



**PROJECT IDENTIFICATION FORM (PIF)**  
**PROJECT TYPE: Full-sized Project**  
**TYPE OF TRUST FUND: GEF Trust Fund**

**PART I: PROJECT IDENTIFICATION**

Project Title:	<b>Sustainable land use management in the drylands of North-west Argentina</b>		
Country:	Argentina	GEF Project ID:	5044
GEF Agency:	UNDP	GEF Agency Project ID:	4841
Other Executing Partner:	Environment and Sustainable Development Secretariat (SAyDS)	Submission Date:	August 28, 2012
GEF Focal Area:	Land Degradation	Project Duration (Months):	60
Parent program	NA	Agency Fee (\$):	351,509

**A. FOCAL AREA STRATEGY FRAMEWORK:**

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
LD 1: Maintain or improve flow of agro-ecosystem services to sustaining the livelihoods of local communities	Outcome 1.2: Improved rangelands /livestock management.	1.2. Types of innovative SL/WM introduced at the field (10,000km <sup>2</sup> * / rangeland)	GEF	1,171,697	7,497,400
	Outcome 1.3 Sustained flow of services in agro-ecosystems	1.3 Suitable SL/WM interventions to increase vegetative cover in agro-ecosystems.(4,000 km <sup>2</sup> )	GEF	569,110	3,561,265
LD 3: Reduce pressures on natural resources from competing land uses in the wider landscape	Outcome 3.1: Cross- sectoral enabling environment for integrated landscape management (in support of SLM)	3.1 Integrated land management plans developed and implemented (over 14,000km <sup>2</sup> for local level planning; 140,000km <sup>2</sup> ; provincial level)	GEF	636,064	3,936,135
	Outcome 3.2: Integrated landscape management adopted by local communities.	3.2. INRM tools and methodologies developed & tested 3.4 Information on INRM (SLM) technology and good practices disseminated over dryland ecoregions (300km <sup>2</sup> )	GEF	970,835	3,748,700
Sub-total				3,347,706	18,743,500
Project Management Cost			GEF	167,385	986,500
<b>Total project Cost</b>				<b>3,515,091</b>	<b>19,730,000</b>

**B. PROJECT FRAMEWORK:**

<b>Project Objective:</b> Building a sustainable land management framework to alleviate land degradation; maintain ecosystem services and improve rural livelihoods in the drylands of northwest Argentina.						
Project Component	Grant type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
SLM practices instituted to avoid and reduce land degradation in environmental hotspots of 3 target arid ecoregion landscape	TA	Landscape level uptake of SLM measures avoids and reduces land degradation (LD) delivering ecosystem and development benefits over 14,000 km <sup>2</sup> of 3	<b>1.1 Local-level assessments and investment include SLM measures in high risk and LD hotspots of selected landscapes</b> <ul style="list-style-type: none"> <li>LD hotspots and vulnerability ranking based on LADA local-level assessments methods;</li> <li>Department-level planning of baseline investments in hotspot and risk areas incorporate SLM practices following the</li> </ul>	GEF	2,175,605	11,246,100

<p>covering 14,000km<sup>2</sup></p>		<p>dryland ecosystems as follows:</p> <ul style="list-style-type: none"> <li>• Puna = 4,500 km<sup>2</sup></li> <li>• Dry valley scrub = 7,500 km<sup>2</sup> ;</li> <li>• Plains and plateaus scrub 2,800 km<sup>2</sup></li> </ul> <p>These benefits include the following:</p> <ul style="list-style-type: none"> <li>• reduced water deficiency</li> <li>• reduced soil erosion</li> <li>• increased productivity (increased net primary production in pastures areas)</li> <li>• increase in livelihood assets measured with the sustainable livelihood (IFAD) adapted to local conditions)</li> <li>• % family incomes from SLM practices</li> <li>• increased flow of resources to SLM (eg revolving funds).</li> </ul> <p>(targets for each will be established PPG phase):</p>	<p>LD mitigation hierarchy: avoid, reduce, off-set;</p> <ul style="list-style-type: none"> <li>• Management plans in selected landscapes identify appropriate SLM practices for LD avoidance and reduction in community lands;</li> <li>• Local regulations incorporate SLM criteria and protocols for priority areas;</li> </ul> <p><b>1.2 Multi-sectoral and stakeholder committees</b> facilitate dialogue on SLM and coordination of production sectors programmes and policies at landscape levels and provide guidance and oversight to SLM practices in baseline investment land-use implementation. This will count with information and feedback from the decision making system to be set up in component 2.</p> <p><b>1.3 SLM practices implemented across high risk and LD hotspots in dryland landscapes</b></p> <ul style="list-style-type: none"> <li>• Livestock and rangeland management practices that maintain pasture and vegetation cover (e.g. through fencing; camellid rearing; building sheds for livestock protection; planting permanent pasture)</li> <li>• Soil management and conservation practices (windbreaks; terraces; gully control) and crop management practices ( tillage and rotation) applied to reduce erosion &amp; increasing fertility;</li> <li>• Water management practices applied for efficient use of water; run off and rain; water harvesting; drip irrigation; small dams.</li> </ul> <p><b>1.4 Financial resources allocation for small-holders supports the continued application of SLM in targeted landscapes</b></p> <ul style="list-style-type: none"> <li>• Valuation of costs/ benefits of different SLM practices and production systems;</li> <li>• Brokerage of public and private resources for microcredit and revolving funds;</li> <li>• Guidance and resource distribution criteria for allocations.</li> </ul>			
<p>2. Enabling framework for provinces to plan, monitor and adapt land management and lever national and provincial baseline investments for SLM at the dryland ecoregional level</p>	<p>TA</p>	<ul style="list-style-type: none"> <li>• Strengthened SLM capacities increase the avoidance, reduction and rehabilitation of land degradation over the long term for 3 drylands (300,000 km<sup>2</sup>). Indicated by: Increase in institutional capacity of provincial governments for SLM and INRM (baseline and targets to be</li> </ul>	<p><b>2.1. GIS based LD/SLM monitoring and evaluation system improves SLM in drylands across 8 Provinces</b>, through:</p> <ul style="list-style-type: none"> <li>• Provincial GIS based monitoring and evaluation nodes linked to national level and integrating multiple datasets from environment, population, agriculture, climate information, hazard maps to aid landscape modelling and planning, monitoring of impacts on SLM, INRM and associated GEB and DB through community and government actions at different scales.</li> <li>• Protocols for M&amp;E of SLM practices in each ecosystem (3) types;</li> </ul> <p><b>2.2. Provincial governments (8) institutions apply SLM practice</b> through:</p> <ul style="list-style-type: none"> <li>• Provincial Action Plans Combating Land Degradation (PAPs) for <u>at least</u> 3 provinces</li> </ul>	<p>GEF</p>	<p>1,172,101</p>	<p>7,497,400</p>

		<p>determined in PPG phase using amongst others the LD-PMAT scorecard)</p> <ul style="list-style-type: none"> <li>Strengthened policy framework for SLM in at least 75% of the provinces</li> <li>Strengthened policy framework for SLM at national level by strengthening the General Law of Environment</li> <li>At least 20% of farm households in hotspots and high risk areas of 75 % NW dryland provinces, replicate best-practice SLM and IEM practices from targeted landscapes of component 1.</li> </ul>	<p>covering 140,000km<sup>2</sup></p> <ul style="list-style-type: none"> <li>Manuals tailoring SLM practices for the drylands ecosystems to each province's realities;</li> <li>Protocols agreed for implementing ecosystem specific SLM practices in each Province including roles and responsibilities of the different institutions, sectors and programmes and methods for evaluation and monitoring;</li> <li>Multi-tier training programmes for provincial and local level staff on SLM and INRM including methods; monitoring; evaluation; best practices for policy development; impact of climate change, etc;</li> <li>Information exchange programmes and knowledge management on best practices for SLM demonstrated in target landscapes;</li> <li>Norms developed for provincial decision makers to strengthen provincial regulatory framework regarding criteria; protocols and</li> <li>Partnership building between provincial institutions (planning; environment; agriculture; development) and private sector for PAP &amp; LD control units;</li> </ul> <p><b>2.3. SLM practices mainstreamed nationally in dryland sectoral programmes:</b></p> <ul style="list-style-type: none"> <li>Promotion, dissemination and communication of desertification control and its links to national and provincial sectoral policies;</li> <li>Guidelines for integrating SLM into national; sectoral and development planning and budgeting process.</li> </ul>			
			Subtotal		3,347,706	18,743,500
			Project Management Cost		167,385	986,500
			<b>Total project Costs</b>		<b>3,515,091</b>	<b>19,730,000</b>

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

Sources of Co-financing for baseline project	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Environment and Sustainable Development Secretariat (SAyDS – Native Forest Law and Soils Office)	Grant	4,260,000
National Government	SAyDS	In kind	140,000
National Government	Ministry of Agriculture and Livestock MAGyP (PROSAP; PRODERNOA; Ley Capina)	Grant	9,900,000
National Government	Science and Technology Regional Centres (CONICET)	Grant	1,038,000
National Government	Science and Technology Regional Centres (CONICET)	In Kind	692,000
Local Government	Jujuy, Salta, Tucumán, Catamarca, San Juan, La Rioja, Mendoza, San Luis	Grant	1,920,000
Local Government	Provinces as above	In-kind	1,280,000
GEF Agency	UNDP	Grant	500,000
<b>Total Co-financing</b>			<b>19,730,000</b>

### D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY

GEF Agency	Trust Fund	Focal area	Country name/Global	Grant amount (a)	Agency Fee (b)	Total c=a+b
UNDP	GEF TF	LD	Argentina	3,515,091	351,509	3,866,600

<b>Total GEF Resources</b>	3,515,091	351,509	3,866,600
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## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### **A.1. THE GEF FOCAL AREA STRATEGIES:**

1. The project will promote the sustainable management of land in the arid and semi-arid and dry sub-humid ecosystems of the northwest of Argentina to address increasing loss of ecosystem functions and services in an area characterised by high land degradation and poverty levels. It will promote the incorporation of sustainable land management (SLM) into baseline investments to improve rural livelihoods by facilitating a shift from a more *ad hoc* sector specific approach to one of integrated natural resource management that implements SLM practices following LD mitigation hierarchy: avoid; reduce and offset. It will define the appropriate mix of SLM practices through on the ground investment in targeted landscapes in at least three provinces of the dryland ecoregions and set-up multi-sector platforms to facilitate coordination between competing environmental, social and economic objectives in these landscapes. In doing so, it will reduce conflicting land-uses and improve the sustainability of land management so as to maintain the flow of agro-ecosystem services to sustain the livelihoods of local communities. In parallel it will strengthen provincial and national capacities and governance frameworks for replication of SLM at ecoregion scale. This will include incorporating SLM approaches and integrated natural resources management (INRM) into provincial land-use plans to ensure that adverse environmental impacts are as far as possible avoided. Further it will develop an effective and comprehensive decision-support system for planning, monitoring and evaluation of SLM at the provincial and national levels providing critical information to influence SLM investment and increase efficiencies. The project thus will address the GEF land degradation focal area objective LD 1: "Maintain or improve flow of agro-ecosystem services to sustaining the livelihoods of local communities" and LD 3 "Reduce pressures on natural resources from competing land uses in the wider landscape".

#### **A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS:**

2. Seventy-five (75%) of Argentina's continental territory is arid, semiarid or dry sub-humid. These areas collectively referred hereafter as drylands-house 30% of the population and generate some 30% of Argentina's agriculture and livestock production GDP. They also concentrate all Argentina's goats and camelid stock, 80% of its sheep and 40% cattle. As a result Argentina has placed high importance on the implementation of the UNCCD goals (ratified in 1996 through law 24.701). The National Action Programme to Combat Desertification and Mitigating the Effects of Drought (PAN), approved in 2003 (Resolution SAyDS 250/02), was developed through an extensive and highly participatory process. The PAN and the subsequent creation of the National Advisory Committee of the PAN (CAN), provides the regulatory basis for the implementation of the UNCCD in the country along with the National Environmental Policy of 2002 (Act 25675). The PAN places strong emphasis on decentralization. This is in part due to the country's vast size and diverse natural characteristics but also because responsibilities and mandates over natural resources lie with the provinces. It specifically calls for the development of inter-provincial; regional, local or provincial programmes and action plans to enhance local ownership of PAN objectives and as the central pivot of its implementation. By focusing on land degradation hotspots at local levels, building capacities of rural farmers to adopt SLM practices and developing provincial governance frameworks to replicate this to scale, the project is thus fully in line with PAN priorities and those of the UNCCD that call for the implementation of SLM strategies locally.

3. In addition the project will provide tools, information and processes that are critical for implementation of five of the six strategic lines of the PAN: i) addressing the causes of land degradation; ii) building regional capacity for SLM; iii) building institutional and financial frameworks; iv) up-scaling SLM best practices across multiple use landscapes; and (v) creating awareness on desertification in a wide variety of stakeholders. Furthermore the project addresses a region that played a central role in the development of the PAN and has been identified as a priority for intervention in a number of programmes and strategies (see baseline). It will also address the principal components of the National Development Plan: poverty alleviation; sustainable production and environmental sustainability and development priorities as it will remove barriers that currently impede SLM practices so as to enhance resilience and stability of ecosystems and reverse the land degradation processes that are causing loss of soil fertility and increased vulnerability of local populations to the effects of poverty and drought. In doing so it also complies with priorities in regard to Argentina's climate change adaptation strategies as it will combat land degradation processes that are likely to increase natural disasters in predicted future climate change scenarios.

## B. PROJECT OVERVIEW

### B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

#### Context

4. Argentina is the second largest country in South America and the eighth in the world with 2.7 million km<sup>2</sup> of mainland covers a vast latitudinal range. In consequence it has a great variety of landscapes and climates making it one of the most environmentally diverse countries in Latin America. It has 18 recognized eco-regions ranging from tropical forests to temperate pasturelands and forests, and mountain ecosystems. Many have been identified as areas of global importance and also provide key ecosystem services to Argentina's productive sectors, notably agriculture and livestock which play a dominant role in the national economy. The country is one of the world's major agricultural producers, ranking among the top producers in most of the following: beef, citrus fruit, grapes, honey, maize, sorghum, soybeans, squash, sunflower seeds, wheat, and yerba mate. Agriculture accounted for 9% of GDP in 2010, and, including processed goods, provided 54% of export earnings. Largely due to this sector, the economy rebounded from the 2009 recession, and had one of the region's fastest growth rates in 2010. Poverty levels lowered in the second half of 2010<sup>1</sup>, nonetheless currently between 4.2 and 9.7% of households in each Province still live below the poverty line which nationally represents ~2.5 million people (~10%).

5. The positive contribution of the agriculture and livestock sectors to the economy has not been without a toll on the environment and land degradation. More than two-thirds of Argentina's original 100 million hectares of forested lands had been lost or degraded within a span of less than 80 years since 1915 (First National Inventory of Native Forests), mostly attributable to the expansion of agricultural frontier (crop and livestock production). Furthermore as the economy diversifies and lands-use conflicts increase, there is a growing recognition of the need to strengthen sustainable land use management (SLM) in agro-ecosystems and improve the cross-sectoral enabling environment for integrated natural resources management at scale to avoid and reduce land degradation.

6. The Office of Soil Conservation is the National Focal Point for the PAN and is key to instigating SLM practices. It is part of the Under-Secretariat for Environmental Planning and Policies of the Environment and Sustainable Development Secretariat (SAyDS). As provinces have jurisdiction over their natural resources, their governments also have a key role in environmental and SLM governance. In addition to the Provinces, geopolitically the country is organized into 6 "regions". These are groups of Provinces that for geographical or historic reasons have similar characteristics or affinities. The regions are important as decisions on national level poverty alleviation and sector programme investments are often made based on this regionalization even though resources are channeled through Provinces. Of relevance to this project are the Northwestern and the Cuyo regions encompassing 8 Provinces<sup>2</sup> and 17% of Argentina's area. Within these regions the drylands targeted in this project cover some 302 million km<sup>2</sup> (41% of the provinces and 5% of the country). These geopolitical regions have some of the highest indices of poverty nationally with the NW having 6.8% of households below the poverty line. The population of these regions is highly dispersed with a density of ~ 9/habitants per km<sup>2</sup> (lower than the national average of 14.4) and totals 6.9 million of which 1.3m (19%) live in the drylands. The rural population of these Provinces is on average 3.7%, collectively totaling approximately 350,000 and includes some of the poorest in the region with livelihoods largely subsistence farming and sheep, goat and livestock rearing.

#### Land degradation in Argentina

7. Argentina is the country with the largest area of dry, semi arid and sub dry-humid ecosystems in Latin America. These drylands cover 75% of the national territory. This includes dry forests, scrub, grasslands, high altitude deserts and Andean wetlands know as bofedales. The agro-ecological classification used nationally distinguishes 5 dryland regions: the Puna region; Chaco; Dry Valleys; Centre-west and the Patagonian region. All the Puna region and large areas of the Dry Valleys fall within the geopolitical regions of the Northwest and Cuyo. In addition to this classification there are the 18 recognized ecoregions that include the Puna and the inter-andean dry valleys known as the *montes and bolsones*. Parts of an associated dryland ecoregion, the scrub of the plains and plateaus, known as *monte de llanuras y mesetas*, is also found in these geopolitical regions. The northern tip of this ecoregions, in the foothills below the dry valley, forms part of the drylands targeted in this proposal.

8. The Puna ecoregion covers 2.5% of the national territory and in Argentina is entirely contained to the Cuyo and NW regions. It forms part of the Central Andean montane grasslands and shrublands biome, found above the

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<sup>1</sup> National Statistics Agency, September 2011

<sup>2</sup> **Noroeste:** Catamarca, Tucumán, Jujuy, La Rioja, Salta; **Cuyo:** Mendoza, San Juan, San Luis

tree line (~3,200m) and below the permanent snow line. Argentina's Puna represents the most southern limit of this ecoregion and is characterized mainly by dry puna with low rainfall of less than 300mm/yr, a 8mth long dry season and average temperatures range from 8 to 11°C with lows of -3°C. The dry puna is a unique ecoregion with highly adapted flora and fauna. It is characterized by shrubs and bushes such as thola (*Paraestrepia* sp.), the perennial yareta cushion plant (*Azorella yareta*) and with tough gramineous pasture clumps in bofedales and grasses (e.g. *Pennisetum chilensis*) in sheltered slopes. Trees are very scarce, and include queñoa (*Polylepis tomentella*) and churqui (*Prosopis ferox*).

9. The inter-andean dry valleys ecoregion covers 4% of the country and is found in the mid-elevation areas (1,200 to 3,500m.a.s.l) of the Cuyo and NW regions. These steep-sided warm dry valleys are marked by a rain shadow effect of the surrounding mountains. Rainfall is limited, and mostly falls in a brief rainy season. The vegetation is characterized by scrubland with 1.5 to 2.5m shrubs such as jarilla and creosote bushes (*Larrea divaricata* and *L. cuneifolia*) on sandy and sand areas of the valleys and *Prosopis* "carob" trees in more humid areas. Xeric scrub with smaller thornier-scrubs with seasonal foliage and a range of cacti (eg *Tephrocactus aoracanthus* and *Tephrocactus articulatus*), heath and broom (*Bulnesia*) characterise the slopes. In the valley floors much of the land is devoted to agriculture. The scrubland ecoregion of the plains and plateaus covers 12.4% of the country with altitudes ranging between 0 and 1000m. The temperate climate is arid with annual rainfall between 100 and 200 mm and means annual temperatures of 10°-14°C. The northern tip of this ecoregion, and some 20% of its overall area, lies in the foothills of Cuyo region in NW Mendoza transitioning to the dry valley scrubland at higher altitudes. These drylands are also dominated jarillal or creosote bush steppe and the carob but without the presence of cati.

10. The different forms of land degradation in drylands in Argentina, and their causes, were evaluated in the LADA<sup>3</sup> project first classifying land according to land-use categories and then applying the LADA/WOCAT methodology to 55% of the national territory. This indicated that 45% of the national territory has some level of degradation and deterioration of physical and chemical properties of the soil that generate important negative environmental impacts that go beyond production. Furthermore land degradation processes are increasing at an estimated 650million hectares/year (PAN). Four different categories of land degradation are recognized: extreme; strong; moderate and light. A fifth refers to areas in which no data was available. The ecoregions targeted by this project suffer particularly high levels of land degradation with 48% of the plains scrubland under moderate to strong degradation; 62% of the dry valley scrubland and 75% of the Puna 75% (see Table1).

**Table 1: Land degradation Intensity in Targeted Ecoregions**

Ecoregions	% Area with Different Degree of Land degradation *				
	No data	Light	Moderate	Strong	Extreme
Puna	10%	15%	47%	28%	0%
Dry valley scrubland	6%	23%	33%	29%	8%
Plains scrubland	1%	51%	33%	15%	0%
Average	4%	22%	29%	19%	3%

\**Light*: There is some indication of degradation but the process is still in an initial stage and can be easily halted and the damage can be repaired with a minor effort; *Moderate*: degradation is obvious but control and complete rehabilitation is still possible with considerable effort; *Strong*: clear signs of degradation. The changes in the land properties are significant and very difficult to restore in a reasonable timeframe; *Extreme*: degradation is beyond restoration.

11. The causes of land degradation, the impact and the loss of ecosystem goods and services vary across the country. In the drylands targeted in this project livestock farming ranks high amongst the direct causes of land degradation. Originally mainly sheep this is now combined with goats and to a lesser extent, cattle. The increasing animal loads combined with the limited pasture has generated overgrazing causing loss of native species; soil compacting as well as increased soil erosion with high rates of material (e.g. in excess of 150 tons /ha/year in the Puna), and reductions in wetlands and associated ecosystems. In turn this affects the ecosystem's production and regulation functions. Another cause of degradation is the collection of firewood by local people dependent on this resource for fuel in a region where poverty levels are high. This, coupled with the scarcity of native forests has led to high rates of deforestation making already fragile soils more exposed to wind and water erosion.

12. Loss of natural vegetation cover has been exacerbated more recently by the expanding agricultural frontier. This often involves fire for clearing which under the dry and windy natural conditions often get out of control.

<sup>3</sup> The Land Degradation Assessment in Drylands (LADA) project (2003-2011) determined the trends in land use systems over 10 years, the extent of the degraded area, the degree and rate of LD as well as direct and indirect causes. It also identified the impacts of each type of LD and SLM on Ecosystem Services (SE) and made recommendations for the different dry lands across the country.

Agriculture is often associated with crops that require irrigation in these dry areas. Expanding irrigation across the ecoregions, particularly in the fertile valleys, is causing further water deficiencies in a region where water deficits are already high (~1000-1500mm). In many cases this is also increasing salinization and alkanisation of the soil. In some areas extractive industries such as mining may impact the quality and quantity of natural resources. In addition natural phenomena such as high wind and rain distribution patterns are accentuating these processes and the region is increasingly suffering natural disasters including land-slides and sandstorms. Although these are generic across the 3 ecoregions their relative importance differs between each and is summarized below:

**Table 2: Land degradation drivers and impacts in the targeted dryland ecosystems**

Land Degradation Causes (following LADA)		Importance/Ecoregions*			Impacts
		Puna	Dry valley	Plains Scrub	
General	Biodiversity loss	4	3	2	Loss of goods (fibre, food fuel) and provisioning ecosystem services
	Alkanisation; salinization	4	3	2	Increasing desertification (38-40% of the areas under cultivation <sup>4</sup> ); reduction of wetlands due to fast capillary rise; soil and water degradation; loss of fertility.
	Human Pressure	4	3.5	2.5	Increased pressure on water resources increasing water deficits
	Animal Pressure	4	2.5	2	Increased pressure on natural pasture leading to overgrazing
	Water Erosion	4	3	3	Increased soil erosion, gully's and canyons; loss of water regulation function
	Eolic Erosion	4	3	3.5	Increased soil erosion; reducing productivity & water regulation
Specific	Fire	4	2	1.5	Loss of ecosystem goods; changing soil compositions.
	Agriculture expansion	4	4	2.5	Loss of vegetation; increased water demand for irrigation; water and soil contamination from fertilisers
	Overgrazing	4	3	2.75	Alterations in plant composition and productivity of natural pasture; increasing exposure and erosion of soil
	Irrigation	4	4	2.5	Increased salinisation; increase water deficits; high indices' of inefficiency soil-water-plant management (36% efficiency)
	Mining (rocks; lime; gold; oil)	4	1	2.3	Increased soil alkalization and salinization; decreases quality and quantity of water groundwater contamination.
Emerging	Climate Change	4	3	2	Increase in extreme events ; increased water and soil erosion and loss of fertility

\*Puna includes arid and semi arid areas but excludes the hyper-arid areas

13. The increasing and high levels of land degradation in the NW and Cuyo regions is leading to a reduction in the biological and economic productivity of land and significant changes in ecosystem functions (see above Table 2). This is causing increasing migration to the cities and suburban areas disrupting the social structure of communities. It is also leading to increasing competition for land and conflicting land uses. The uptake of new production models and generation of trade surpluses and profit in the more fertile areas has also led to a high degree of exclusion of small farmers, peasants and indigenous people in the local workforce. Collectively this is leading to increasing acculturation and abandonment of ancestral ways of cultivation. This is particularly evident in the high Puna regions.

#### Baseline

14. The NW of Argentina as a geographical area has been prioritized in a number of baseline investments programmes that support and strengthen agriculture and livestock practices to increase production and increase income. These baseline programmes offer the opportunity to lever investments to address land degradation in the arid ecoregions of this geographical area. They are funded by the national government according to a generic framework that defines overall objectives and provides guidelines for eligible actions. However given the fact that in Argentina Provinces have jurisdiction over natural resources and land use, the execution of these programmes and the specific details of their spending are defined by the Provinces.

15. The main baseline programmes that will fund investments in the 8 provinces that house the 3 ecoregions are PROSAP; PRODERNOA; the Goat Law; and the Forest law. They constitute existing and planned investments that will be leveraged by the proposed GEF investment as they will directly support activities related to enhancing agriculture and livestock production and these are the main drivers of land degradation in the targeted arid ecosystems. Collectively these programmes will channel an estimated 443.4million over project to enhance production practices in the 3 targeted arid ecoregions. Each has a specific focus as follows: (i) the Goat Law targets the recovery and development of goat rearing providing resources for stock-enhancement and infrastructure to modernize production systems so as to reduce the animals per unit area. It provides an opportunity to reduce overgrazing and hence land degradation but is designed from a purely sectoral standpoint and does not take into account other potential land-uses nor does it have tailored practices for areas where land degradation requires

<sup>4</sup> Ministry of Environment, LADA FAO, 2005; IADIZA, 2010

differentiated practices and animal loads; (ii) the Forest Law provides resources monetary compensations to landowners for conservation of forests of high and medium conservation value as established by the provincial land zoning plans but SLM practices appropriate for these areas in the target arid ecoregions are not yet defined; (iii) Rural Development Project in the Provinces of Northwest Argentina (PRODERNOA) supports diversification of production in rural farmers below the poverty line improving farm productivity, agribusiness and other rural non-agricultural economic activities. Funds are delivered through projects but guidelines for these do not include SLM practices; and (iv) the Agricultural Services Programme (PROSAP) focusing on improving rural infrastructure of small and medium farmers and small and medium agribusinesses specifically in the plain scrub ecoregion.

16. Currently agreements from PROSAP; PRODERNOA; Goat and Forest Law have been signed between the Federal Government and the 8 Provinces for US\$284.98 million and will be spent over the next 2-3 years. Of this US\$65.74million will target provinces that house the dry valleys ecoregion; US\$189.32m those in the plains and plateau scrub and US\$29.92 million in the Puna ecoregion. A further US\$151.7 is planned for the remaining time of the project but it is not yet clear of the division between ecoregions. Of the current and planned investments the greatest part will be directly channeled to on-the-ground investment to support livestock and agricultural practices to increase production and thus constitutes baseline resources that can potentially be oriented to optimize the implementation of SLM practices to address land degradation reduction at specific locations building on the demonstration in Component 1. A smaller percentage will be used at the provincial level for institutional strengthening, planning and monitoring and this provides a baseline on which to build Provincial and Federal capacities to plan and monitor baseline programs contributions to addressing land degradation through Component 2. Also baseline investments of US\$3.4 million for SLM planning and monitoring (component 2) will be provided at the Federal level for SLM planning and monitoring relevant to these arid ecoregions. This includes 1.4million through the PAN National Focal Point Office for SLM activities and technical knowledge vital for the project. It also includes US\$ 2million to set up a National Observatory to generate information at different scales for sound decision making on combating desertification and drought and monitoring SLM practices but does not cover all dryland ecosystems nor provide for harmonizing existing data sets (table 3 para. 19 for more details).

#### Long term solution and barriers to its achievement

17. Despite the considerable efforts and baseline resources that the GoA is expending on improving agricultural and livestock practices and rural livelihoods in the NW these fall short of their potential as they do not take into account the degree of land degradation and different process that are already high in these ecoregions. Without the GEF investment these baseline investments will address the livestock and agricultural practices from a standalone and highly sectoral approach without considering cumulative effects across the landscape or conflicting land-uses that are causing growing competition for land; increasing conflicts for resources (particularly water); and increasing land degradation and loss of ecosystem functions in the targeted arid ecoregions. The result is that in the baseline the already high levels of land degradation will increase with ensuing loss of ecosystem goods and services (see table 2). Nonetheless the baseline investments provide an opportunity to generate global benefits alongside development benefits if they are reconfigured to incorporate land degradation and multiple-use approaches. GEF resources and co-funding resources will be used to influence this trajectory and optimize the baseline investment.

18. The long term solution is thus to build a framework for changing the trajectory of the baseline approaches in order to facilitate a shift from more *ad hoc* sector specific management approaches to integrated natural resource management and sustainable land management suitable for the drylands of the NW- notably the arid, semi arid and semi dry humid ecosystems of the Puna; inter-andean drylands and associated transition to the scrub land of the plains in the foothills. This framework would count with a suite of SLM practices adjusted to each ecosystem that contemplate the range of prevention, mitigation, restoration and rehabilitation practices needed to halt land degradation at landscape level and with institutions with the capacities to replicate these at ecosystem level. This long term solution is impeded by two main barriers: (i) Few ground-tested approaches to apply SLM practices to scale in the context of integrated ecosystem management and (ii) Weak systemic and institutional capacities for planning, implementing and overseeing SLM practices at national and provincial levels.

#### Barrier 1: Few ground-tested approaches to apply SLM practices to scale in the context of IEM.

Although the LADA tested a number of specific SLM practices and pre-identified the most suitable for the different dryland regions in Argentina these were not implemented beyond pilot areas nor were they evaluated in the context and pressures of multiple land uses in larger landscapes because of the following constraints:

- *Weak understanding and knowledge of location of environmental hotspots of high LD and vulnerability at department and municipal which is needed to guide baseline investments.* Under the ambit of the forest law provinces are developing land use zones (see below in barrier 2) but these are in function of the forest's conservation value and do not address land degradation issues nor identify "hotspots" areas where land degradation processes are critical or ecosystem functions at risk.

Environmental zoning is now starting but criteria for this at local levels have not been established and baseline funding commitments by departments and municipalities are not related to LD needs/ levels in their territories.

- *Guidance on the balance between different SLM practices for the NW drylands and synergies with other lands uses* is missing which is a constraint to effectively channelling baseline interventions throughout the larger landscape. This is also the case in communities where land tenure is collective but each household employs production practices without due consideration of potential conflicts or pressures on natural resources including water.

- *Unilateral approach each sector* to delivering its investments increases competition for natural resources across larger landscapes. For example the Prosap irrigation and drainage improvements do not take into account other water needs such as urban and industrial or the needs dryland ecosystem downstream from irrigated areas. At the national level an inter-sector commission was set up to identify measures for combating desertification and land degradation, defining an action plan and coordinating its implementation. However this was not mirrored at the provincial and department level and sectoral coordination rarely integrates an ecosystem approach or SLM needs.

- *Financial constraints* present a further barrier to up-scaling SLM levels across landscapes at the level required to successfully arrest land degradation and combat desertification. Although a number of micro-credit programmes exist in Argentina most require land tenure documentation or proof of annual income rates and credit history not available to the small farmers in this poor region. Provinces, departments and municipalities have a voice in where to channel baseline programme resources for supporting agriculture and livestock but this often focuses on production for export and technical for increased efficiencies without weighting their negative impacts on land degradation processes. In part this is because there is a dearth of information on long-term costs of land degradation both in terms of loss in income and reduced ecosystem goods and services. Although the LADA identified links between SLM practices and ecosystem functions a systematic approach to valuation was not undertaken. In the absence of this it is hard to make the business case for SLM.

#### Barrier 2. Weak systemic and institutional capacities for controlling land degradation and upscaling SLM

- *Weak SLM and LD Monitoring*: The LADA project evaluated land degradation in 55% of the country and a number of SLM practices identified for different dryland regions. Some of these practices are being implementing in different areas of the country. In addition in some districts LD monitoring is starting. In parallel there is extensive information on climate; agriculture and growing monitoring of environmental parameters. However these data are dispersed and data sets isolated, impeding policy decisions and efficient investments.

- *Weak land use planning*. The Native Forests Act sets minimum standards for the conservation and sustainable use and management of native forests and their ecosystem services. The law establishes a temporary moratorium of land clearing activities until Provinces elaborate land zoning plans and are approved by the SAyDS. Zoning divides Provinces into strict conservation areas; those that require management plans to be approved prior to land use and those in which land use is unregulated. But these zones have been defined strictly from a forest conservation stand point without considering the potential increase in conflicting land uses as unrestricted areas become smaller and competition for resources increases-particularly water. Furthermore although Provincial land-use planning under this Law has advanced, each province is using different parameters with the result that woodland and scrubs of the same value in ecoregions shared by different Provinces can be classified under different land use zones: This impedes harmonised conservation approaches across shared areas such as water basins needed to address LD at scale. As the project seeks to develop provincial strategies for SLM agencies for addressing LD in shared ecoregion a set of minimal standardised approaches and procedures is essential to optimise the baseline investments in rural development and to facilitate decisions not only within each province but from an ecosystem level.

- *Institutional weaknesses*: Effective decision making on, and implementation of, SLM is also constrained by a series of institutional weaknesses that include staff deficiencies; equipments and investments shortfalls and knowhow. The distribution of institutional responsibilities for land degradation at the provincial level varies. In some Provinces it falls under the environment (eg Catamarca under the Secretariat for Water and Environment in Catamarca) resulting in a disconnect with the policies and decisions on investments that are defined by the production sectors. In other provinces it falls under the production sectors eg.under the Ministry for Production Development in Tucuman. This means that approaches are rarely harmonized across provinces that share ecoregions. Furthermore enforcement of SLM is weak and depends on different sectors. For example there are irrigation committees that set irrigation quotas and inspectors but these are rarely enough to effectively monitor water use and even if infringements are identified the fines are low and rarely paid. There is a clear need for building systemic and institutional capacities and mainstreaming SLM across production sectors if the high levels of land degradation are to be effectively addressed. This includes working at the federal level so that the generic frameworks for current and future baseline programmes can include LD and SLM issues.

## **B. 2. INCREMENTAL COST REASONING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS:**

19. Under the baseline scenario livestock and agricultural production in drylands of the NW of Argentina will increase in the short term but practices will be supported that may not be appropriate for fragile drylands with different types and degrees of land degradation. Furthermore the baseline programmes will be executed at farm level and sector stand points without considering practices occurring in nearby areas or across the landscape. Under this baseline scenario over the medium to long term as land use conflict increases, these practices will led to continued loss of ecosystem services exacerbating land degradation still further and undermining the long term sustainability of production. The objective of the Project is to build a sustainable land management framework for

the drylands in the NW Argentina to alleviate land degradation; maintain ecosystems services and improve rural livelihoods and through this framework influence a shift in the baseline programmes. To optimize leverage of the baseline programmes to address land degradation at the scale needed to generate global benefits, different scales of intervention are needed. This is because of the extremely large area of the drylands of the 3 arid and semi arid ecosystems in the NW (300,000km<sup>2</sup>) and the country's political administration system wherein Provinces have jurisdiction over natural resources and land use but receive significant resources from the nation for supporting production. The project will thus work at 3 different levels: *at local levels* to demonstrate ensure that the separate programmes are well coordinated across landscapes and incorporate the appropriate of SLM practices for each land degradation type and degree and follow the avoidance, reduction and mitigation hierarchy; *at the provincial level* to ensure that the sound and coordinated decision making processes and systems to replicate the local level demonstrations and guide baseline investments to SLM in environmental hotspots at provincial level and the entire ecosystem ; *at the federal level* to influence the generic structure of the baseline programmes and provide overall policy and technical guidance.

20. Under the alternative scenario GEF resources and co-funding will be used in an incremental and highly strategic manner to influence the trajectory of the considerable baseline thereby leveraging global benefits over 3 arid ecoregions in the NW of Argentina. It will build different SLM practices into the baseline investments in targeted landscapes covering 14,000km to identify the appropriate mix of SLM practices and protocols to the avoid, reduce and off set LD at landscape level to secure the long term provision of ecosystem services. It will also build the structures and finance to ensure the continued implementation of SLM across these targeted landscapes post project. To upscale the SLM over all the drylands in the 3 ecosystems (300,000km<sup>2</sup>) the project through component 2 will strengthen provincial and national capacities for monitoring, implementing and evaluating LD and SLM; build institutional capacities across the 8 provinces for land use planning to incorporate SLM mitigation hierarchy approaches and influence and reconfigure baseline programmes to support this hierarchy. Over the long-term this will upscale SLM across three dryland ecoregions protecting vital ecosystem functions and delivering sustainable development benefits to the rural poor (see table 4 for global benefits and direct and indirect benefits and scales). Table 3 summarizes the baseline practices and the proposed changes of alternative scenario.

**Table 3. Summary of baseline investments and proposed increment in 3 arid ecoregions**

Current Practice	Production practices proposed by baseline programs	Project Alternatives (examples)
<p><b>Puna</b> -Subsistence level, extensive livestock rearing (sheep; goats and some cattle) with little or no management leading to overgrazing (&gt;200,000 heads).</p>	<p><b>Goat Law:</b> stock-enhancement and support to associated business. No guidelines for animal load in different types and levels of land degradation; no assessment of impact at landscape level and with other land uses. <b>PRODERNOA/PRODEAR:</b> supports rural farmers below the poverty line improving farm productivity; diversifying production, agribusiness and other rural non-agricultural economic activities. Procedures guiding investments do not include SLM practices. <b>PROSAP:</b> basic infrastructure and modernizing irrigation. No assessment of effect on water deficiencies and erosion on drylands at landscape level.</p>	<p><b>Livestock Management:</b> Fencing, camelid rearing, sheds for livestock protection and provision of best animal loads in relation to LD risk and vulnerabilities ; <b>Range Management:</b> Planting permanent pastures; grazing management guidelines on natural grassland and alternative land use in areas of high LD risk <b>Soil and water management:</b> dune stabilisation; gully control in high LD risk areas for reduction of existing LD levels.</p>
<p><b>Dry valley scrub</b> -Low technical level water use for irrigation in water deficient area. -Extensive livestock rearing (400,000 heads), with 5,000 goats reared in very small production units on common lands. -Deforestation of scrubs and trees for agriculture expansion</p>	<p><b>Forest law:</b> land use planning at provincial level to categorize forest into conservation value. Support to silvo-pastoral production in forest of medium conservation value; and conservation of forest of high conservation values. Planning uses different criteria in each of 8 provinces that house the 3 arid ecosystem. It does not consider LD risks and land use categories do not include SLM practices or follow LD hierarchy to avoid; reduce off-set. <b>Goat Law:</b> As described for Puna and including milk production and its derivatives. In addition development of business associations and commercial /industrial processes. <b>PROSAP:</b> modernising irrigation systems; land tenure regularization; cattle livestock enhancement; agricultural infrastructure and commercial development. No assessment at landscape level of water deficiencies or INRM planning</p>	<p><b>Soil and water management:</b> Improving irrigation water use; efficient use of water runoff; water harvesting on house roofs; small dam construction for water management to reduce deficiencies; terracing to reduce erosion <b>Soil fertility measures</b> Biogas and compost production <b>Crop Management:</b> crop rotation &amp; diversification, tillage; <b>Diversification and value added measures;</b> pepper-drying practices; sorgum management for brooms</p>
<p><b>Plains/ plateaus scrub</b> -Deforestation of scrubs and trees for agriculture expansion. -Expansion of agriculture irrigation -Livestock rearing with little or no management</p>	<p><b>Forest law:</b> As in dry valley scrub. In addition improvement of farm buildings and re-vegetation of dunes. <b>Goat Law</b> as in dry valley scrub. <b>PROSAP</b> improvement of irrigation systems and drainage; rural roads and rural electricity supplies; commercial development. Gaps as above: no consideration of LD risk of production intensification through electrification and rural infrastructure development and weak coordination with potential cumulative effects at landscape</p>	<p><b>Soil and water management</b> fixation of dunes; gully control, terraces following LD assessment and hierarchy of interventions. <b>Livestock Management:</b> Fencing, sheds for livestock protection in high risk areas <b>Range Management:</b> Planting permanent pastures; grazing management on natural grassland tailored to LD assessments</p>

leading to overgrazing by goats and some cattle	level and with other land uses.	<u>Soil and water management</u> : windbreaks
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21. **Component 1: Implementing SLM practices at local level in target dryland landscapes.** At the local level (municipalities and departments) through this component the project will work within 3 landscapes covering 14,000km<sup>2</sup>. These will be selected from different Provinces. The Provinces will be selected based on the degree of institutional support; information availability and baseline programming. In each of the selected Provinces the project will support the identification and vulnerability ranking of LD hotspots based on LADA methodology applied at provincial and district levels. Within these hotspots at least 3 landscapes will be identified in which SLM practices will be implemented at scales that address the entire range of LD management options (mitigation, prevention, restoration and rehabilitation) so as to determine costs and trade-offs and thus appropriate mixes for each type of landscape. The selection process will ensure that different degrees of land degradation and vulnerability are included in targeted landscapes and that these are sufficiently large and representative to provide objective comparisons and conclusions that can be replicated across the ecosystem.

22. The SLM practices and would instigate practices such as i) *Soil and water management* including windbreaks; small dams; efficient use of water run-off; water harvesting; terraces; gully control; fixation of dunes improving irrigation of water use; (ii) *Livestock management*: including fencing; camellid rearing sheds for livestock protection; (iii) Range management planting permanent pastures; (iv) *Crop management*: including crop rotations; tillage; quinoa planting value added measures eg drying of peppers; (v) *Soil fertility management*: including biogas and compost production; afforestation and reforestation. Where applicable prior to the implementation of the SLM practices the project would support the development of land-use and management plans for community lands to guide appropriate SLM practices across collective lands avoiding conflict of use between small landholders.

23. In these same landscapes multiple local level stakeholder committees will be set up for providing a forum to discuss identification of high risk areas; negotiation of SLM practices and sites for GEF support; and provide inputs to implementation and oversight as a practical approach to increasing local stakeholder know how of INRM. These committees will also provide a vehicle for up-scaling from site level to landscape. Furthermore in the long term it is envisaged that these will form the basis for coordinating production sectors programmes and policies at landscape levels. Also at the local level the project would work to increase the financial resources allocation for small-holders to support the continued application of SLM in priority areas. To build the business case for increasing resources flows valuation will be undertaken of costs/ benefits of different production systems and SLM practices within selected landscapes and their benefits to ecosystem functioning and to livelihoods. The project would use this to build the business case for SLM investment and work with selected local governments to broker public and private resources for microcredit and revolving funds. This could include additional resources to existing microcredit ventures or promoting new schemes by advancing the guidance on management and development of land degradation revolving funds developed under the PAP. It will also include increasing the channelling of existing credit funds to SLM needs, amongst others by providing capacity for communities to apply for credit for SLM supplies and tools needed by small producers; and assuring that SLM practices such as community water harvesting are eligible for credit.

24. **Component 2: Enabling framework to plan, monitor and adapt land management at ecoregion level.** To upscale the landscape work to ecoregion level and to aid mainstreaming, the second component would work across all 8 provinces that house the targeted drylands ecoregion. As a foundation for decision making and for mainstreaming SLM into ongoing programmes the project will developed a GIS based LD/SLM that would aid landscape modelling and planning, monitoring of impacts on SLM, INRM and associated global environmental and development benefits through community and government actions at different scales. This will build on the baseline national LD observatory expanding this to include provincial GIS based monitoring and evaluation nodes linked to the national level and integrating multiple datasets from environment, population, agriculture, climate information, hazard maps. The project will set up protocols for monitoring and evaluation of SLM practices in each ecoregion (3) and link this to the GIS System. In parallel the project will strengthen provincial governments (8) institutions for applying SLM practice through developing manuals tailoring SLM practices for arid ecosystems to each province's realities; developing protocols for implementing ecosystem specific SLM practices in each Province including the definition of roles and responsibilities of different institutions, sectors and programmes.

25. A multi-tier training programme will be implemented for provincial and local level staff on SLM and INRM complemented by information exchange programmes and knowledge management on best practices for SLM demonstrated in target landscapes. The training will include monitoring, evaluation, best practices for policy development; impact of climate change, etc. This will facilitate the incorporation of SLM in rural development

programmes. The project will also include support for provinces to develop action plans for combating land degradation (PAPs) in the 3 provinces that house the targeted landscape in component 1 for facilitating upscale in the medium term across those territories (est.140,000km<sup>2</sup>). The project will provide training to other Provinces for PAP development and work to lever additional funding so that PAP development can be undertaken in the remaining 5 Provinces in the final stages of the project. Across all 8 Provinces it will also develop norms for provincial decision makers to strengthen provincial regulatory frameworks regulations for incorporating SLM measures in on-going rural production programmes and into provincial land-use plans currently being developed thereby supporting replication in the longer-term. To further enhance mainstreaming SLM practices in national and provincial sectoral programmes the project will support dissemination and communication of LD and desertification control and its links to national and provincial sectoral policies; and work to integrate SLM into national; sectoral and development planning and budgeting process.

**26. Global environmental benefits** The project addresses current inappropriate land and soil practices in drylands that constitute the Puna, dry inter-andean valleys and associated scrubland on the plain and plateau of the foothills in Argentina’s NW and Cuyo regions. On the ground interventions and landscape level uptake of these SLM practices will deliver direct ES and DB benefits over 14,000 km<sup>2</sup> in 3 dryland ecosystems: Puna 4,500km<sup>2</sup>; Dry valley scrub, 7,500 km<sup>2</sup>; Plains and plateaus scrub 2,800 km<sup>2</sup> as described in the table below. In addition support to land use planning and to institutional strengthening at the Provincial level will facilitate replica of SLM over 300,000 km<sup>2</sup> of drylands decreasing overgrazing pressure and improving pastures; reducing water deficiencies and soil erosion, and conserving well-functioning ecosystem services (such as water supply; forage productivity over Puna = 87,000 km<sup>2</sup>, Dry valley scrub = 83,000 km<sup>2</sup> ; Plains and plateaus scrub 130,000 km<sup>2</sup>).

**Table 4: Type and scale of expected global benefits from project alternative over short to long term**

Current Practice (baseline)	Project Alternatives	Global benefits (see B5 for monitoring)
<b>I. Short term direct benefits through on the ground intervention in 3 target landscape s (component 1)</b>		
<b>1.1 Puna:</b>		
Subsistence level, extensive livestock rearing (sheep; goats and some cattle) with little or no management leading to overgrazing (>200,000 heads). Baseline investments provide support for improved production but do not fully incorporate SLM practises of address landscape level impacts (see Table 2)	1. SLM practices applied to farms and community lands in a selected Puna landscape (see table 2 for details) 2. Local level assessment of LD identifies hotspots for focusing on the ground intervention; 3. Multi-stakeholder committees set up to plan and oversee application of SLM practices; and provides forum for discussion over conflicting land uses and input to INRM planning (in component 2) 4. Financial resources levered for small-holders support to continue application of SLM in targeted landscapes post project	Demonstrated improved land management preventing degradation over <b>4,500km<sup>2</sup> of Puna</b> provides the following global benefits: ✓ reduced soil erosion (target is to reduce the area of high to levels of moderate soil erosion and that of moderate to low (see table in para 10) ✓ Increased productivity (increased net primary production in pastures) ✓ Increased protection against water and erosion ✓ Increased conservation of native grasses and endemic biodiversity (eg. Thola )
<b>1.2 Dry valley scrub</b>		
-Low technical level water use for irrigation in water deficient area. Extensive livestock rearing (400,000 heads), with 5,000 goats reared in very small production units on common lands. -Deforestation of scrubs and trees for agriculture expansion. <i>Baseline as above</i> (see Table 2)	1. SLM practices applied to farms and community lands in environmental hotspots of a selected dry valley landscape ( see table 2 for details) 2. -4 as above	Demonstrated improved land management preventing degradation over <b>7,500km<sup>2</sup> of dry valley scrub</b> provides the following global benefits: ✓ Reduced water deficiency by improving management as well as access to this resource and the consideration of water-use at landscape levels ✓ Reduced soil alkalisation & salinization from the level of high to moderate (see Table 2) ✓ Increased productivity through increased soil fertility; reduced erosion and water deficit
<b>1.3 Plains and plateaus scrub</b>		
-Deforestation of scrubs and trees for agriculture expansion. -Expansion of agriculture irrigation -Livestock rearing with little or no management leading to overgrazing by goats and some cattle <i>Baseline as above</i> (see Table 2)	1. SLM practices applied to farms and community lands in environmental hotspots of a plains and plateaus scrub landscape see table 2 for details)  <u>2-4 as above</u>	Demonstrated improved land management preventing degradation over <b>2,800km<sup>2</sup> of arid plain and plateaus scrub</b> provides the following global benefits: ✓ Increased vegetation cover leading to BD benefits principally at the level of micro flora and fauna in the short term and species composition and diversity in the long term ✓ Reduced soil erosion targeting a change from moderate to light - see table 2

		✓ Increased productivity measure by (increased net primary production in pastures)
<b>2. Medium to Long-term perspective (beyond project life) For all three arid ecoregions (component 2)</b>		
<p><b>2.1 Land Use Planning &amp; Regulation:</b> -Little systematic integration of land use planning at provincial level across production sectors and with the environment sector causes conflict of land uses and/or cumulative negative impacts of baseline investments at landscape level.</p> <p>- National PAN calls for the development of inter-provincial; regional, local or provincial programmes and action plans to enhance local ownership of PAN objectives and as the central pivot of its implementation but as yet no Provincial Plans developed</p> <p><b>1.2 Institutional Capacity</b> - weak institutional capacities for planning, monitoring and evaluating SLM practices and different institutional set ups governing natural resources in the 8 provinces that house the arid ecoregion leads to pressures from competing resource use; further reduces potential of baseline investment to address LD at scales needed.</p>	<p><i>LD/SLM monitoring and evaluation system strengthened to improve SLM in drylands at ecoregional level (8 Provinces and at national level);</i></p> <p><i>Provincial Action Plans Combating Land Degradation (PAPs) in at least 3 provinces</i></p> <p><i>Provincial SLM regulatory framework strengthened on criteria; protocols and manuals tailoring SLM practices for the drylands ecosystems to each province's realities;</i></p> <p><i>Multi-tier training programmes on SLM and INRM including information exchange programmes and knowledge management on best practices for SLM demonstrated in target landscapes;</i></p> <p><i>Partnership building between provincial departments (planning; environment; agriculture; development) and the private sector for developing PAP &amp; LD control units (building on experiences of multi stakeholder committees) in component 1)</i></p> <p><i>Mainstreaming LD into dryland sectoral programmes at national level</i></p>	<p>Improved integration of Provincial and department level land use planning and PAPs to upscale; monitoring and enforcement will upscale demonstration SLM from component 1 to entire Province delivering global benefits (see below) in <u>the medium term</u> to <b>Puna = 25,000 km<sup>2</sup>, Dry valley scrub = 40,000 km<sup>2</sup> ; Plains and plateaus scrub 75,000 km<sup>2</sup></b></p> <p>Institutional strengthening for SLM and integration of LD into baseline investments in 8 Provinces reduces competitive pressures between land uses in Puna; dry valleys and arid plateaus and plains scrub ecoregions; increases contribution of existing baseline investment for livestock and agriculture to reducing LD following the mitigation hierarchy of avoidance; reduction and off-set in LD hotspots.</p> <p>Over <u>the long term</u> this will decrease overgrazing grazing pressure and improved pastures of arid ecoregions; reduce water deficiencies and soil erosion and conserve well-functioning ecosystem services (such as water supply; forage productivity over the following areas:</p> <p><b>Puna = 87,000 km<sup>2</sup>, Dry valley scrub = 83,000 km<sup>2</sup> ; Plains and plateaus scrub 130,000 km<sup>2</sup></b></p>

### B.3. SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT INCLUDING GENDER DIMENSIONS:

27. The project will provide benefits to policy-makers as well as local rural land users increasing capacities and knowhow for SLM to combat high levels of land degradation currently leading to losses in productivity and emigration from rural areas. During the project direct benefits will be provided in at least 3 targeted landscapes to an estimated 22,000 rural farmers that are currently on or below the poverty level. These farmers will be supported to implement baseline investment for production practices incorporating in an incremental manner SLM practices that are suitable for the type and degree of land degradation on their farms and for their location in the larger landscape (see table 3). By increasing and improving crop, rangeland and livestock management that incorporate SLM practices and supporting the INRM at the landscape level, productivity will increase. This transfers to income generating benefits for those farmers in targeted landscape and global benefits in terms of reduced LD from the employment of SLM practices. Furthermore the landscape level approach will increase sustainability over the long term as the SLM mix will not only increase production but conserve ES vital for production (see table 4 above). Further socio-economic benefits will be incurred by providing more stable incomes reducing economic vulnerability by diversification and by sustainable production. In addition through institutionalising SLM and by mainstreaming into baseline production programmes at least 20% of farming households in all the drylands provinces will also incur indirect domestic benefits and global benefits in the long-term over larger areas (see table 4 above). Reducing land degradation processes also will deliver benefits and reduce vulnerability to changes in the climate that are expected to increase extreme events that can trigger natural disasters in degraded land. By developing land plans for community land agreed upon by the villagers and building multi-stakeholder and sector platforms, local actors will be empowered and further optimization of the baseline programmes to appropriate land use will be achieved. Active participation of women in training and human resource development and in family goat farming will permit the progressive inclusion of women in socio-economic organizations and local decision-making from current low levels of <5%.

28. These benefits will provide social sustainability to project impacts. Institutional and financial sustainability considerations have been integrated into the project design. Mainstreaming SLM into baseline regulatory programmes that provide permanent sources of funds to rural farmers will enable the continued use of SLM and it further up-scaling post project. Additional resources will be brokered and existing funds channelled more efficiently to high LD areas. The multi-tiered training programme and the development of standards, roles and responsibilities will provide institutional sustainability.

### B.4. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS AND MEASURES THAT ADDRESS THESE RISKS:

Risks	Ranking	Proposed Mitigation Measures
Political changes at	Low/	The project will work with provincial governments to increase their understanding and

the different levels (national, provincial, municipalities) and changes in personnel, may delay project implementation	Medium	awareness of the effects of SLM on production and ecosystem services thus on the livelihoods and well-being of their populations Thus it addresses an issue central to development goals and one likely to withstand changes in Government. Nonetheless a Steering Committee at the political level will be set up including the Ministries of Environment and Production of each of the provinces. This will strengthen project decision-making and ensure relevance and consistency with provincial priorities. Also project activities will be undertaken within public organizational structures and will be anchored in cooperation agreements to increase continuity. In addition care will be taken in the PPG phase to detail implementation arrangements and so as to ensure administrative efficiencies and expedited project execution.
Due to the difference in time scales between the political cycle and the ecosystem recovery cycle partners may not prioritize SLM policies.	Medium	The project will develop valuation of SLM practices and their impacts on ecosystem functions; production and livelihoods. This will include evaluation of the different approaches to LD (prevention, mitigation; restoration and rehabilitation). It will support information exchange between stakeholders that have experienced the effects of extreme LD and also the benefits of SLM practice (community and governmental levels). This will increase the public interest in making investments for returns over a longer time scale. Direct benefits in institutional strengthening will be delivered that will operate through multi-institutional and multi-sectoral structures with a clear set of interests within a well defined organizational and support framework to continue SLM over time. In addition special attention will be given to the participation of municipalities, which are directly exposed to local public opinion.
The number of players and difficult decisions needed for up-scaling SLM may delay field application of the measures proposed by the project.	Medium	In terms of the project life project coordination mechanisms will include participatory decision-making and seeks to facilitate consensus, early detection of potential sources of conflict and promote constructive dialogue. In the long term the project will set up multi-stakeholder committees to improve sector coordination and consensus on SLM at landscape levels. The GIS based data will provide access to information and increased clarity on trade-off of different land uses facilitating decision making. The project will also include standardizing roles and procedures for SLM oversight in provinces and training and awareness on SLM practices and their benefits again facilitating consensus reaching between the diverse stakeholders.
Local communities are not sufficiently encouraged by direct benefits and thus reluctant to adopt behavioral changes needed to achieve goals in the long-term	Low	The areas of intervention for SLM up-scaling and activities will be identified through participatory workshops to ensure a high level of involvement of local communities. The project will also operate through key community stakeholders thus raising the level of readiness for cooperation of the entire local community (farmers and their families, teachers, local opinion formers, etc.). Also see mitigation measures proposed above that are relevant to this risk.
Changing weather conditions may affect adaptation measures implemented during the project implementation.	Low/medium	The targeted drylands are high altitude fragile environments where current harsh climatic condition is exacerbating human caused land degradation. These drylands are already experiencing increased extreme climatic events projected to increase still further. The SLM practices to be up-scaled will take into account current and future climate. Also strengthening of the National LD Observatory will enable monitoring changes in climate variability and conditions of the targeted ecoregions and the proposal of adjustments as needed.

## B.5. STAKEHOLDERS INVOLVED IN THE PROJECT

29. The Secretariat of the Environment and Sustainable Development (SAyDS) as the national focal point for UNCCD will undertake the role of primary Executing Agency following the accounting and administrative procedures of UNDP-GEF for the disbursement of funds and the follow-up of objectives and outcomes as agreed in the work plan. It will be responsible for coordinating the activities that will ensure achievement of the planned Outcomes; certifying expenses according to the budget and work plan; facilitating monitoring and evaluation, with an emphasis on the Outcomes. Implementation of project activities will be undertaken at the Provinces level in targeted areas through letters of agreement between SAyDS and relevant provincial institutions (environmental and production institutions where possible and relevant). Activities may be executed directly and or through agreements and contracts with NGO; technical institutes or consultants as needed. A project coordination unit would be set up with focal points at the provincial level and landscape level (for component 1) and provide the guidance for Terms of Reference of consultants, calls for bids, contractors and subcontractors; and reporting to UNDP-GEF on the project's results and impact. A Project Consultative Committee will be set up with representatives of production sectors at provincial and federal level; academia; private sector and NGOs. In the targeted landscape under Component 1, multi-stakeholder committees will be set up and will provide additional

oversight and coordination functions at that level. Representatives from the 3 committees will be invited to participate in project consultative committee meetings. The PPG will further detail implementing arrangements.

STAKEHOLDER	RELEVANT ROLES
Secretariat of the Environment and Sustainable Development (SAyDS)	SAyDS is charged with the development and implementation of environmental policy at the national level. It coordinates the national government's policies that have an impact on the environment, and establishes the national government's strategic environmental policies and programmes aiming at social, economic and ecological sustainability through regional strategies. SAyDS through its Office for Soil Conservation will undertake the role of primary Executing Agency (see above). It is the National Focal Point for the PAN and is key to instigating SLM practices and developing policies and norms for SLM and desertification. It will provide oversight and technical knowhow to Provincial governments for component 1. Under component 2 it will liaise with technical institutions for the development of the SLM M&E system as part of the National Observatory. This will guide monitoring of global benefits using a selection including Local level Evaluation Manual (LADA- FAO 2009 adapted for Argentina); Field Observation Monitoring Guide (Universidad de Buenos Aires); Vegetation Index (SAVI: modified); Monitoring Manual for Arid and semi arid Zones INTA It will also support the SLM mainstreaming work under Component 2 at the national level.
Provincial Gov. Jujuy, Salta, Catamarca, San Luis Mendoza, Tucumán San Juan,; La Rioja,	The respective institutions that have mandates in SLM will play an active role in the project and will be responsible for overseeing project interventions in their territories including both local level on the ground intervention under Component 1 and the development of Provincial norms and regulations under component 2. They will also be responsible for ensuring the channelling of co-financing to these and will form part of the CCP and work to reconfigure baseline investments in their territories following the LD hierarchies. These institutions include planning; environment and productions sectors.
Ministry of Agriculture and Livestock (MAGyP)	As one of the key baseline programmes (PRODERNOA/PRODERI, Goat law and, PROSAP). and the provider of cofunding at the provincial level the MAGyP will for part of the Project Consultative Committee (CCP). Through its technical institutions INTA (Instituto de Tecnología Agropecuaria (INTA) it will provide direct technical support to framers and thus will be one of the targets of institutional strengthening and mainstreaming activities under component 2.
National Advisory Committee (CAN)	The CAN will play a key role in the monitoring and qualitative evaluation of processes and results and in optimizing resource management. It will be instrumental in developing inter-institutional links different levels and segments of society (political technical, production and civil society).A representative will form part of the Project Consultative Committee
Federal Environmental Council (CONFEMA)	The COFEMA is an institutional forum at federal level consisting of representatives of provincial environmental authorities convened to address environment-related problems throughout Argentina. It is organized on geopolitical representation. The COFEMA representatives of Cuyo and NW will for part of the Project Consultative Committee. Lesson learnt and information exchange with other regions will be undertaken in the broader COFEMA forum meetings.
Local government	These will be instrumental acting as conduits for promoting effective land management approaches across the targeted hotspots and the larger landscape; channelling resources to high risk areas and facilitating the coordination of sectoral investments in their territories.
Science and Technology Regional Centres (CONICET)	The national land degradation observatory, chaired by the SAyDS, gathers information on land degradation levels; tendencies and risks so as to develop appropriate prevention, control and mitigation measures and to guide decision-making. It members include CONICET HQ. The project will expand the Observatory to these dryland ecoregions. CONICET's regional centres will be crucial in the provision of new data and in assisting and setting up provincial observatory nodes.
Local communities (men and women)	As the ultimate beneficiaries of this project, the local communities of dryland rural areas of eight provinces will be strongly involved in local planning and SLM implementation and they will also provide feedback on draft policies of national relevance.
Community Based Organizations	Key CSOs include: NGOs, Cooperatives and Farmers Associations. They will be involved in activities under Component 1- SLM practices and multi-sectoral platforms. They will also be important for facilitating replication of SLM practices in a wide array of differing landscapes through their broad membership and networks.
UNDP	As GEF Implementation Agency for this project UNDP will provide the oversight functions required for this role. At the regional level support will be provided by a Regional Technical Advisor in the UNDP LAC Regional Service Centre (Panama). The local UNDP-GEF office will be in charge of the project's technical and financial management, in close collaboration and consultation with the Executing Agency (to be outlined in the full Project Document). As indicated below UNDP Argentina is uniquely positioned to support the project as it has worked with land degradation policies in Argentina and has implemented projects related to SLM.

## B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

30. The project builds on the important lessons drawn from the GEF's earlier investment "LADA". It will apply to landscape level scale the SLM practices that were identified for the drylands of North-west of Argentina and

build the enabling framework for its replication over time to ecoregion level. Furthermore, it will seek to include lessons from other relevant on-going GEF projects in the country. The regional GEF/UNEP/UNDP Project for the “Sustainable Forest Management of the Gran Chaco” seeks to address land degradation in this biodiversity rich forest ecoregion. Recently started, this project will work to strengthen institutional capacities for SFM and SLM in 4 Argentina Provinces and in Bolivia and Paraguay<sup>5</sup>. Although this targets a different biome and does not include any of the drylands Provinces institutional strengthening strategies and different approaches to developing standardised SLM protocols could provide lessons for the drylands institutional strengthening component. A second GEF /UNDP project of relevance, now nearing completion, addresses land degradation in the Patagonia steppe (Sustainable management of land in arid and semiarid agricultural ecosystems of Patagonia). This Project focuses principally on optimising the application of the Sheep law that provides funds for improving pastures but also involves elements of coordination of approaches across provinces. Whilst the sheep law is not a focus of the drylands project proposed herein one of the baseline projects is the Goat law and working with this to introduce SLM concerns. Also the strategies used in Patagonia for setting up early warning systems, and information data banks to support decision making are of importance to this project. Lessons learnt on these issues will be further reviewed during the PPG phase to optimise their inputs to project design.

31. A third Project is the GEF/UNDP/UNEP project “Establishment of incentives for the conservation of ecosystem services of global significance”. Although this focuses specifically on PES mechanisms and in drylands ecoregions or provinces, it will provide some information on best approaches for valuation of ecosystems services and the affect of different land uses on these (including soil conservation approaches in the Province of entre Rios). These approaches and the trade-off models between land use practices and ecosystems services that are to be developed could provide inputs to the drylands project. All three projects are led by SAyDS. To facilitate coordination and information exchange the SAyDS will hold periodic workshops and will share annual work plans to maximise efficiencies.

#### **C. DESCRIBE THE GEF AGENCY’S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

##### **C.1. INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:**

32. UNDP has brokered US\$ 16million in co-financing and in addition it will be providing US\$ 500,000 through its project supporting rural development in poor areas of the NW of Argentina.

##### **C.2. HOW DOES THE PROJECT FIT INTO THE GEF AGENCY’S PROGRAM AND STAFF CAPACITY IN THE COUNTRY**

33. The project seeks to strengthen provincial level governance systems for SLM reducing adverse environmental impacts of present land uses practices and providing sustainable livelihoods for communities in a poverty stricken area where land degradation processes are already high and ecosystem services and functions are under increasing threat. In doing so, the project will contribute directly to one of the four cooperation priorities defined for the 2010-2014 UNDAF. This is “to promote sustainable production that includes sustainable use of natural resources and conservation of the environment”. It will directly contribute to UNDP programme #1.3 under this cooperation priority – namely the implementation of strategies and policies for the management, use and sustainable use of natural and environmental resources. The project will provide outputs directly related to this programme, e.g. 1.3.1. Policies and strategies designed and implemented for the management and conservation of lands, forests, water resources and biodiversity at the national, provincial, and local levels; and 1.3.3 Initiatives and policies to address environmental challenges with critical socio-economic impact, such as climate change and desertification. By promoting the development of provincial plans of action to fight desertification and by working across 8 provinces in the NW and Cuyo regions to develop a harmonized approach to SLM, the project will also directly contribute to the UNDAFs cross cutting theme of regional strengthening.

34. UNDP is uniquely positioned to support the project as it has worked with land degradation policies in Argentina and has implemented projects related to SLM. UNDP has an extensive portfolio of SLM projects in Latin America and globally many of which focus on establishing SLM governance at local levels in arid lands and is thus in a good position to ensure inter-project learning. UNDP Argentina enjoys strong relationships with diverse institutional actors at all levels in both the public and private sectors. UNDP has a fully staffed Country Office consisting of 3 professional staff in the environment unit alongside a further 3 staff in the poverty and democratic governance units that can provide inputs in their areas of expertise as needed.

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<sup>5</sup> Santiago del Estero, Formosa, Chaco y Córdoba.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT AND GEF AGENCY**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT ON BEHALF OF THE GOVERNMENT: (Please attach the [Operational Focal Point endorsement letter](#) with this template).**

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Graciela Conesa	Operational Focal Point	Environment and Sustainable Development Secretariat (SAyDS)	July 31, 2012

**B. GEF AGENCY CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	Date (MM/DD/YYYY)	Project Contact Person	Telephone	Email Address
Yannick Glemarec, UNDP/GEF Executive Coordinator		08/28/2012	Helen Negret, EBD Senior Technical Advisor	+507 302-4508	<a href="mailto:helen.negret@undp.org">helen.negret@undp.org</a>