is fundamental to confront the key issues in the TDPS. Therefore, the Strategic Action Programme will be built through a bottom-up (watershed based) highly participatory process involving the key stakeholders. The number of outcomes and outputs were modified to have more precision and detail on the intervention. The PIF included the following elements: Component 1 - two outcomes and four outputs, Component 2 - three outcomes and one output, Component 3 - one outcome and one output, and Component 4 - three outcomes and one output. The outcomes were reduced from eight in the PIF to six in the PRODOC, and the outputs were increased from six in the PIF to 11 in the PRODOC. In addition, minor changes were done in the amount of resources allocated to the four components. USD201.250 were moved from components 3 and 4 to increase the funds in component 1 (i.e., add USD142.050) and component 2 (i.e., add USD119.200). In component 1 more resources were needed to sustain a highly participatory process to build the SAP. In component 2 the additional resources will be used to document and disseminate the learnings from the pilot projects and DPC to support their implementation.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project: The project will generate global benefits by catalyzing the sustainable management of the Titicaca - Desaguadero - Poopó - Salar de Coipasa water system (a transboundary endorheic watershed of 143,900 km²) and the conservation of high value biodiversity (e.g., Titicaca giant frog, Titicaca grebe, endemic fish of the genus *Orestias*). Without this intervention, it is very likely that current deterioration will continue in the TDPS, as a result

⁵ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

of uncoordinated actions based on sectoral and local visions and perspectives. The key incremental actions will be to support:

- (i) The preparation of a binational TDA and SAP to have an agreed framework of action. The SAP will be an updated version of what is currently called the Binational Masterplan, but incorporating (a) the conceptual basis of IWRM, (b) new considerations (e.g., climate change, biodiversity conservation), and (c) the involvement and collaboration of public and private key stakeholders at the local and national levels.
- (ii) The strengthening of the binational institutional arrangements agreed by Bolivia and Peru to manage the shared water resources.
- (iii) The promotion of multi-level dialogue and direct involvement of key stakeholders in each of the 14 watersheds that conform the TDPS.
- (iv) The generation of learnings on IWRM within an endorheic system that will be useful at the local, national and international levels.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

Risk	Level	Mitigation Measures
Natural. ENSO. It is documented that rainfall decreases in the TDPS during El Niño. During 2015 El Niño conditions developed between weak and moderate. A strong El Niño has developed, by 8 October 2015 there was a probability of 95% that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening through spring 2016 ⁶ .	High	The relationship between ENSO events and climate in the TDPS will be included in the preparatory analyses for the new master plan and will be shared with key stakeholders.
Natural. Occurrence of extreme weather events (hail, frost, drought, floods) that adversely affect the pilot projects. These events are common in the TDPS.	High	It has been ensured that the pilots consider this risk and include measures to prevent negative impact during implementation.
Social. Increased conflicts around the Ramis and Suches rivers due to illegal mining. In case of escalation of conflicts, this could affect the pilot projects implemented in these areas and social participation could be reduced.	High	The project team will establish and maintain direct communication and information channels with local stakeholders and will seek to establish relations of trust with them.
Social. Increased conflicts in the Coata River basin (PER) due to sewage contamination from EPS SEDAJULIACA S.A. This could reduce social participation in the project.	High	The project team will establish and maintain direct communication and information channels with local stakeholders and will seek to build trust with them.
Social. Mobilization due to decreasing captures and decreased number of members in the Fishermen Federation of La Paz with the risk of distrust and	High	The project team will establish and maintain direct communication and information channels with this key stakeholders and will try to

⁶ Climate Prediction Centre, National Oceanic and Atmospheric Administration (NOAA).
GEF5 CEO Endorsement Template-February 2013.doc

Risk	Level	Mitigation Measures
inaction on the part of this key stakeholders regarding the project actions.		establish relations of trust to encourage their participation in the project.
Social. Protests of irrigation users in the Desaguadero River basin due to decreased flow of river water. This could lead to distrust among the key stakeholders in the area.	High	The project team will establish and maintain direct communication and information channels with local stakeholders and will seek to establish relations of trust to encourage their participation in the project.
Political. Persistent distrust among national and subnational stakeholders. This can motivate a disconnection among key stakeholders of the project.	High	The project will promote the development of trust and will facilitate coordination and political dialogue between stakeholders at different levels.
Political. Disinterest among local stakeholders and beneficiaries to become involved and participate in the pilot projects.	Medium	It has been ensured that the proponents of pilot projects have informed the local stakeholders and have obtained their conformity.

A.7. Coordination with other relevant GEF financed initiatives

The project will use the lessons learned from the following GEF projects:

1. The projects for the preparation and implementation of the strategic action programme for the Bermejo River Basin (GEF-ID 176 and 886), implemented by UNEP in Bolivia and Argentina.
2. The project on sustainable management of water resources in the La Plata River Basin with respect to the effects of climate variability and change (GEF-ID 2095), implemented by UNEP and executed by the Organization of American States.
3. The project on integrated and sustainable management of transboundary water resources in the Amazon River basin, implemented by UNEP and executed in the framework of the Amazon Cooperation Treaty Organization (OTCA), in which Bolivia and Peru participate.

Of particular interest will be the coordination and exchange of information with the following GEF projects:

1. Implementation of comprehensive measures to minimize mercury discharges from artisanal gold mining (GEF-ID 4799), which is being implemented by UNIDO in Peru.
2. Adaptation to climate change impact on water resources in the Andes (GEF-ID 5384), which is currently in preparation. It is being implemented by the World Bank in Bolivia, Colombia, Ecuador, and Peru.
3. Developing of risk management approaches for mercury in Latin America (GEF-ID 5494). It is a regional project implemented by UNEP in Peru.
4. Development of the initial evaluation of the Minamata Convention in Latin America and the Caribbean (GEF-ID 5879), a UNEP regional project which includes Bolivia.
5. National Biodiversity Strategy and Action Plan (GEF-ID 5888), currently implemented by the IDB in Bolivia.
6. Support to 16 eligible parties to align the National Action Programmes and reporting process under UNCCD (GEF-ID 5898), which is an international project of UNEP that includes Bolivia.
7. Support for NAP alignment and reporting of UNCCD (GEF-ID 5899), implemented by UNDP in Peru.

It will be essential to maintain close coordination with the GEF project on integrated water resources management in the Puyango-Tumbes, Catamayo-Chira and Zarumilla transboundary aquifers and river basins (GEF-ID 5284), to be implemented almost simultaneously in Ecuador and Peru by UNDP. The implementing partner of the project in Peru is

ANA, it will be important to exchange experiences in the preparation of the TDA and SAP, implementation of pilot projects, monitoring the impacts caused by gold mining, creation of watershed councils, and integrated management of water resources. In addition, courses and education and communication materials could possibly complement each other.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation. During the PPG key stakeholders were identified. The project incorporates a participatory approach and has maximized the engagement of the key stakeholders of the water system. The preparation of the TDA will be done with the involvement of technical and academic stakeholders. Afterwards the draft TDA will be disseminated through electronic platforms and workshops will be organized with stakeholders in each of the four major hydrographic units (i.e., Titicaca, Desaguadero, Poopó, and Salar de Coipasa) to validate the findings. The preparation of the SAP will be done following a watershed-based bottom-up approach. Technical promoters will be hired to drive the participatory process in each of the 14 hydrographic units that make up the TDPS system, to build proposals that articulate IWRM at the local levels with an integrated perspective of the entire system. The SAP will be submitted to the consideration of both governments for their formal approval and finally will be published and disseminated to make it accessible to local stakeholders. It is expected that public and private stakeholders will internalize the SAP into their own plans and therefore will contribute to its implementation.

There are a number of actions to contribute to the development of human and social capital at all levels. For example, there will be training activities aimed both at governmental officers (local, regional and national governments) and social and productive organizations (output 2.1). Also, there will be actions, like electronic networking and in-person workshops, to promote communication and to encourage the building of trust and articulation among key stakeholders of the TDPS (outputs 5.2 and 6.1). The project will prepare and initiate the implementation of strategies for environmental education, communication, and citizen participation, it is expected that from the fourth year on, ALT will fully assume the implementation of these strategies.

Finally, the 11 pilot projects (component 2) will be an opportunity to engage public and private local stakeholders and interest groups into practical exercises to address key issues of the endorheic system. The learnings of the pilot projects will be widely disseminated for the benefit of local groups as well as international audiences.

B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

The Project will be a catalyst to encourage a better management of the water system, but during its foundational phase cannot solve all the pressing issues like treating urban and industrial wastewater and the proper manage of mine tailings and environmental liabilities. Therefore the full range of socioeconomic benefits and impacts of the project will not be seen immediately but over a longer time frame once the SAP is adopted and implementation scaled up. In the short-term, the TDPS resource users, including women and indigenous, would benefit from strengthening their participation in the decision-making processes and from building partnerships and trust with other stakeholders. This will, in turn, contribute to empower women by having direct involvement into governance processes for water management. Also, municipalities and other relevant authorities will identify and plan key investments under their jurisdiction to address major threats like untreated wastewater and mine tailings. In the medium-term, it is expected that local groups will benefit from access to sustainable and safe water resources, goods, and the biodiversity functions in TDPS. At the nationwide level, the project will contribute to mainstream integrated water resources management, which is central to the strategies for water resources in both countries. It will also encourage dialogue among multilevel key stakeholders to achieve their support to conservation of water resources and biodiversity. Multi-level dialogue will also contribute to engage indigenous groups and women into governance processes.

B.3. Explain how cost-effectiveness is reflected in the project design:

The project will ensure the cost-effectiveness of GEF resources through:

1. Allocate GEF funds to activities and products with high catalytic potential, such as:
 - a. Participatory processes for the construction of TDA and SAP.

- b. Design of a transboundary IWRM course for officials from national, regional, and local governments and an IWRM course for social and productive organizations in TDPS, including training of trainers.
 - c. Systematization and dissemination of experiences from pilot projects.
 - d. Design and implementation of strategies for environmental education, communication, and participation.
 - e. Use of electronic platforms to: (i) facilitate access to information for decision making (TDPS information website), (ii) disseminate lessons learned and outcomes of the project, and (iii) facilitate communication and articulation among key stakeholders.
2. Build on the lessons and experiences on management of transboundary water systems and the outcomes of other projects and initiatives.
 3. Anchor the continuation of activities in the new structure of ALT and in entities at the national, regional, and local levels with competence and responsibility to address the critical issues in the TDPS (e.g., polluted water discharges).

In summary, the cost-effectiveness of the project is reflected by the fact that future major changes in the TDPS could be obtained with a relatively small investment in key catalytic strategic actions, with a high degree of synergy and replicability.

C. DESCRIBE THE BUDGETED M & E PLAN:

Type of M&E activity	Responsible partner	Budget USD Excluding project team staff time	Time frame
Inception workshop and report	CBP UNDP-COs RSC-LAC	8,000	During the first two months after project start
Quarterly progress reports	Project team Lead UNDP-CO	None	Quarterly
APR/PIR	CBP UNDP-COs	None	Annual
Field visits	Lead UNDP-CO RSC-LAC Project team	16,000	Annual
Binational Steering Committee meetings	CBP Lead UNDP-CO	24,000	Semestral
Binational Technical Committee meetings	CBP Lead UNDP-CO	32,000	At least semestral
Mid-Term Evaluation	Lead UNDP-CO RSC-LAC Project team External evaluator (international)	25,000	End of year 2
Terminal Evaluation	Lead UNDP-CO RSC-LAC Project team External evaluator (international)	28000	Three months before the end of the project
Project Terminal Report	CBP and Project team	0	Three months before the end of the project
Audits	Auditors	40,000 (10,000/audit)	Annual
Total indicative cost Excluding staff time and travel expenses of the project team and UNDP		173,000	


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\(s\)](#) with this form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Roberto Salvatierra	Vice-Minister, Vice Ministry of Environment, Climate Change and Forest Management and Development.	MINISTRY OF ENVIRONMENT AND WATER (BOLIVIA)	19 FEBRUARY 2014
Jose Antonio González Norris	Director of International Cooperation and Negotiations	MINISTRY OF ENVIRONMENT (PERU)	27 FEBRUARY 2014

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu, UNDP-GEF Executive Coordinator		25 Nov 2015	José Vicente Troya, Regional Technical Advisor, Waters & Oceans	+507-302-4636	Jose.troya@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Project objective. To promote the conservation and sustainable use of water resources in the Titicaca - Desaguadero – Poopó - Salar de Coipasa (TDPS) transboundary system, through the updating the Global Binational Master Plan ⁷ .	Number specific of binational commitments to address critical aspects of conservation and sustainable use of water resources and advance of IWRM in TDPS	0	≥ 3 commitments 1. Water quality standards harmonized 2. Agreement to reduce the polluting load of domestic and industrial sewage 3. Agreement for optimizing the TDPS monitoring system	Binational commitments	Both countries maintain their political commitment to strengthen the binational management of the TDPS and to advance IWRM. It is a priority in the political agenda of the countries to address the major anthropogenic pressures that negatively affect the TDPS. There is good communication and collaboration among government agencies in both countries. The changes resulting from the general elections in Peru (2016) and Bolivia (2019) do not affect the binational management of the TDPS.
	Number of organizations for watershed management/ councils for basin water resources	1 ⁸	≥3	Instruments that establish organizations for watershed management/ councils for basin water resources	
	Government investment to control and mitigate major environmental pressures in the TDPS ⁹ (USD)	To be calculated at the start of the project ¹⁰	Increase of ≥50%	State budget	
Outcome 1. The	Approval of TDA and	The original PDGB	Year 3. TDA formally	Instrument on	TDPS key stakeholders

⁷ The Binational Global Master Plan for the TDPS water system is the framework for joint action agreed between Bolivia and Peru. The original PDGB was ready in 1995. The PDGB is equivalent to the Strategic Action Programme as defined by GEF within the International Waters focal area.

⁸ Management entity for Katari River basin (Bolivia).

⁹ Major pressures are understood to be: [1] discharge of untreated domestic sewage, [2] discharge of untreated industrial wastewater, [3] improper disposal of solid waste, [4] discharge of mine tailings and pollution due to poorly managed environmental liabilities. The indicator is measured on the basis of a constant value that uses the year 2014 as a reference.

¹⁰ The baseline will be the investments made in 2014.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Transboundary Diagnostic Analysis (TDA) and the Strategic Action Programme (SAP) for the TDPS have been formulated and adopted.	SAP. The SAP is based on IWRM and watershed management	does not include the IWRM perspective. Both countries have adopted the concept of watershed management.	approved by both governments. Year 4. SAP formally approved by both governments.	binational recognition ¹¹ of TDA and SAP	are involved and actively participate in the development of SAP.
			Year 4. SAP incorporates IWRM strategies for each hydrographic unit, (levels 3 and 4) in the TDPS (14 units)	SAP	
Outcome 2. Improved institutional capacity to implement IWRM in the TDPS system in both countries.	Number of officials of national, regional, and local governments trained on IWRM (people/ hydrographic unit of levels 3 and 4)	0	Year 2. >10 staff/ hydrographic unit, levels 3 and 4 Year 4. > 25 officials / hydrographic unit, levels 3 and 4	Memoirs of training events, including registry of participants ¹² .	TDPS key stakeholders are motivated to implement IWRM. Political factors do not limit collaboration among key stakeholders in national, regional, and local governments. Social and productive organizations are actively involved in TDPS management.
	Number of social and productive organizations trained in IWRM (people / hydrographic unit of levels 3 and 4)	0	Year 2 > 20 persons/ hydrographic unit, levels 3 and 4 Year 4 > 50 persons/ hydrographic unit, levels 3 and 4		
Outcome 3. Practical learning generated in pilot experiences contribute to the development of the SAP and to decision making.	Number of municipal, regional and national policies based on the outcomes of pilot projects	0	Year 3. > 2 Year 4. > 10	Decisions by public bodies that explicitly refer to the outcomes of the pilot projects.	Key stakeholders in national, regional, and local governments and social and productive groups value the results of the pilot projects and use them for their decision- making.

¹¹ Approval by the Project Steering Committee will be sufficient.

¹² It must include at least the following information: (1) full name, (2) personal identification number, (3) organization, and (4) signature.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Outcome 4. Updated, accurate, and relevant information on TDPS management is available and accessible to allow implementation of the SAP with an adaptively approach, including attention to social and gender variables.	Level of satisfaction ¹³ with the quality of information and accessibility for national, regional and local authorities, and social and productive organizations.	0	Year 2. > 50% satisfied Year 4. > 80% satisfied.	Survey among representative samples in each hydrographic unit, levels 3 and 4 (14 hydrographic units)	The target groups ¹⁴ have the means to access information. The target groups are interested in using TDPS information for their activities and decision-making processes.
Outcome 5. Key stakeholders know the core issues of the TDPS, become empowered and act in the context of IWRM to advance workable solutions.	Level of knowledge of public authorities and social and productive leaders about the issues in the TDPS and on existing instruments for binational management of the system.	60%	Year 2 =>70% Year 4 =>80%	Survey among representative samples in each hydrographic unit, levels 3 and 4 (14 hydrographic units)	The target groups have the means to access information websites TDPS key stakeholders are interested in the issues present in the system.
Outcome 6. Key stakeholders actively participate in a coordinated manner to address the core problems in the TDPS system.	Number of platforms ¹⁵ with active involvement from public authorities and social and productive leaders.	2 ¹⁶	Year 2 \geq 4 Year 4 \geq 8	Assessment on continued presence of key stakeholders in each platform in years 2 and 4.	Political differences and particular interests do not limit the involvement and participation of key stakeholders in the platforms. There is a fluid and constructive dialogue between stakeholders from both countries.

¹³ To be assessed by using a four-point scale: [1] dissatisfied, [2] somewhat satisfied [3] satisfied [4] very satisfied.

¹⁴ i.e., national, regional and local authorities, as well as social and productive organizations.

¹⁵ At least the following platforms will be evaluated: (1) Management body for Katari River Basin [Bolivia], (2) Platform for Poopó Basin [Bolivia], (3) Multisectoral Commission for Environmental Prevention and Recovery of Lake Titicaca Basin and its Tributaries [Peru], (4) Water Resources Council of Titicaca watershed [Peru] [when consolidated], (5) Binational Technical Commission on Suches River (Bolivia – Peru), (6) Binational Technical Commission on Maure-Mauri River, (7) National Commissions for ALT Affairs (CONALT Peru and CONALT Bolivia).

¹⁶ Water Resources Council of Titicaca Basin [Peru] and Inter-institutional Platform for the Master Plan of Katari Basin [Bolivia].

Results framework of the pilot projects (outcome 3)

01-B-01. Application of ancestral technologies for sedimentation control at the source. San Andrés de Machaca.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
<p>Objective: Identifying, implementing and evaluating the intervention measures for integrated management and conservation of basins and water based on ancestral technologies that contribute to control of sediment in source.</p>	<p>Application of 10 measures of intervention for integrated management and conservation of basins and water based on ancient technologies.</p>	<p>In the area of the project, there is no intervention measure for integrated management and conservation of basins and water based on ancient technologies that contribute to sediment in source control.</p>	<p>Ancestral practices or technologies have been identified and applied.</p>	<p>Systematization of documents on ancestral practices.</p>	
<p>Outcome 1: Application of ancestral practices, allowing the reduction of the rate of erosion in the basin and decrease in sediment production.</p>	<p>Indicator 1.1: Ten ancestral practices implemented.</p> <p>Indicator 1.2: Five sediment trapping demonstration plots established.</p>	<p>Soils in the Jacha Mauri basin have high levels of moderate, severe, and very severe erosion, mostly from human action, which generates the production of sediments. Ancestral practices of erosion control and sediment yield are not applied. Estimates of erosion and sediment transport in this basin include: Moderate erosion: 894.1 km² (53%). Severe erosion: 205.7 km² (12%) Very severe erosion 57.0 km² (3%), with a</p>	<p>In the two years of the project, 10 ancestral practices have been implemented erosion control and 5 demonstrative plots for sediment retention.</p>	<p>Documents with systematization of ancestral practices and control of sediment.</p>	<p>Lack of interest from local experts to share their knowledge.</p>

		total of 1.156.8 km ² (68%).			
Outcome 2: Installed capacities in the 12 participating communities have been developed.	<p>Indicator 2.1: Ten events for exchange of experiences, dialogue of knowledges, and training.</p> <p>Indicator 2.2: One officer of the Technical Office trained.</p> <p>Indicator 2.3: A team of community leaders, with 30% of women, trained for replication.</p>	<p>Technical Office has no capacities in the subject area.</p> <p>Community members have no capacity to replicate experiences.</p>	<p>In the two years of the project, 5 documents have been published and 10 events for exchange of experiences, dialogue, knowledge, and training have been conducted.</p> <p>Also, one officer from the municipality has been trained as well as a team of community members.</p>	<p>Documents and publications.</p> <p>Name of officer trained.</p> <p>List of community members trained.</p>	<p>Low interest in participating in events on the part of the community, municipality, and other local stakeholders.</p> <p>Low participation of women.</p>

02-B-02. Revitalization of bofedales to contribute to water availability. Charaña municipality

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Objective: Revitalization of bofedales to protect their biodiversity and ensure sustainable use and management.	Three pilot bofedal areas revitalized. Sustainably managed bofedales 90 community members trained in bofedal and vicuna herd management.	Degraded bofedales with issues related to overgrazing, water shortages, and biodiversity loss.	16 ha of bofedales are revitalized after three years of the project.	Increased amount of plant material. Community members trained in the management of bofedales and camelids.	
Outcome 1: Bofedales revitalized and improved as living ecosystems.	1.1. Three areas delimited by type of bofedales and description of the sites: (Slope, topography, vegetation, and other site features).	There is no description of bofedal sites for delimitation.	Delimitation of areas according to types of bofedales completed.	Report on features related to slope, relief, types of vegetation in the three areas of bofedales.	
	1.2. Preparation of three maps for pilot sites with information on types associations related to the bofedales.	There are no maps of pilot sites with information on the types of associations related to the bofedales.	Development of three maps on pilot sites with information about associations related to bofedales completed.	Thematic maps completed.	
	1.2.	There is some	Years 1 and 2:	Soil base map.	The reports on physical

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
	Soil characterization (physical and chemical soil characteristics) in the three areas of bofedales.	secondary physicochemical information and soil analysis for the Charaña Municipality	Pre-field stage (base soil map). Fieldwork stage (mapping and soil sampling).	Soil samples collected in the field. Report on physical and chemical analyses by the laboratory. The soils are characterized.	and chemical features of soil are not delivered by the laboratory. The laboratory is not certified.
	1.1. Determination of water features of the bofedales: volumes and quality.	There is no information on volumes and quality of water in the bofedales.	The assessment on the capacity of streams and surface runoff is completed. The examination of water quality is completed.	Water samples collected for analysis. Laboratory reports on water quality. Results of gauging of streams.	Lack of material and non-standardized equipment for gauging the capacity of rivers.
	1.6 Characterization of the floristic composition and productivity of the three bofedal sites (condition of the bofedales in rainy and dry seasons, determination of the chemical composition of native prairie, estimation of the productivity, and animal load.)	There is some secondary information on the floristic composition of the bofedales.	Years 1, 2 and 3: The characterization of the floristic composition of the bofedales is completed. The determination of the chemical composition of grasslands with bofedales is completed. The estimation of productivity of bofedales is completed.	<ul style="list-style-type: none"> ▪ Experimental units installed. ▪ Report on the characterization of the floristic composition. ▪ Report on the productivity of bofedales. 	
Outcome 2: The bofedales have a plan for water use (water demand for optimum use).	2.1 Determination of water consumption or demand by alpacas with 6 animals per pilot site for 10 days in each month for 6 months (3 months/season) on the basis of dry matter intake.	There is no information on consumption or demand for water by animals in the area.	Information related to the planning on water demand by local animals has been collected.	Report on water consumption by livestock. Reports on forage consumption (dry matter under free grazing in bofedales).	Droughts due to climate change. El Niño and La Niña.
Outcome 3: Local capacities are achieved.	3.1. Staff at the Technical Office of the Charaña Municipality	<ul style="list-style-type: none"> • Technical Office staff not trained. 	All the regular meetings of the Replication Inter-	List of attendees.	

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
	trained. 3.2. A team of 90 community members trained on the subject of sustainable management and use of bofedales.	Team of community members not trained.	institutional Team were carried out.		

03-B-03. Bioremediation of Huatajata and Cohana Bay areas in Lake Titicaca and economic and cultural revaluation of totora reeds.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
General objective: Proposing two innovative techniques to reduce the contamination of Katari River and the shores of Huatajata on Lake Titicaca by bioremediation of waters with added socio-economic and cultural benefits for local communities.	Reduction of the concentrations of phosphate, dissolved organic carbon (DOC), impoverishment of the $\delta^{15}\text{N}$ and enrichment of $\delta^{13}\text{C}$ in filters and sediments. Number of communities, municipalities and governmental organizations informed and systematized data on the use of totora reed and its economic potential.	In Katari, phosphate of 25 ppm, DOC of 23 ppm, $\delta^{15}\text{N}$ in filters 12.20, a level of $\delta^{13}\text{C}$ of - 30 in sediments. In Huatajata, phosphate 0.062 ppm, 11 ppm COD, and $\delta^{15}\text{N}$ average of 1.17. No community, municipality, or organization has these data to be generated.	After one and a half years of implementation of the treatments: in the effluent of Katari there will be a reduction of phosphate to 15 ppm, 12 ppm COD, and $\delta^{15}\text{N}$ in filters 9, and a level of $\delta^{13}\text{C}$ -10 in sediments. In Huatajata, phosphate to 0.03 ppm, 8 ppm COD, and an average $\delta^{15}\text{N}$ of 0.6. By the end of the project at least two communities, two municipalities, ALT and MMAyA will have systematic data on the use of totora and its socio-economic potential.	Laboratory results, reports to financiers, and scientific publications.	In Katari River, we assume that a community will be willing to provide space and support the activities. We assume that in Huatajata extreme weather will not alter the functioning of the system.
Outcome 1: Reduction of the levels of contamination of water passing through the decontamination system in Katari River.	Phosphate concentrations, dissolved organic carbon, impoverishment of $\delta^{15}\text{N}$ and enrichment $\delta^{13}\text{C}$ in sediments.	In Katari, phosphate of 25 ppm, COD of 23 ppm, $\delta^{15}\text{N}$ in filters is 12.20, a level of $\delta^{13}\text{C}$ - 30 in sediments.	After one and a half years of implementation of the treatments, in the effluent of Katari, there will be a reduction of phosphate to 15 ppm,	Technical and scientific reports.	We hope to reach an agreement with some of the communities to use part of their land and use it for a reasonable time.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
			COD to 12 ppm and $\delta^{15}\text{N}$ in filters will be 9, and a level of $\delta^{13}\text{C}$ will be - 10 in sediments.		
Outcome 2: Reduction of the average concentration of pollutants in the shores of Huatajata.	Phosphate concentrations, dissolved organic carbon, impoverishment $\delta^{15}\text{N}$.	In Huatajata, 0.062 ppm phosphate, COD 11 ppm and average of 1.17 in $\delta^{15}\text{N}$.	In Huatajata, phosphate to 0.03 ppm, 8 ppm COD, and average of 0.6 in $\delta^{15}\text{N}$ at the end of the second year.	Technical and scientific reports.	The construction of the reed stands will be completed in reasonable time with the support of local stakeholders.
Outcome 3: Reevaluation of the utilization and conservation of <i>Schoenoplectus californicus</i> ssp. <i>tatora</i> by local communities, as part of a socio-economic study on the feasibility and sustainability of replication of these initiatives.	Number of communities, municipalities, and governmental organizations informed; and systematized data on the use of totora and its economic potential.	None known	At the end of the project at least two communities, two municipalities, ALT, and MMAyA will have systematic data on the use of totora and its socio-economic potential.	Technical reports to the financier, publication for dissemination of results, ALT, MMAyA.	Local communities will be interested in sharing their knowledge and information about the use of totora reeds.

04-B-04. Water quality monitoring system in the Suches River basin. Bolivian section.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and assumptions
Objective Contribute to improving the quality of life of riverine residents with timely, adequate, and relevant information, obtained permanently, on the quality and quantity of water along the course of Suches River to plan and implement prevention, mitigation and/or remediation	Coefficient of percentage (%) variation of heavy metal concentration in the water	2014 Monitoring Results	By 2016, the concentration of heavy metals and critical elements in the various monitoring points is identified.	Lab analysis results	The timeframe for implementation of prevention and/or mitigation measures is not sufficient. Implemented measures are not effective.

measures to address negative environmental impacts on human health and the environment.					
Outcome 1: Monitoring system established with participation of national, departmental and local stakeholders.	Number of monitoring teams established.	No monitoring teams are established.	By 2016, there are 6 monitoring teams established and fully equipped and they have trained staff who conduct two monitoring campaigns per year	Analysis results, technical reports of municipalities, maps, database, geodatabase	
Outcome 2: Improved water quality of Suches River resulting from implementation of prevention, mitigation, and remediation measures to address negative environmental impacts in the short, medium and long term.	Number of prevention, mitigation and/or remediation measures applied.	No proposals for any prevention and/or mitigation measures to be applied	By 2016, there is an action plan that proposes measures to prevent and/or mitigate negative environmental impacts.	Applied measures.	The cost of prevention, mitigation, or remediation measures identified exceeds the budgeted amount. There is a lack of consensus among stakeholders regarding implementation of measures.
Outcome 3: Capacity building at different levels of government	Interinstitutional platform for quality measurement established	There is no interinstitutional committee.	By 2016, meetings of the Interinstitutional Platform are held regularly	Minutes of meetings	Lack of commitment on the part of entities in the interinstitutional platform

05-B-05. Permanent observatory of Lake Titicaca.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and assumptions
General objective: Understanding the hydro-chemical and biological dynamics of Lake Titicaca on the basis of the implementation of a sustainable scheme for	No. of key factors identified for the daily, seasonal, and annual variability.	The TITICACA SENSORS project by IRD and UMSA preliminarily identified some factors to observe.	Confirm the daily variability observed in the first observatory; identify the seasonal variability in a period of 2 years, and annual variability based on the data for 4 years (2 years	Databases in Geoportal; reports to financiers; and scientific publications.	We assume that extreme weather events in Huatajata or boat accidents in the area will not alter the functioning of equipment.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and assumptions
automated monitoring coupled to a routine sampling program.			from this project and 2 from the previous one). Identify at least 4 key variables that must be monitored in other sites of Lake Titicaca and the appropriate frequency for data collection.		
Outcome 1: Improvement of knowledge about the biogeochemical dynamics inside Lake Titicaca on the basis of high frequency data from Huatajata.	No. of physic-chemical and biological variables identified to experience significant fluctuations and No. of publications.	Main daily, seasonal, and annual variables identified and observed for two years.	Daily and seasonal variation patterns will be identified after two years of the project. At the conclusion of the project there will be annual patterns of variation and clear trends. It is expected that a scientific publication will be developed.	Technical and scientific reports	We expect no technical difficulties with the equipment that may hinder or interrupt monitoring.
Outcome 2: Relationship among different factors and specific phenomena in Lake Titicaca identified to prevent, or at least anticipate, the emergence of "blooms" of algae and other phenomena of great relevance to life and services provided by Lake Titicaca.	No. of relationships between physic-chemical and biological variables identified and number of publications.	No relationship has been identified.	At the end of the project there will be knowledge about the determining factors of at least 2 phenomena that are important to ecosystem, such as algae bloom and temporary eutrophication of the lower Lake. It is expected that a scientific publication will be developed.	Technical and scientific reports.	There will be sufficient information to establish the correlations between variables.
Outcome 3: Technical personnel of MMAyA and the governor's office of La Paz are capable of taking and interpreting monitoring data as well as sharing	No. of the technical staff in the governor's office and MMAyA, trained in this type of surveys and workshops in communities.	There are no technical staff trained in this type of monitoring.	At the end of the program there will be at least 10 technical staff trained in each institution. A teaching manual will be developed to extend the	Training records.	The permanence of the technical staff from the beginning to the end of the project is secured.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and assumptions
the generated information with local communities.			training. Also, at least 2 workshops to share the experience will have been carried out with the communities.		

06-P-01. Techniques for the reduction of sediment and mercury discharges from mining activities at the head of the Ramis River basin.

	Indicator	Baseline	Targets at the end of the project	Source for verification	Risks and assumptions
Objective Propose and validate a technique for bioremediation of sediments contaminated with waste originated in mining activities in the headwaters of tributaries of Lake Titicaca.	Increased number of validated techniques for bioremediation of sediments in the headwaters of tributaries of Titicaca.	Zero (0) validated techniques	At the end of the project, there is one validated technique for bioremediation of sediments.	Supporting document for technique validation.	No organism adapted to the climatic conditions in the region.
Outcome 1 Reduced sediment loads and levels of impact as well as environmental recovery of sediments at the head of Ramis River Basin.	% of reduction in sediment load. % of removal of harmful substances and heavy metals: Arsenic (As) Lead (Pb) Copper (Cu) Zinc (Zn) Chromium (Cr) Mercury (Hg)	Values exceeding the guidelines of the Canadian Ministry of Environment (Canadian Environmental Quality Guidelines - CEQG), according to reports.	At the end of the project there is a reduction of the polluting load in the sediments at a level lower than the benchmark value provided in the guidelines of the Canadian Ministry of Environment (Canadian Environmental Quality Guidelines - CEQG)	Laboratory analysis results	Rainfall above the average values for the last ten years.
Outcome 2 Validated techniques for bioremediation of sediments in water bodies affected by discharges of industrial wastewater.	Number of techniques under experimentation	No validated technique	3 validated (efficient) bioremediation techniques that are replicable in other bodies of water in the Altiplano region (TDPS)	Implementation and supervision reports	Rainfall above the average values for the last ten years.

07-P-02. Phytoremediation techniques in water bodies affected by domestic sewage. Inner Puno Bay.

	Indicator	Baseline	Targets at the end of the project	Sources of verification	Risks and assumptions
Objective: Propose and validate a phytoremediation technique for water polluted by domestic wastewaters discharges.	Number of validated phytoremediation techniques.	Zero (0) validated phytoremediation techniques in the area.	At the end of the project there will be at least three validated phytoremediation techniques.	Supporting documents on validation techniques.	At least one of the applied techniques can achieve positive results.
Outcome 1: Reduction of eutrophication and recovery of water quality of the Inner Bay of Puno on Lake Titicaca.	Impact indicators % of removal of nutrients (ammoniacal nitrogen and phosphorus) in the water column.	Ammoniacal nitrogen between 0.313 and 2.127 mg/L Total phosphorous (total P) between 596 ug/L and 905 ug/L.	Reduction regarding ECA Cat. 4 for Ammoniacal Nitrogen: <0.02 mg / L) in twelve months.	Monitoring reports.	Rainfall above the average values in the past ten years.
Outcome 2: Phytoremediation techniques validated in water bodies affected by domestic wastewaters.	Number of experimental techniques	No validated technique.	2 phytoremediation techniques validated (efficient) and replicable in other high plateau areas (TDPS)	Implementation and monitoring reports.	

08-P-03. Creation of the water resources management system for the Ilave River-Titicaca region in Puno.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Objective. Reduce environmental risks to the development of the residents of the Ilave – Titicaca basin	Increase of GDP of Puno Region.			INEI Statistical compendium for Department of Puno	Coordinated sectoral actions.
Improved hydro-meteorological information on Ilave - Titicaca basin.	- Availability of hydro-meteorological information center for the area of Ilave River basin at the end of the project. - Number of public and private institutions involved in the environmental information system.	0	1 Information centre.	- Registry of environmental information system of the basin. - Registry of the national environmental management system - Hydro-meteorological reports	- Political will and technical capacity to strengthen the information centre of Titicaca AAA. - Public, private and international agencies prepared to continue supporting technically and financially the development of environmental policies.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Outcome 1: Adequate infrastructure for the information centre	Facilities for the information centre running and implemented.	0	1 facility	Inventory of ANA infrastructure	
Outcome 2: Suitable equipment for conservation, management of water resources and information services.	<ul style="list-style-type: none"> - Implementation of meteorological, hydrometric, and water quality stations with an automatic transmission system. - Purchase and installation of a communication system. - Purchase and installation of computers, software, and materials. 	1 (SENAMHI)	<ul style="list-style-type: none"> 3 automated stations 1 system 1 module 	<ul style="list-style-type: none"> - Acquisitions - Institutional inventory records 	<ul style="list-style-type: none"> - Involved institutions maintain formal commitment to inter-agency cooperation for the implementation and operation of the project. - Suppliers meet technical requirements. - The population is aware of the importance of the project.
Outcome 3: Technical and administrative training for professionals in the information centre.	50% of SDCPRH, SDGCRH and SDUSNIR staff trained.	0	6 people	Registry of trained professionals.	
Outcome 4: Strategies and communication materials for the development of an environmental culture in the basin.	100% of the residents sensitized on water culture.	0	1,200	Registry of participating beneficiary residents	

09-P-04. Monitoring of the impact on water quality in areas of high pressure from fish farming by means of automated stations. Larger Puno Bay.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Objective: Preventing the deterioration of water quality in the Bay of Puno - Lake Titicaca as	Number of measures taken to prevent, remedy and/or mitigate environmental impacts generated by the trout	No measure of prevention, mitigation and/or remediation adopted.	At the end of the project impacts generated by the trout farming have been identified and measures	Implemented measures.	The lifespan of the project is sufficient to implement measures.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
a result of intensive trout farming.	farming.		for prevention, mitigation and/or remediation have been implemented.		
Outcome 1: There is timely, adequate, and relevant information on water quality in an area used for trout farming.	Alteration of water quality parameters: pH, DO, t°, C.E., Chlorophyll "a", turbidity, BOD ₅ , COD, NH ₃ , N _{total} , P _{total} , NO ₃ , PO ₄ .	Water quality parameters determined at the beginning of the implementation of the pilot project and monitoring targets.	At the end of the project, information from automatic stations is available online.	Monitoring reports in real-time and test reports issued by an accredited laboratory.	Extreme weather events.
Outcome 2: Sustainable development of aquaculture in Lake Titicaca.	Number of producers (men and women) with strengthened capabilities in practices for sustainable aquaculture.	Number of producers currently operating in the area of the project.	At project completion, 200 producers (men and women) develop sustainable aquaculture practices.	Lists of participants and surveys, evaluations of learning.	People demand immediate results

10-P-05. Strengthening of citizen capacities for integrated management of water resources through community-based environmental monitoring in the micro-basin of the Chacas lagoon - Juliaca.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Objective: Prevent, mitigate or remedy negative environmental impacts caused by anthropogenic activities in the lagoon and its Chacas area, starting from environmental monitoring as a mechanism for citizen participation with emphasis on water resources	Number of remediation / mitigation measures implemented.	Zero implemented measures.	4 prevention, mitigation or remediation measures implemented (solid waste, sewage); municipal resolutions.	Assessments according to baseline. In Situ verification.	Local and institutional stakeholders work in coordination and financing for the project is secured.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Outcome 1. Organizational structure strengthened through the creation of a water management committee for the Chacas micro- basin and renewal of the Community-based Environmental Surveillance and Monitoring Committee (CVMAC) in the schools.	A committee for water and land management established in the Chacas lagoon hydrographic unit.	Currently, there is no stakeholders' organization for water and territory management in the Chacas lagoon micro-basin.	A committee for water and land management created in the first quarter into the project.	Training records. Internal regulations/ bylaws of management committee.	Local stakeholders support organizational processes in the micro-basin.
Outcome 2. Strengthened local stakeholders with individual and collective capacities generate information and local knowledge for water and land management in the micro- basin of Chacas lagoon.	Annual increase in number of trained and certified environmental monitors. Diagnosis on water and land management in the micro-basin.	The annual average of environmental monitors trained and certified by SUMA MARKA is 30. Currently, there is no diagnosis of water and land management.	By the end of the project, it is expected to have: 60 students trained and certified by Suma Marka. Certification from by Global WaterWatch for monitors in charge of biomonitoring and total solids in suspension and discharge. Access to GWW information and reporting system on a monthly basis during the two years of project intervention. A diagnosis on water and land social management in the Chacas lagoon basin.	Certification issued by SUMA MARKA. Certification issued by GWW. Reports on monitoring data to the GWW system. Diagnostic document.	Appropriate training is provided according to the needs of stakeholders in terms techniques for community-based environmental surveillance and monitoring and for water and land management.
Outcome 3. Land management improved through water governance among local	A water and land management plan.	There are no plans for land management.	Upon completion of the Project, there is one water management plan for the basin and one implemented	Document of the micro-basin management plan.	Local and institutional stakeholders are committed to improving water management in Andean

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
stakeholders and institutions that respond to the main local needs and to a collective vision for the Chacas lagoon basin.			action.		territories.
Outcome 4. Operational capabilities of Suma Marka DNGO strengthened for the implementation, administration, systematization of processes and lessons learned regarding the pilot project; these will allow engaging various social stakeholders in the TDPS system to replicate the experience in the short and medium term.	Method for certification of monitors validated and method for formulation of plans validated.	Currently, there is no validation for any of the methods.	By the end of the project there is a guide for the certification of monitors and a guide on water and land management plans. A pre-feasibility study for project replication. Production and dissemination of audio-visual material.	Developed guides. Dissemination reports Staff participation in Suma Marka training for IWRM.	There is enough time to perform validation and development of methodological guidelines for certification of monitors and plans for social water management.

11-P-06. Measures to address unsustainable practices and promotion of sustainability of the Titicaca-Desaguadero-Poopó-Salar de Coipasa water system (TDPS), through the implementation of activities and management technologies and reduction of mercury use in areas dedicated to artisanal and small-scale gold mining aiming to a more integrated watershed management.

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
Objective: Implementing a pilot project that ensures the reduction of Hg in the extractive activity of gold through the implementation of new technologies.	Percentage of reduction of mercury per gram of extracted gold.	Current amount of Hg used (to be defined after the baseline study).	At the end of the project the use of mercury has been reduced in 10% or more.	Records on the project implementers.	Implemented technologies have not contributed to the reduction of mercury.
Outcome 1 Improved knowledge and capacity of men and women miners and mining organizations for better mining.	Number of cooperatives that have implemented cleaner production projects.	No cooperative has clean technologies in the area of implementation of the project.	By the end of the project at least 1 cooperative will have implemented technologies that ensure the reduction of	Records on quantities of gold extracted and mercury used.	Distrust of miners toward agencies and governmental entities (and affiliates) that attempt to support the adaptation of the ASM

	Indicator	Baseline	Targets at the end of the project	Source of verification	Risks and Assumptions
environmental, health, and social practices.			mercury in their processes.		sector and working conditions of miners. Level: high
Outcome 2: Training program for miners in the region implemented.	% of trained miners.	Not even one trained miner.	90% of the miners working in the cooperative that will implement the project have been trained by the end of the project.	Attendance lists for training sessions. Technical reports on the training process.	Risk: Lack of collaboration from miners. Risk: medium
Outcome 3: Greater capacity of regional and local governments to integrate international agreements and imperatives related to ASGM into plans or programs for sustainable development. Improved access to support services for all the stakeholders involved in the ASGM sector.	The Development Plan of the Regional Government of Puno incorporates guidelines established in international agreements on mercury use.	Currently, the Regional Development Plan of Puno does not incorporate guidelines in international agreements on mercury.	The Regional Development Plan of Puno, formulated after the implementation of the project includes guidelines of international agreements on mercury.	Regional development plan.	Risk: Lack of participation from the Regional Government in the implementation of the project. Risk: low
Outcome 4: Increased responsible artisanal gold trade in national and international gold markets.	Percentage of increase in the amount of gold sold direct to international refiners at greater value.	Amount of gold sold locally at a lower value (to be defined in the baseline study).	10% more revenue per unit of gold sold at the conclusion of the project.	Sales records of the cooperative that will participate in the project.	Lack of buyers.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Secretariat comments at PIF

<p>The PIF was not entirely clear, yet we understand that the Global Binational Master Plan (GPMP) containing 'vision, mission, objectives and main lines of action' as well as project profiles IS the equivalent of the SAP. This makes sense and it would not make sense to duplicate such effort. Please confirm before CEO endorsement. Further, if the GPMP is the SAP equivalent, then we would also need to have this endorsed at Ministerial level.</p>	<p>Addressed. During PPG it was confirmed with both governments that the Global Binational Master Plan (GPMP) is equivalent to the SAP. Both the TDA and the SAP will be formally approved by both governments. This is mentioned in the PRODOC.</p>
<p>Please assure that the updated GPMP assures and builds on inter-sectoral cooperation on national and regional level to address nexus of water-food environment (and energy) discussed in the PIF. Also, please assure that climate resilience is addressed given the vulnerability of the ecosystem to anticipated decreases in water flows.</p>	<p>Addressed. The SAP will be built through a highly participatory process to include views from local groups, water users and municipal, provincial and regional governments. Climate change and resilience have been incorporated into the processes of preparing the TDA and the SAP. This was an element that was not part of the existing GPMP.</p>
<p>TDA - we note that the "Environmental Outlook for For the TDPS-GEO Titicaca is relatively recent as well as some other key relevant national and regional environmental analysis and planning document mentioned in the PIF. Please assure that the TDA makes full use of these and essentially expands and builds on existing work/updates existing information/efforts. Again, lets please avoid duplication. It is not important to use the GEF terminology of TDA-SAP in each circumstance if quasi equivalents exist that can be updated and/or expanded (see e.g. PIF para 27 and 39).</p>	<p>Addressed. The government of Bolivia does not recognize GEO Titicaca as an official document. Nonetheless, the information it contains has been used for the preparation of the PRODOC and will be used during TDA preparation. The situation analysis (i.e., preparation of TDA) will use all information available, there will be a number of very specific studies to complement information and to address topics not addressed previously (e.g., climate change, endangered species conservation). See section "additional studies required for TDA development" in the PRODOC. GEF terminology has been introduced and will be used during project implementation.</p>
<p>It is appreciated that the PPG will commence with a mapping of ongoing relevant activities and partners to assure coordination (incl. those funded by bilaterals and MFIs). . Please attach a summary to the prodoc.</p>	<p>Addressed. A summary table is included in Annex 20 of the PRODOC.</p>
<p>Please outline in that how and by who and how sustainable fisheries management is addressed in Lake Titicaca. The PIF is not entirely clear on this and it is an important aspect.</p>	<p>Addressed. See paragraphs 70 to 76, 95, 100, and 114. Fisheries are not jointly managed. This matter has been included in the project, there will be baseline studies and it is foreseen to reach a binational agreement.</p>
<p>We note the mention of FPIC in project design. Yet, beyond due diligence: please explore opportunities for benefitting indigenous communities through at least one of the pilot measures.</p>	<p>Addressed. The following pilot project will work directly with indigenous groups: 01-B-01 and 02-B-02. Please see Annex 9.</p>
<p>Women - the PIF addresses at this stage women and their participation</p>	<p>Addressed. During PPG, key</p>

well. As artisanal mining is an issues in the region, please in project design pay attention to gender and age distribution of miners. Is mercury an issue (and hence may be among one of pilot measures building on previous successful GEF finance in other regions)?	stakeholders were mapped and the role of women and indigenous groups in the different production activities was analyzed. There is scant information on social structure in small scale mining mostly because it is unregulated or illegal. Two pilot projects in Peru will directly address pollution from small-scale gold mining (i.e., 06-P-01 and 11-P-06)
While the private sector is mentioned in the PIF as stakeholder and target group (e.g. mining operations), the private sector is absent in the stakeholder table (A.2)	Addressed. During PPG, key stakeholders were mapped. Private sector will be part of the participatory processes to build the TDA and the SAP.
Co-finance - please assure that the indicative/ approximate level of grant (vs. in-kind) co-finance remains realistic and can be shown at CEO endorsement.	Addressed. Co-finance was confirmed.

STAP Scientific and Technical screening of the PIF

1. STAP understands that this proposal is aimed at strengthening the existing bilateral agreement and action plan for the Titicaca watershed shared by Peru and Bolivia. In particular the PIF states that project intends to strengthen institutional capacity to improve the integrated transboundary management of their water resources in the TDPS system. However, the PIF does not clearly set out a strategic gap analysis regarding the present assumed deficiencies in the existing Global Binational Master Plan; therefore the overall needs and likely incremental global environmental benefits are not clearly outlined. For this and other reasons discussed below, STAP requests that minor revision be performed so that STAP's advice is reflected in the full project brief.	Addressed. During PPG, a rapid assessment of the level of implementation of Global Binational Master Plan was performed. Gaps were identified and a number of very specific studies were identified to complement information and to focus on topics not addressed previously.
2. Regarding the proposed intervention logic, STAP advises that a full TDA/SAP is unnecessary, given the advanced state of binational cooperation, substantive baseline information and existence of the Global Binational Master Plan. That being the case, STAP suggests that the project should, beyond bringing the Plan up to date and improving the capacity to deliver, invest more directly in replication of catchment management good practices and innovation towards shared benefit generation. UNEP already produced a substantive environmental review in 2011, called GEO Titicaca, which in itself can serve as a TDA.	The focus of the project is not just updating the master plan, but to contribute to build governance. The central element will be to foster highly participatory processes and multi-level dialogue to build the TDA and SAP. Involvement of local groups and governments (i.e., municipal, provincial, departmental) has been a major drawback in the past. Therefore, stakeholders seldom collaborate, and there is obvious distrust among key user groups. Updating the situation analysis (i.e., TDA) and the master plan (i.e., SAP) is the means to build social and human capital in support of IWRM and biodiversity conservation at TDPS system-level. The current situation of the TDPS is severe. The system has serious issues which threaten valuable biodiversity. To address these problems will require a major multi-level intervention. Therefore the project is aimed to be a catalyst to build social capital and a plan which

	will provide a system-wide perspective.
3. The PIF states that the project could "coordinate activities with the proposed GEF-UNDP project on integrated management, entitled "Integrated Water Resources Management in the Puyango-Tumbes, Catamayo-Chira and Zarumilla Transboundary Aquifers and River Basins", particularly on common problems related to the institutional framework in Peru, and on learning and sharing of experiences." STAP supports this statement while noting that the project referred to is now under implementation. STAP requested that that project, which addresses shared catchments of Ecuador and Peru, consider the economics of benefit generation and the strengthening of socio-economic understanding and community based management. That recommendation applies equally to the present project.	The recommendation has been acknowledged, the project will focus on building the social foundation in support of IWRM. There will be strong coordination with the Ecuador – Peru GEF project, in particular on addressing the impacts of small-scale gold mining.
4. From a regional governance perspective, longer term sustainability of the investment and considering the several cycles of GEF support STAP advises that the project develops an exit strategy for future GEF support taking into the account the functions of well-established Binational Autonomous Authority for the Water System of Lake Titicaca, Desaguadero River, Lake PoopÃ³ and Salar de Coipasa (ALT) and national action.	The project will concentrate on fostering the conditions to sustain improved governance of the TDPS. This will require participation, articulation and contribution from all the spectrum of stakeholders, from local water users to the Ministries of Foreign Affairs. A key approach will be to promote watershed councils, nested within a system-wide binational governance structure. This will allow to face the pressing local issues, while maintaining a system-wide perspective. However, the project will not directly address pressing issues like the discharge of untreated municipal and industrial wastewater or land degradation caused by erosion. It is foreseen that these investments will be made by user groups, local governments and sectoral authorities within the framework of the agreed upon SAP.
5. It is also advised that the project takes an innovative focus on green growth during the project preparation phase and explores how that could support an agenda of sustainable economic growth and poverty alleviation which is at the heart of the problem of managing the water resources in the basin.	Poverty is, certainly, a key factor in the TDPS. The project has emphasized that production activities must be sustainable. Some activities will be addressed, like fisheries, trout farming and small-scale gold mining. Also, it is planned to contribute to empower women and indigenous groups by ensuring their involvement into multi-level dialogue and construction of the TDA and SAP. However, the project will not directly address poverty alleviation which a complex matter well beyond the scope of the proposed intervention.

Comments submitted by Council Members

Germany approves the following PIFs in the work program, but asks that the following comments are taken into account: Germany supports the comments made by STAP. Given the long nature of the binational cooperation which started in 1992, sufficient baseline information should be available to update the Binational Master Plan of 1991. Germany agrees that a full TDA is not necessary.	Despite the decades of binational cooperation the management of shared resources need strengthening. Both countries have recognized that the current structure of ALT is insufficient for the current needs and challenges. There is an ongoing process to update ALT' structure.
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Germany is of the opinion that the project should not focus on updating the Master Plan, but on addressing the gaps and current insufficiencies while promoting and replicating good practices.

However, a key issue is that key stakeholders have not been involved in the governance process. Therefore, the project will contribute to build the social basis in support of IWRM in the TDPS. It is planned to have highly participatory processes to build the TDA and the SAP with the purpose to contribute to develop social capital, trusting relationships and multi-level dialogue among key stakeholders. Therefore building the TDA and SAP is the means to foster an improved governance of the binational watershed. To update the situation analysis specific studies have been selected, to cover topics that have not been properly addressed, like climate variability and change, and use of fishery resources.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS¹⁷

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: 150,000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Process of generation of consensus and validation	40,000.00		23,148.95
Technical review	78,400.00	51,381.80	27,634.02
Institutional Agreements and commitments, monitoring and evaluation	20,300.00	36,249.69	
Financial planning and cofinancing	5,000.00	1,086.27	
Consolidation of final document	6,300.00	10,499.27	
Total	150,000.00	99,217.03	50,782.97

¹⁷ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.