PROJECT IDENTIFICATION FORM (PIF)
PROJECT TYPE: Full-size Project
TYPE OF TRUST FUND: GEF trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	**Sustainable Land Management in the Qaroun Watershed**		
Country(ies):	Lebanon	GEF Project ID:	5229
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4642
Other Executing Partner(s):	Lebanese Ministry of the Environment; Ministry of Agriculture	Submission Date: Resubmission Date:	21 Dec 2012 08 Jan 2013
GEF Focal Area (s):	Land Degradation	Project Duration(Months)	48 months
Name of parent program (if applicable): ▪ For SFM/REDD+ [ ]	N/A	Agency Fee ($):	302,829

A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives*	Expected FA Outcomes	Expected FA Outputs	Indicative Financing from the GEF	Indicative Cofinancing ($)
LD 1: Maintain or improve flow of agro-ecosystem services to sustaining the livelihoods of local communities	Outcome 1.2: Improved agricultural management Outcome 1.3: Sustained flow of services in agro-ecosystems	Output 2: Types of innovative SL/WM introduced at the field (50,000 ha) Output 3: Suitable SL/WM interventions to increase vegetative cover in agro-ecosystems.(20,000 ha)	1,056,547	4,785,714
LD-2: Generate sustainable flows of forest ecosystem services in drylands, including sustaining livelihoods of forest dependent people	Outcome 2.3: Sustained flow of services in forest ecosystems in drylands	Output 2: Suitable SFM interventions to increase/maintain natural forest cover over 10,500 ha of dryland forests	1,073,158	6,245,125
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) Outcome 3.2: Integrated landscape management practice adopted by local communities Outcome 3.3: Increased investments in integrated landscape management	Output 1: Integrated land management plans developed and implemented Output 2: INRM tools and methodologies developed and tested Output 4: Appropriate actions to diversify the financial resource base	906,172	3,540,590
Sub-total			3,035,877	14,571,429
Project management cost			151,794	728,571
Total project costs			3,187,671	15,300,000

B. PROJECT FRAMEWORK

Project Objective: Sustainable land and natural resource management alleviates land degradation, maintains ecosystem services and improve livelihoods in the Qaroun Watershed Area[1]

Project Component	Type	Expected Outcomes	Expected Outputs	Indicative Financing from GEF	Indicative Cofinancing ($)
Enabling framework for districts to plan, monitor and	TA	*Pressures on natural resources from competing land uses in the Qaroun Watershed covering 157,000 hectares are reduced*	• Integrated Land Use Management Plans (ILUMPs) developed for four districts ensuring optimal allocation of land to generate development benefits and critical environmental benefits in tandem.	1,001,082	4,740,500

[1] By definition, a "watershed area", also referred to as "catchment area" or "drainage basin", is an area surrounded by a continuous ridge within which all runoff is expected to join in a single river" (Wilson, W.E. & Moore, J.F. 1998. *Glossary of Hydrology*. American Geological institute, Virginia, USA.

adapt land management and leverage national and district baseline investments for SLM		*through an integrated natural resource management (INRM[2]) framework, evidenced by:* Regular application of the LD-PMAT (Land Degradation Focal Area - Portfolio Monitoring and Assessment Tool) *Institutional capacities emplaced for promoting sustainable forest and land management in the Qaroun Watershed through INRM across the landscape, evidenced in the UNDP-GEF Capacity Development Scorecard [focused on institutional collaboration]*	o Strategic Environmental Assessment (SEA)[3], including climate change considerations, conducted for Qaroun Watershed to document causes of land degradation and provides recommendations for avoiding and mitigating impacts. o Spatially-based digital decision-making system for INRM made available for use in policy development, cross-sectoral landscape planning & management; containing inventory and classification of all types of lands in QW, information on the location of critical habitats, thresholds for the use of natural resources (e.g. land, freshwater, forests), ecosystem resilience carbon stocks and the impacts of climate change. o Multi-sectoral stakeholder committees facilitate dialogue on SLM and coordination of production sectors programmes and policies at the Qaroun Watershed level and provide guidance and oversight to SLM practices in baseline investment • Reduction in land management crimes associated with illegal conversion of natural habitat, illegal application of agricultural chemicals, and non-compliance with land use permits through (a) clearer definition and description of land management crimes; (b) improved ability of relevant institutions and their personnel to recognise the crimes; (c) improved capacity within institutions to recognise and prosecute land management crimes, (d) improved capacity across institutions to work collaboratively to identify crimes and apprehend and prosecute offenders, through the creation and strengthening of cross institutional coordination mechanisms that enable the sharing of information between institutions, systems to support tracking of crimes. *[This will be supported in part through the development of relevant print and digital materials, the detailed design of which will be elucidated in the PPG phase]* • Secure additional finances for SLM investments and align existing financial contributions in the forestry, agricultural and rangeland sectors to support SLM practices o Valuation of costs/benefits of different SLM practices and production systems—as a basis for brokering new public finance for SLM; o Brokerage of public finance resources for SLM funding; o Re-alignment of existing financial streams; o Guidance and resource distribution criteria for allocations- to improve the efficacy of SLM investments (reduce overlap and redundancy)		
Reducing the Effects of Land Degradation on Ecosystem Services through Sustainable	INV	*Landscape level uptake of SLM measures avoids and reduces land degradation (LD) delivering ecosystem and development benefits over 70,500 ha (10,500 ha dry land forests, 20,000 ha rangeland, 40,000 ha arable land)*	• Ecological connectivity established between and within the different forest blocks, by implementing forest landscape management practices within the linear ecological corridors (primary linkages) and stepping stone corridors (secondary linkages) identified in the INRM land use plans. Physical measures include: (1)	2,034,795	9,830,929

[2] That is: *"….a conscious process of incorporating the multiple aspects of resource use into a system of sustainable management to meet the goals of resource users, managers and other stakeholders (e.g. production, food security, profitability, risk aversion and sustainability goals)".* (as defined by Sayer and Campbell (2004) and incorporated into the Land Degradation Focal Area Strategy for GEF5).

[3] SEA is a systematic, on-going process for evaluating, at the earliest appropriate stage of publicly accountable decision-making, the environmental quality, and consequence, of alternative visions and development intentions incorporated in policy, planning or programme initiatives, ensuring full integration of relevant biophysical, economic, social and political considerations (Partidario, 1999).

Land Management		*in the Qaroun Watershed.* The benefits include the following: - Reduced water deficiency - Increased clean water supply for human, animal and plant consumption - Reduced soil erosion - Increased productivity (increased net primary production in rangelands) - % family incomes from SLM practices *[Targets for each will be established during the PPG phase]*	upgrading of conservation status through designation of protection forests covering 10,000 hectares and human induced stressors (e.g. from deforestation, fire, unsustainable forest/wood harvesting) reduced to allow natural rehabilitation; (2) natural rehabilitation of 500 hectares of degraded forest land. • For production rangelands (20,000 ha targeted): technologies developed, tested and appropriate infrastructure established to operationalize SLM in line with developed ILUMPs, namely[4]: (i) seasonal rotational grazing to maintain pasture quality covering all kinds of rangelands; (ii) decrease stocking rate in moderately degraded pastures. • Increase water quality due to the reduction in pesticide and fertiliser pollution through improved agricultural management of 40,000 hectares of arable land.		
Sub-total				3,035,877	14,571,429
Project management Cost:				151,794	728,571
Total project costs				3,187,671	15,300,000

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	Ministry of Environment	In-kind	500,000
National Government	Ministry of Environment	Grant	5,500,000
National Government	Ministry of Agriculture	In-kind	500,000
National Government	Ministry of Agriculture	Grant	4,000,000
District Government	District Governments of Baalbeck, Zahle, West Bekaa and Rachayya	Grant	2,000,000
GEF Agency	UNDP	Grant	300,000
Other Multilateral Agencies	Development Banks	Loan	2,500,000
Total Co-financing			15,300,000

D. GEF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF AGENCY	TYPE OF TRUST FUND	FOCAL AREA	Country name/Global	Grant amount (a)	Agency Fee (b)[2]	Total c=a+b
UNDP	GEF	Land Degradation	Lebanon	3,187,671	302,829	3,490,500
Total GEF Resources				3,187,671	302,829	3,490,500

[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
[2] Please indicate fees related to this project as well as PPGs for which no Agency fee has been requested already.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. THE GEF FOCAL AREA STRATEGIES:

1. The project will address the GEF land degradation focal area objectives LD1, LD2 and LD3. It is designed to engineer a paradim shift from unsustainable to sustainable land management in the Qaroun Watershed. Ranked as Lebanon's most important watershed, this area is a critical source of water for urban use and food production. Notwithstanding this significance, the watershed suffers from accelerating land degradation, which is undermining ecosystem functions and derivative services. Land degradation is attributable to historic deforestation, excessive firewood collection, overgrazing, expansion of urban settlements, and inappropriate infrastructure placement. The project will promote an integrated approach towards fostering sustainable land management – seeking to balance environmental management with development needs. Amongst other things, it will set-up a multi-sector planning platform to balance competing environmental, social and economic objectives in district development plans and associated investments. In doing so, it will reduce conflicting land-uses and improve the sustainability of land management so as to maintain the flow of vital

[4] The list of examples of investment activities here is non-exhaustive, it may include other approaches as they would be defined in ILUMPs designed in Component 1.

ecosystem services and sustain the livelihoods of local and downstream communities. The platform will be underpinned by a robust decision support system—including a Strategic Environmental Assessment, and monitoring framework so as to inform the planning process, development investments and enforcement. This will provide a system for determining where development should be avoided (in the most ecologically sensitive areas), where and how impacts should be reduced, and where and how land should be rehabilitated. Further, the project will adapt land use practices in different economic sectors—testing new management measures, as needed to reduce environmental stressors. The project advances the strategic objectives of the UNCCD 10-year strategic plan namely: 1) To improve the living conditions of affected populations; 2) To improve the condition of affected ecosystems; 3) To generate global benefits through effective implementation of the UNCCD. It addresses the following operational objectives of the 10-year UNCCD Strategic Plan: 1) Advocacy; 2) Science, technology and knowledge; 3) Capacity-building; and 4) Financing and technology transfer.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NIPS, PRSPS, NPFE, ETC.:

2. The project will advance the objectives of the 2003 National Action Programme to Combat Desertification. The NAP highlights the need to create effective and linked institutions at local, sub-national and national levels to oversee land use planning and zoning. Furthermore, it calls for the creation of mechanisms to ensure broad participation in the land use planning process by different stakeholders representing different development interests, so as to balance the needs of different economic sectors. This need will be addressed through the creation of the multi-sectoral planning platforms in the 4 districts that have jurisdiction over the Qaroun watershed. Moreover, it highlights the need to improve forest protection and management by effectively engaging local authorities, addressing amongst other things the problem of overgrazing which is suppressing natural forest rehabilitation. It also bans wood cutting unless where prescribed and managed according to agreed management plans. The project addresses these needs. 10,500 hectares of forest land will be brought under better management, either through their designation as protection forests, or through the institution of sustainable use management measures. The NAP further identifies the need to adapt livestock husbandry practices so as to reduce rangeland degradation and to enhance the vegetative cover of degraded rangelands by enabling natural rehabilitation. The project will address this need by promoting rotational grazing and optimum stocking, covering 20,000 hectares of threatened rangelands. The project was identified as a national priority—both because it addresses the above needs, but also because of the importance of the watershed in providing for water security, and the fact that it is designated as being at high risk of desertification.

B. PROJECT OVERVIEW:

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

3. The lands bordering the Mediterranean Sea in southern Europe, north Africa, and western Asia constitute the Mediterranean Basin Ecoregion - and share a climate characterized by generally mild, rainy winters and hot, dry summers. The Mediterranean Basin's mosaic of Mediterranean forests, woodlands, and scrub are home to 22,500 endemic vascular plant species. The Eco-region counts as one of the world's most endangered; only 4% of the original vegetation remains intact, as human induced pressures, including overgrazing, deforestation and conversion of lands for pasture, agriculture, or urban areas have caused widespread land degradation. Formerly these lands were largely cloaked by forests and woodlands, but heavy human use has reduced much of the area to scerophyll shrublands. Conservation International has listed the Mediterranean basin as one of the world's 34 biodiversity hotspots.

4. Lebanon, which has a total land area of 10,452 km^2, lies entirely within the Mediterranean Basin Eco-region. Situated east of the Mediterranean Sea, it stretches 210 km along the coast and 50 km inland. The population is estimated at 3.8 to 4.0 million with an estimated annual growth rate of 1.2 percent. The population is unevenly distributed across the country with more than 90 percent living in urban areas5. 300,000 people (8% of the population) are considered extremely poor, with 28.5% considered relatively poor. Lebanon is a service-based economy, the service sector accounting for almost 70% of GDP and industry for 18%. Agriculture in Lebanon is the third most important sector in the country. It contributes 7% to the country's GDP and employs 15% of the populace.

5. Precipitation averages 840 mm/year, an amount that may appear relatively large in comparison to neighboring countries but which masks high temporal and spatial disparities. Temporally, precipitation occurs during a short period (about 80 rainy days between September and May). Spatially, it is not evenly distributed --varying from 200 mm/year in the northern inland region to more than 1,500 mm/year on the peaks of Mount Lebanon. Forty percent of Lebanon is arid and semi-arid, twenty percent is dry-sub-humid and forty percent is sub-humid and humid. 25% of the land is under agriculture (248,000 ha, which 144,000 ha is irrigated), 13% under forests (from a historic coverage of 74%), 7% is abandoned, 52% is rangeland, or rocky and uncultivated (400,000 ha is considered prime rangeland) and 3% is built-up. Most of the country's forests are located in two mountain ranges, Mount Lebanon and the Anti-Lebanon massif. These ranges are considered as the 'water towers' of Lebanon as they provide crucial water provisioning

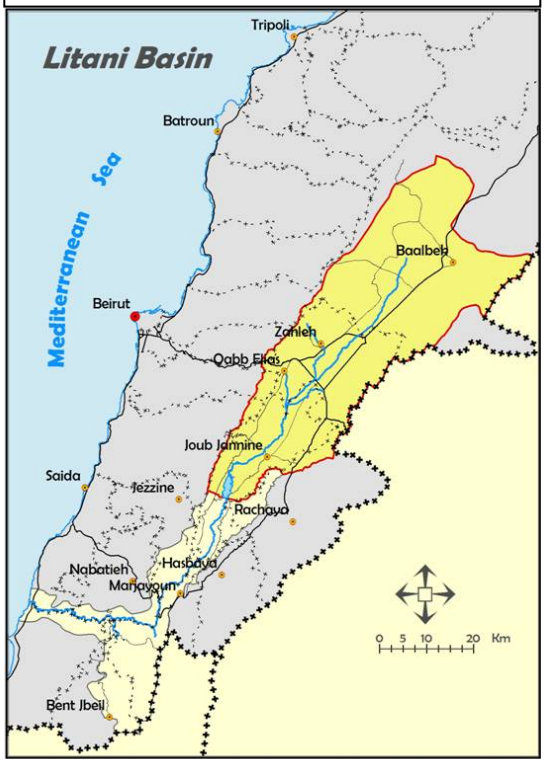
[5] Council for Development and Reconstruction, 2005. *National Physical Master Plan for the Lebanese Territory Final Report.* Lebanese Republic.

services and quality regulation services vital to the economy. They also critical in sustaining the country's rich aquatic biodiversity endowment[6].

6. The use of water resources in Lebanon is approaching unsustainable levels, with agriculture accounting for two-thirds of the total water demand. The seasonal disparity between the wet period (winter) and the growing season (Spring to Autumn) coupled with inadequate storage capacity has led to excessive and largely uncontrolled withdrawal of groundwater for irrigation in the hot dry summer. The unsustainable use of water is mirrored by the unsustainable use of land. Across much of the country, landscapes face moderate to severe deforestation and overgrazing pressures, corresponding in high rates of erosion, increasing soil salinity, lowered soil fertility, and loss of biodiversity. Both trends are linked to unsustainable production practices. Degradation is undermining ecosystem functions and services and the welfare of rural people dependent upon these services for their subsistence and for their livelihoods.

7. Amongst, the areas suffering from these pressures, the Qaroun Watershed (see Map 1[7]) stands out because of the adverse implications land degradation there has for national development. The Litani River has its headwaters and main catchment area in the watershed. The country's largest and longest river, the Litani is also its most valuable fresh water resource-- generating around 30% of surface water and 10% of power production. It irrigates more than 5,600 ha of agricultural land. Hence, any loss of streamflow, for instance arising as a result of land degradation in the watershed has significant adverse socio-economic impacts. The watershed extends over an area of 1,570 km^2 and is divided into four administrative districts: Baalbeck, Zahle, West Bekaa and Rachayya under the Governate of Bekaa. It includes the eastern slopes of the Mount Lebanon Range, part of the Bekaa Valley (the watershed makes up 57% of the Valley), and the western slopes of the Anti-Lebanon Range. The Watershed straddles an altitudinal range between 800 and 2,615 m and drains towards the Qaroun Lake. The climate of the flood plains is sub-arid, but the surrounding mountain summits are snow capped for nine months of the year. The average precipitation is around 550 mm. The discharge rate of the Litani River is approximately 0.5 km^3/year—marked by high seasonal fluctuation. The highest streamflows are registered in the wet season, with peaks in February and March. This flow is derived largely from the surface runoff of winter rainfall. Large perennial springs make a major contribution to baseflow during the dry season. Many tributaries flowing from the eastern and western slopes of Mount Lebanon and Anti-Lebanon join the Litani River within the watershed, the Ghzayyel and the Berdawni rivers being the largest. The upper Litani ends at the Qaroun Dam, a reservoir with a storage capacity of 220 Mm^3, of which 160 Mm^3 are used for irrigation and hydropower and 60 Mm^3 as base for dry season storage. The Lake's waters irrigate 1,400 ha of land in the Bekaa valley and 36,000 ha in the South of Lebanon. More than 80% of the water in the Lake (or 180 Mm^3) are used to generate electricity in the Markaba (34 MW), Awali (108 MW) and Joun (48 MW) hydropower plants. The Litani River Authority operates these hydroelectric power plants.

Map 1: Location of Qaroun Watershed[13]



8. The Qaroun Watershed has 18,756 ha of natural forests, wetlands and associated ecosystems (12% of the watershed), 77,908 ha of agricultural land (50%), 55,585 ha of rangelands (35%), and 4,751 ha of built-up areas (3%). Calliprine Oak (*Quercus calliprinos*) forests and Gregian Juniper (*Juniperus excels*) forests are found on the eastern slopes of Mount Lebanon with Calliprine Oak forest predominating on the western slopes of the Anti-Lebanon range. Sheep and goat constitute the main livestock in the area. 75% of the diet of these herds is provided through grazing on the rangelands. On both the Anti-Lebanon and Mount Lebanon slopes, the carrying capacity of rangelands is now estimated to be exceeded in areas by 30%[8]. The arable lands in the watershed are an important agricultural area. 57% of the country's breadbasket - the Bekaa Valley- lies in the watershed. 37% of Fruit Trees, 6% of Olives, 57% of Cereals, 62% of Industrial Crops and 57% of vegetables produced in Lebanon are grown in the Bekaa Valley. Most farms are smallholdings, with a mean plot size around the national average of 1.27 ha [9]. Some 42% of agricultural land is irrigated.

[6] Lebanon's freshwater fauna and flora include 987 species[6] of which 656 are invertebrate species (61 species of worms, 41 mollusks, 60 crustaceans, and 494 insects).

[7] Map from Litani Basin Management Advisory Services, 2005. *Litani Water Quality Management Project Rapid Review Report.* Bureau for Asia and the Near East, U.S. Agency for International Development.

[8] Darwish, T & Faour, G. 2008. *Rangeland Degradation in Two Watersheds of Lebanon.* Lebanese Science Journal, Vol. 9, No. 1, 2009.

[9] Ministry of Agriculture. 2003. *National Action Programme to Combat Desertification. Lebanon.*

Forests and rangelands are owned by the state and managed by the Ministry of Agriculture in cooperation with municipalities. Arable land is privately owned in the Watershed.

9. The 2003 NAP classified land according to the risk of desertification. The results indicated that 48% of Lebanon has a high desertification risk index. The Qaroun watershed is coinsidered to be particluarly prone to desertification with an average of 75% of the watershed's area ranked as being of high or very high desertification risk (see Table 1 below—data disaggregated by district).

Table 1: Desertification Risk of the Districts (Cazas) of the Qaroun Watershed and the entire Country

District	Urban/Unproductive	Very Low	Low	Moderate	High	Very High
West Bekaa	5.8	0.0	2.8	31.0	59.4	1.0
Baalbeck	3.9	0.0	0.1	5.7	67.5	22.8
Zahle	7.0	0.0	0.4	22.9	60.4	9.3
Rachayya	1.8	0.0	0.2	19.7	77.7	0.6
Lebanon	8.6	0.0	5.7	26.4	48.1	11.2

The proximate **causes** of land degradation in the Qaroun Watershed are: (i) Overstocking of livestock. This is a cause of degradation across the country, where sheep and goat numbers have increased from 500,000 in the 1970s to 700,000 in the 1990s, with even higher numbers currently. This is putting pressure on available pastures, leading to the compaction of soil, soil erosion, and a loss in soil permeability—reducing water infiltration and storage capacities. This affects the ecosystem's hydological provisioning and regulation functions. The situation is most pronounced in the Baalbeck district, where the number of small ruminants are exceeded carrying capacity especially during the late winter – spring months, leading to the situation described. This overgrazing and misuse of rangelands cause disappearance of useful species (legumes) and dominance of unpalatable species. Experiments conducted in this district showed that partial protection from grazing, more than doubled the legume seeds in the seed bank[10]. (ii) Years of forest fires and excessive gathering of fuel wood by local people dependent on this resource for fuel in a region where poverty levels are high, have led to widespread deforestation, reducing forest cover to a fraction of the former area. The historic deforestation and degradation of forests have exposed the already fragile soils of the watershed to wind and water erosion. (iii) The unplanned development of industry, quarries and urban settlements and infrastructure are further undermining ecosystem integrity. In addition natural phenomena such as heavy/extreme rainfall (intensity) are accentuating these processes and the region is thus increasingly vulnerable to natural disasters including land-slides and floods. (iv) The inappropriate application of pesticides and fertiliser lead to land degradation in the form of reduced water quality. The analysis of the surface water and sediments indicated high levels of agricultural pollution in the Qaroun Watershed. Field survey and data collection in the watershed showed high levels of pesticide use. Many pesticides, and to lesser extent herbicides, are being applied at almost twice the recommended rates, and the number of successive applications in one season ranges from 3 to 5 times hence increasing pesticide resistance. Many banned pesticides, e.g. DDT and Azinphos-methyl was detected in surveys of the water and sediment in 2011. Analysis of the data on fertiliser use in the Qaroun Watershed revealed the following:

- The number of N and P-units added by the farmer to lettuce, tomatoes, melon, and other vegetables averaged at least 1.4 times the recommended fertilisation doses as per crop uptake and utilisation that would generate the expected yield.
- Fertilisers applied to potato and grapes, considered as cash crops in the region, exceeded 3 times the N-unit recommended doses to be applied, while those of P-units averaged to almost twice the recommended doses.
- Fruit trees data were not found to be consistent due to the different practices among farmers, and that vary from region to the other according to water availability. However, stone fruits were found to receive at least 1.5 times more than the recommended rates needed for the N-unit and almost 3 times more for the P-unit[11].

Farmers are over-fertilising their crops and doses are being applied without proper soil and water analysis and interpretation. Nutrient demands are being exceeded and crop yields are comparably low with respect to the input of fertilisers. The relatively high levels of land degradation in loci within the Qaroun Watershed are leading to a reduction in the biological and economic productivity of land and significant changes in ecosystem functions. This is causing increasing out-migration to the cities --disrupting the social structure of communities.

10. **Land Use Management:** Lebanon has four spheres of government: National, Governate (*Mohafazat*), District (*Cazas*) and Municipal. Some powers and functions are located to one sphere of government, while others are shared. Land use and natural resource regulation are largely national and governate competencies, while land use planning and enforcement are national, district and municipal competencies. Regulation: At national level, under the mandate of the respective Ministries, and at Governate (*Mohafazat*) level, where all ministerial administrations are present under the authority of the Governor (*Mohafez*), the main

[10] Osman, A. E., Nassar, A. & Hassar, S. H. *Grassland Improvement by reseeding native legume and protection from grazing in the Bekaa Valley, Lebanon.*

[11] Earth Link and Advanced Resources Development, 2011. *Business Plan for Combating Pollution of the Qaroun Lake.* United Nations Development Programme.

institutions responsible for land use regulation are the Ministry of Environment (MOE), Ministry of Energy and Water (MOEW), Ministry of Public Works and Transport (MOPWT) and Ministry of Agriculture. The Ministry of Environment is responsible for discharging environmental management functions and regulations. These regulations require *inter alia*, that EIAs be commissioned for major physical developments, and lay out specific measures for protecting sensitive environments such as streams, rivers, springs, lakes and valleys. The MOE is also responsible for setting environmental standards, specifications and guidelines including for the prevention of pollution. The Ministry of Energy and Water (MOEW) is responsible for managing the country's water resources and (1) provides advice viz a viz the licensing of extractive industries where development impacts on water resources; (2) protecting water resources from over abstraction and pollution by issuing regulations. The Ministry of Agriculture's Directorate of Rural Development and Natural Resources (DRDNR) enforces forest legislation; it also designates protected forests[12] and regulates grazing permits and agreements on municipal lands. Planning: A National Land Use Master Plan (NLUMP) was prepared in 2004 and was subsequently approved in 2009. The Master Plan describes the land use pattern of the country as well as future land management challenges, lays out sustainable land use principles, sets out alternative scenarios for land use and development, and provides guidance for sectoral land management (transport, tourism etc.). The plan delineates areas of ecological and cultural importance, slated for protection and areas where higher environmental management standards are prescribed. The entire territory of Lebanon is zoned into Urban[1], Rural[2], Agricultural[3] and Natural[4] land use categories and the NLUMP specifies regulations governing land use for each category. Districts are responsible for developing master plans for their territories in consultation with the National Ministries and the Governate, in conformity with the provisions of the NLUMP. The district master plan is legally enforceable and indicates both to the district, municipalities within the district and to the public (developers, land owners, etc.) where certain types of land use and associated developments are permissible, and where certain activities are unlikely to be permitted. As such, it forms the basis for land use management and serves as a guideline to inform the Municipalities in its decisions on new developments and changes to existing land uses in its area of jurisdiction. The District Master Plan also functions as a framework for public and private sector investment in different types or levels of development in those areas of the municipalities that are identified as appropriate or suited to such development. It acts as a more detailed representation of the NLUMP and can be used for the updating/adjustment of the NLUMP if such actions are justified. Final District Master Plans need the DGUP's final approval. Lebanon is in the process of developing District Master (Land Use) Plans, but due to funding constraints, emphasis has been placed on developing urban plans for the municipalities and larger towns. The Directorate of Urban Planning (DGUP), Ministry of Public Works and Transport (MOPWT), prepares and reviews urban master plans in conformity with the provisions of the NLUMP and District Master Plans. The NLUMP's Natural and Agricultural zones, as well as District Master (Land Use) Plans (where they exist) are further regulated through the development of enforceable management plans for designated grazing and forested areas. These management plans are developed by the DRDNR, the respective Municipalities and local stakeholders Enforcement: It is the responsibility of the Municipal Police (smaller cases) and the Internal Security Forces (larger cases) to enforce decisions and court case rulings regarding environmental abuses. The Ministry of Agriculture is responsible for the enforcement of forestry regulations, but this is in usually orchedstrated through the Municipal Police.

11. While NLUMP, District Master Plans and Municipal Urban Plans set out the desired future patterns of land use and development within district and municipal boundaries, and provide a framework for land use permitting, depending on the nature of proposed development activities, land use permitting processes within district and municipal boundaries can involve several regulatory authorities across all spheres of government. Typically, permitting processes involve several regulatory authorities. Upon receipt of an application for land conversion, regulatory authorities review the application and issue permits. They have several options: (a) refuse to grant the permit/license (b) grant it unconditionally or (c) issue permit with conditions to mitigate and minimise impacts; and offset unavaoidable impacts on land. However, land conversion often takes place illegally (with no application being submitted to the authorities, or with proponents not abiding by all the necessary permitting conditions). Without proper monitoring and enforcement, the offenders are not penalised, regulatory processes are undermined, and land continues to be degraded and lost.

12. The Baseline Project: The country will commit to natural resources management in the Watershed and will invest at least US$ 250 million in Environmental Protection in the Qaroun Watershed over the project period. This can be loosely divided into four areas; that related to regulation, planning and enforcement and to changing the production practices of sectors driving land degradation.

[12] Protected Forests were created as an official protected area category in Lebanon by Law 558/1996. Camping, pruning and logging, grazing and hunting are banned in and within a specified protection radius (usually 500 m) of these areas. The ban exempts activities related to forests management and research. These areas are managed by the Ministry of Agriculture in cooperation with municipalities.

[1] Urban areas correspond to the country's large agglomerations. These areas were defined taking into consideration their expected expansion over the coming 25 to 30 years. At the time of the preparation of the NLUMP the zones contained 2/3 of the resident population of Lebanon, and the majority of industrial and tertiary activities of the country. CDR, 2005.

[2] The mixed rural areas contain small cities and villages, agricultural lands with modest dimensions or low productivity, as well as natural areas of local importance, but not considered significant at the national level. CDR, 2005.

[3] Designating the main agricultural areas and farming villages.. CDR, 2005.

[4] The category includes essentially natural areas, of national significance. Land use in natural areas is necessarily restrictive. Three areas are distinguished: (i) The high mountains above 1,900 m altitude; (ii) The Cedar and mountain tree plantation corridor; and (iii) Valleys, forests of quality and other zones of ecological continuity. CDR, 2005.

1. Regulation:

Investments at National Level: The Ministry of Agriculture will invest in excess of US$ 3 million over the project period for regulation and compliance monitoring role of the forestry in the watershed. DRDNR has in recent years been successful in advancing forest conservation with no loss in forest cover registered since 2003. The focus of this investment will be on managing tree felling for timber and fire fighting. Further investment will be made by the Ministry of Environment towards the development of national environmental standards, specifications and guidelines and undertaking EIAs to the amount of US$ 1 million. The Ministry of Energy and Water will spend US$ 3 million during the project period on regulation and compliance monitoring to protect water from pollution.

Investments at the Governate and District Level: At the Governate level, National Treasury allocates around US$ 1 million annually for land management regulation. The four districts of the Watershed will invest in excess of USD 1.5 million over the project period in land management regulation.

2. Planning:

Investments at National Level: An estimated amount of US$500,000 will be spent in the Watershed by the Ministry of Public Works and Transport on the preparation and review of urban master plans. The Ministries of Agriculture and Environment will invest in excess of US$ 2 million over the project period in assistance to district land use planning, forest management planning and rangeland management planning.

Investments at District Level: At the district level, the national treasury allocates approximately USD 1 million in support to the district land use planning process to the representatives of the various ministerial departments.

Investment at Municipal Level: The four municipalities will invest approximately US$ 2.5 million in the development and assistance in the development of the district land use plans, urban plans and rangeland management plans.

3. Enforcement:

The four municipalities will invest approximately US$ 1.5 million in their police force which will among other duties perform environmental enforcement. The Internal Security Force will spend in excess of US$ 3 million in applying law and order in the region. The Ministry of Agriculture allocates US$ 4 million a year (US$ 20 million over the project period) for the enforcement of forestry legislation nationally.

4. Production Practices:

- Forest Management: A further estimated US$ 7 million investment will be made in forest management that will be targeted towards reforestation. This includes the funds earmarked for the Qaroun Watershed under the National Reforestation Plan as well as the funds from the US$ 12 million Lebanon Reforestation Initiative (2010 – 2015; funded by the International Program of the US Forest Service (USFS). The goals of the initiative are to strengthen Lebanon's forest seedling producing nurseries and oversee the implementation of large-scale reforestation activities in the country, in line with the NRP. Of this amount and estimated US$ 2 million is earmarked for the Qaroun Watershed over the project period.
- Agriculture Support: A further US$ 1 million can be considered as baseline from the Green Plan in the Qaroun Watershed, that could contribute to addressing LD in that it provides grants to farmers to repair and/or build stone terraces and retaining walls, build hill lakes and install irrigation networks. An estimated US$ 2 million is earmarked for increasing the agricultural productivity and incomes of farmers (The Hilly Area Sustainable Agriculture Development Programme (2010 – 2016;)) through the improvements in soil and water harvesting structures and soil and water conservation measures leading to increased agricultural productivity and better market linkages for small farmers through the provision of technical support services and strengthened capacity of project implementing agencies and farmers' organizations.
- Water Pollution: An amount exceeding US$ 230 million will be spend in the watershed during the project period in addressing water pollution through the improvement or installation of Waste Water Treatment Plants and reducing effluent discharges from private enterprises.

13. **The long term solution and barriers to achieving it**: While impressive, the existing baseline initiatives suffer from a number of gaps. First these initiatives are not sufficiently coordinated and do not specifically take global environmental concerns into account. Many sectoral initiatives have a narrow focus: for instance forestry activities focus solely on increasing tree cover, without addressing rangeland management as would be needed under a landscape wide SLM strategy. Moreover they do not necessarily use indigenous trees, nor take into account the effect of tree monocultures on biodiversity or for that matter stream flow. By failing to address livestock husbandry, they can actually undercut their own success, given that cattle and goats can damage seedlings. Likewise, agriculture sector investments are focused on enhancing food security by increasing agricultural production through intensive agriculture based on heavy use of fertilizer and pesticides and weak land husbandry. These can have adverse effects, including reduced water quality (surface and groundwater) and soil erosion where these parameters have not been taken into account in planning. Nevertheless, the baseline is large. There is considerable scope for tapping it, to ensure that it addresses social and economic needs, which they are designed to do, while also addressing environmental concerns and specifically combatting land degradation. There is a need to balance objectives—indeed this would be a cost effective solution for achieving sustainable land management. The

long-term solution is to build the necessary conducive environment for sustainable land management mainly consisting of a comprehensive decision-making and monitoring and enforcement system at the district level, and mobilise the baseline programme to engineer a paradigm shift from unsustainable to sustainable land use while improving the livelihoods of the farming communities.

14. There are, however, two major **barriers** to implementing this solution, as described below:

Barrier 1: Absence of landscape level framework for controlling land degradation and upscaling SLM in the Qaroun Watershed: The substantial financial and human resources earmarked for baseline programmes related to agriculture, forestry and improvement of water quality in the Qaroun Watershed are deployed and managed by sectoral departments working in silos. There is a need to harmonise and coordinate efforts across sectors, and spearhead innovative ways and means of enhancing ecosystem functioning and resilience in an integrated and coordinated way that balances socio-economic and environmental objectives. Also, authority for the regulation of land and natural resource use is scattered among different entities. Coordination among these regulatory authorities is weak and this often results in land use approval decisions either taking too long, or land use changes and developments being approved without effective consultation. Decision-makers lacks solid information on which to base decisions regarding land use allocation and management. Without a proper assessment, monitoring and planning regime for the maintenance of ecosystem services, managers and users have a difficult time effectively evaluating and integrating land degradation risks within decision-making. The municipalities lack the capacity to generate, implement and enforce integrated land and water management plans. Financial constraints present a further barrier to upscaling SLM levels across the landscape at the level required to successfully arrest land degradation and combat desertification. Ministries, governates, district and municipalities have a voice in where to channel baseline programme resources for supporting forestry, agriculture and livestock but this often focuses on production and technical efficiencies without weighing 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. Further, there is a disconnect between public expenditures and environmental priorities i.e. land degradation[13].
Barrier 2: Inadequate demonstrated experiences in INRM approaches at the landscape level: Lebanon does not have operational, "on-the-ground" examples of integrated sustainable land management at landscape scale (as opposed to more piece-meal management of specific problems such as forest fires). Without access to know-how, proven through demonstration, government decision-makers and resource users do not have the tools and knowledge necessary to decrease land degradation. There is a critical un met need to infuse new management approaches into the management system—focusing on the sectors that are driving land degradation. Forest Management: Although the principles of forest management are well understood, know-how needed to maintain the functional integrity of forests is lacking. The long-term resilience of the forests and their ability to provide important ecosystem services will require that certain areas (large forest blocks) are conserved rather than utilised for firewood and grazing and that connectivity is maintained between these conserved areas by better managing these drivers of degradation—thus removing anthropogenic stressors that are impeding natural forest rehabilitation. Rangeland Management: There is a need to reduce stocking levels in ecologically sensitive areas and promote new husbandry measures, such as rotational grazing. Arable Land: Although much still needs to be done, it is felt that water pollution from solid waste and wastewater (except for improved planning) is addressed through the baseline. However, there is a clear lack in the baseline project to address the pollution due to unsustainable agriculture practices as in excessive use of fertilisers and pesticides. The mainstreaming of sustainable land use management into large-scale arable farming has not yet taken place in the Qaroun Watershed. Practices are mainly influenced by short-term profitability and in many cases based on incomplete and incorrect knowledge bases. There are few examples of cultivation practices which are financially profitable but also environmentally sustainable.

B. 2. INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND) OR ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF TRUST FUND) OR ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:

15. The Government of Lebanon is requesting GEF support through this project to remove, in an incremental manner, the afore-mentioned barriers to engendering sustainable land management. Two components are proposed, addressing the barriers in turn.

Component 1: Enabling framework for districts to plan, monitor and adapt land management and leverage national and district baseline investments for SLM at the Qaroun Watershed level:

This component will incorporate sustainable land management objectives and safeguards in the land use and natural resource permitting process. Integrated Land Use Management Plans (ILUMPs) will be developed for the four districts ensuring optimal allocation of land resources to generate development benefits and critical environmental benefits in tandem. In order to ensure these ILUMPs are based on

[13] World Bank. 2011. Republic of Lebanon Country Environmental Analysis. Sustainable Development Department Middle East and North Africa wrote *"There also seems to be a disconnect between public expenditure and the environment priorities as defined by the COED [Cost of Environmental Degradation]. This will undermine the importance of the environmental priorities in ensuring that the environment is mainstreamed in the productive sector of the economy. … The challenge for reaching financial sustainability is not to increase government investments but to meet certain socioeconomic criteria by, first, prioritizing the investments and reallocating the O&M costs, and second, by devising a financial management system and implementing it on the basis of clear priorities and well-defined outcomes through the mobilization of local resources"*

solid and up-to-date information, a Strategic Environmental Analysis (SEA) of the Qaroun Watershed focusing on documenting the causes or drivers of land degradation will be undertaken. The SEA will provide solid recommendations for avoiding and mitigating the land degradation impacts of the main sectors in the watershed. The support to INRM will be strengthened by making key spatial data and information available through the development of a GIS based LD/SLM database 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. Through these 'decision support systems', districts and municipalities will be able to determine where critical habitats are, which threats these habitats are suffering, whether a given site has ecosystem services value, what the predominant land use are and what the current as well as potential effects of land degradation on ecosystem services are. The project will set up protocols for monitoring and evaluation of SLM practices in the Qaroun Watershed and link this to the GIS System. Efforts will be build upon and collate an existing knowledge base that is largely sectoral, e.g. biodiversity conservation, rangeland management, forest management, water resource management, infrastructure development and arable land production. A coordination mechanism that brings together authorities tasked with natural resource and land use planning and permitting at a district scale will be put in place in the target districts. This will enable authorities to develop a joint vision for the desired future state of land use in the districts and municipalities. Further, compliance monitoring and enforcement, based on the newly developed ILUMPs, will be strengthened in order to eliminate the current silo approach, where for example agricultural officials only monitor impacts on agriculture and water officials only monitor impacts on water, to a more integrated approach that allows for joint enforcement. Enforcement and compliance teams comprised of officials from different sectors will be created and trained on this new approach. Also, as part of this process, the capacity of regulatory authorities, law enforcement agencies and courts to prosecute land crimes will be strengthened. 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. This information will be used by selected local governments to broker public and private resources for increased funding towards SLM. The process of increased funding allocation towards SLM by the project will also involve a process of review and alignment of existing funding to the identified production sectors: Public Expenditure Reviews of the agricultural, forestry and rangeland sectors in the Qaroun Watershed will be undertaken, negative spend will be identified and reduced, and budgets realigned to finance for example the destocking of rangeland, rehabilitation of forests. For both new and existing (realigned) funding sources, the project will develop resource distribution criteria to ensure the most effective and efficient application of scare resources.

Component 2: Reducing the Effects of Land Degradation on Ecosystem Services through Sustainable Land Management: The component will target the conservation and rehabilitation of critical ecosystems in the Qaroun Watershed. Ecological connectivity between existing forests complexes in the Watershed will be enhanced by designating 10,000 hectares of intact forests as protection forests (reducing or preventing logging, firewood collection and grazing in these areas) and addressing human induced stressors that are impeding forest rehabilitation in degraded areas (500 ha). The delineation of forest complexes as protection forests as well as the identification of areas for rehabilitation will be undertaken with a view towards creating linear ecological corridors (e.g. reforestation adjacent to existing protected areas or protection forests) and stepping stone corridors (e.g. rather proclaim a protection forests or reforest an area between two existing forest complexes rather than a stand-alone site) in order to increase the functional connectivity of the forest. The boundaries of the protection forests will be delineated and marked and the municipalities capacitated in the management of these forests. This will include the reduction of firewood harvesting volumes in forests important for the delivery of critical ecosystem services, moving high-value forests from the 'harvested' to the 'protected' category and implementing non-exhaustive forest use in cooperation with local communities. This will include capacity building to restrict forest felling for heating, forest fire management including early warning systems and fire combating techniques (although work in the baseline is done on firefighting, local firefighting capacity is still needed as fires still occur, although overall forest cover remains stable. This is due as there are reforestation projects going on as well. Through increased local reaction time of combating fires, it is hoped that the forest cover in the Qaroun Watershed will increase as reforestation projects are being undertaken, and areas lost to fores are minimised) as well as the control of any grazing activities in these areas through the restriction of grazing in these areas. Further, to counter the negative influence of the agriculture sector on land degradation, demonstration of sustainable land management practices will be implemented on private and community farms, both on arable land and pasture. The work on arable land covering 40,000 ha will address both pesticide and fertilizer pollution reduction through various interventions e.g. organic control practices, application of pesticides only when threshold values indicate that pesticides use is justified, crop-rotation and inter-cropping, promotion of soil and plant tissue testing as a useful tool for assessing plant nutrient needs, use of sources of organic materials that are available (manure, composted plant residues, etc) to improve soil structure, water and nutrient holding capacity and soil fertility, creation of conservation buffer zones to manage soil, water and nutrients for sustainable agricultural production, while minimizing environmental impact. The exact measures will be established during the PPG. For production rangelands, technologies will be developed and tested and the necessary infrastructure will be put in place to demonstrate SLM approaches at specific sites covering at least 20,000 ha. The approach will be tested on municipal land through restricting the number of small ruminants as well as the application of rotational grazing especially in the critical late winter - spring months. In order to encourage property rights in these historically open-access properties, livestock herders will be assisted in institutional strengthening through the establishment of cooperatives. The municipalities will enter into legal-binding agreements based on the jointly-developed management plans with the cooperatives taking an implementation role and the municipalities a supervisory/extension/enforcement role. Rangeland management arrangements including rangeland rehabilitation and protection will be agreed between municipalities concerned, livestock herders and other rangelands users and a

rangeland management protocol binding the parties developed. The reduction of livestock numbers of the individual farmers will be based on a fair and equitable mechanism and the farmers will be compensated for this loss through increased property rights on the land, increased productivity of the remaining livestock and reduced rent payments to the municipalities for the use of the rangelands.

Global benefits: The **global benefits** that will be delivered primarily include the adoption of SLM practices that will reduce land degradation and secure ecosystem services over a landscape of more than 157,000 ha as follows:.

Baseline practices	Alternative to be put in place by the project	Selected environmental benefit
Over-grazing and degradation of rangelands: - No attention paid to carrying capacity of rangelands. - Open-access regimes with no efforts in rangeland management. - Increase in less palatable species. - Soil erosion of barren degraded lands.	Improved rangeland management: - Promotion of rotational grazing to provide rest periods. - Changing from open access to regulated grazing regimes. - Re-seeding of palatable species and weed management.	i) Sustainable management of land and natural resources on at least 70,500 hectares of land consisting of agricultural land, rangeland and forest land that result in reduced soil erosion, halt/reverse land degradation process and continued provision of ecosystem services. ii) Improved productivity as measured by increase in Primary Productivity and reduced erosion rates. iii) Improved socio-economic returns from improved land productivity. iv) Increase in Biodiversity Intactness in Dry Forests. v) Improved water availability through the improvement of streamflow and quality. ***Baseline data and GEB targets will be collected during the PPG stage, in conjunction with the completion of the LD Tracking Tool.
Degradation of dry land forests through: - Illicit felling of trees for fuel wood. - Overgrazing of forest lands. - Rampant fires (with increasing occurrence). - No rehabilitation of burned areas.	Sustainable managed dry forests: - Forest exclusion zones and set aside of important areas as Protected Forests. - Reducing wood collecting pressures. - Restoration of degraded forests. - Proactive forest fire management.	
Excessive use of pesticides and fertilisers in irrigation crop management.	Sustainable Land Management principles introduced in arable farming that lead to reduced use of fertilisers and pesticides.	

B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS:

16. Significant socioeconomic benefits will accrue at both national and local levels as a result of project interventions. Nationally, the project will secure ecosystem services vital to Lebanon's economy, in particular water provisioning services. It will also prevent the enormous cost, both in terms of asset loss and human lives, of possible natural disasters including floods and landslides. The main livelihood options of local communities in Qaroun Watershed are related to livestock husbandry, forestry, and crop cultivation. The project will enhance the resilience of the resource base on which people depend, in the case of the no-project scenario the resilience of the ecosystems to withstand threats would keep declining. Specifically, under the business-as-usual scenario, the land use planning (mostly urban planning) does not consider the long-term resilience of the resource base on which communities rely. Under the GEF project, local communities in 4 districts covering over 157,000 ha of land, will – through the ILUMPs receive assurance that the resource base on which they depend in agriculture (e.g. forage productivity) will be more productive in the long term, that stable water quality and supply will be guaranteed. The project will arm the local farmers in 20,000 ha with knowledge, and skills on improving small ruminant management, which ultimately will translate into higher productivity. The farmers will also receive increased property rights to the land with long-term management agreements signed with the municipality. The diminished fire frequency is believed to have a positive impact on the health condition of local communities and on the condition of their resource base. The reduced pollution of water will reduce the incidence of associated diseases and health disorders. Studies conducted in Lebanon have estimated the that by increasing water quality bthroughout the country to Good Ecological State (GES) according to the EC Water Framework Directive, a total benefit figure for water quality improvements in Lebanon by 2020 will be in the range of US$ PPP[14] 78.2 million and US$ PPP 281.2 million[15]. Many local level activities will be implemented by local stakeholders themselves. The project will make the business and economic argument of the value of optimal functioning ecosystems, supported by ecosystem service valuation studies that will ultimately result in increased Government and private sector investments in the conservation and rehabilitation of the watershed. Following the UNDP and GEF gender policies and strategies,special attention will be placed on gender equity, and in particular ensure full participation of women in consultations on integrated natural resource management, and land-use planning processes.

[14] Purchasing Power Parity

[15] Dounami, F & Musharrafiyeh, 2011. *Analysis for European Neighbourhood Policy (ENP) Countries and the Russian Federation on social and economic benefits of enhanced environmental protection – Republic of Lebanon Country Report,* ARCADIS, Institute for European Environmental Policy (IEEP) Ecological Institute, Environmental Resources Management Ltd. and Metroeconomica Ltd. Brussels.

17. Sustainability: This project is building on a strong baseline. First, a policy and institutional framework for integrating natural resource management into land use planning already exists. Secondly, there is a strong commitment from Government to address the land degradation issues in the Qaroun Watershed, as it is a priority watershed for the country. Third, the project has financial sustainability written into it, through the review and realignment of public expenditure and the brokering of additional public and private funding towards natural resource management in the watershed. The key gaps in the current process are capacity and coordination among all the spheres of Government to recognise the values of natural resources and the ecosystem values it provides and the application of this recognition in the land use allocation and permiting process – which this project is designed to address. The project aims to empower local stakeholders (municpalities, private landowners and farming cooperatives) to become custodians of the important natural resources in the respective areas. Speciffically, the project will: (a) Improve capacity of all regulatory authorities that impact on natural resources at a districty and municipla level and support the embedding of this by developing sustainable mechanisms for institutional cooperation and coordination between spheres of governmnet, civil society that deliver improved regulatory efficiencies and effectiveness; (b) Secure sustainable financing for natural resource management through realignment of public expenditure streams and brokering additional funds for sustainable land management; (c) Empower local decision-making bodies and communities to co-manage natural resources.

B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS TO BE DEVELOPED DURING PROJECT DESIGN:

Risk	Rating	Management Strategy
Rehabilitation of forests and defining no-development zones in the Qaroun Watershed may encounter resistance from production sectors such as infrastructure, mining and agriculture, and local communities	Moderate	The project will work towards developing capacity of local government officials and stakeholders in different sectors in developing integrated local land-use and development planning. The process will be done with the full participation of the stakeholders in government, non-government and the private sector, and including women, fostering understanding of the need for striking the right balance between development and safeguarding of ecosystems. The project will also make the economic case of sustainable land management versus the development of certain sectors in sensitive areas delivering critical ecosystem services. An effective communication strategy and stakeholder involvement plan will also be developed and implemented, for stakeholder support.
Land owners/users float planning regulations leading to multiplication of quarries and extension of agricultural areas, including increase in roads leading to quarries, farms	Moderate	The project targets strengthening of compliance monitoring and enforcement to reduce the risk of undesirable behaviours on the part of individual land unit managers. Establishment of landscape level management fora and landscape level management planning through participatory processes, as well as robust implementation of monitoring mechanisms for biodiversity and ecosystem resilience will work towards minimising the risk. A dialogue with industry and farmers will be undertaken as part of the process of district land use planning – to obtain industry buy-in and address concerns, so as to improve compliance.
Future Government Administrations may be reluctant to increase areas designated for conservation and provision of EGS with fear of losing state revenues	High	The project will invest in development of a decision support system for land-use, with valuation tools for different types of ecosystem services and other land use values. The project will conduct SEA of the watershed and value the monetary loss of land degradation causes and drivers in order to convince Government and private sector of the importance of preserving these services.
Conflicts and misunderstanding among public institutions, private sector partners, NGOs and resource users undermine partnership approaches and implementation of cooperative governance arrangements	Moderate	Where possible, formal agreements/MOUs will be used to define roles and responsibilities. Training will be provided to stakeholders on governance and conflict resolution. Activities will be designed and implemented in a win-win manner, beneficial to all, as far as possible. The sustainable development of the landscape will be emphasised with arguments that are supported with long-term economic forecasts.
Insecurity and political unrest resulting in considerable delays and postponement of project implementation.	High	The current political situation in Lebanon is stable, but the potential for a spontaneous upsurge in violence is real. The project team with support of the Country Office will implement a continuous monitoring of the security situation in the country and update the project board on regular basis so there is sufficient lead time for adequate response actions and adjustment in project strategy. The UN also constantly assesses country and localised risk in all areas where it operates through the unified UN Security System. During the project preparation and implementation, the system of security clearances will be enforced for any project related field deployment.

B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:

Stakeholders	Project Implementation Role
Ministry of Environment	The national environment agency, responsible for all environmental protection issues in Lebanon. The responsibilities of the Ministry are: (i) to strengthen environmental inspection and enforcement; (ii) to promote sustainable management of land and soil; (iii) to preserve and promote Lebanon's ecosystem capital (iv) to promote hazardous and non-hazardous waste management. The Ministry will provide overall policy and legislative advice to protected area management; (v) to control pollution and regulate activities that impact the environment. The Ministry will

	facilitate functioning of the project implementation unit (PIU), especially in regard to liaison with government authorities from different sectors. It will oversee integration of conservation measures and monitoring system into the integrated land-use (management) plans and/or annual work plans and contribute to capacity building of stakeholders (public/private/community) in the Qaroun Watershed project site. Ministry will ensure coordination with other relevant projects and initiatives and will be active in monitoring of the PIU activities.
Ministry of Agriculture	The Ministry of Agriculture oversees the management of forests and rangelands in Lebanon. It would therefore facilitate the establishment of protected forests under the project as well as lead in the establishment of rangeland management protocol development. .
Ministry of Energy and Water	Responsible for the water sector with following responsibilities: (1) provide advice in the licensing of mines and quarries when mines and quarries impact on water resources (2) protect water resources from pollution and waste by issuing laws and regulations and their application and enforcement; (3) monitor, control and measure water resources, and determine needs and use of water resources; (4) monitor the quality of water resources and set relevant quality standards for water resources; (5) protect water resources from pollution and waste by issuing laws, rules and regulations and their application and enforcement. This Ministry will be involved in the overall monitoring of water quality and quantity of the Litani River and the evaluation of the project successes, as well as in the process of policy and legislation review.
Qaroun Watershed Municipalities	The municipalities are local administrations charged with the day-to-day management of all public works located inside their jurisdiction. Responsibilities include water and waste networks, waste disposal, internal roads, and urban planning. The municipalities will be used in the project for reforestation activities, as well as the coordination of the rangeland management.
Lebanese Agricultural Research Institute (LARI)	The LARI is a public institution dedicated to research for the development and advancement of the agricultural sector in Lebanon. It falls under the aegis of the Ministry of Agriculture but continues to enjoy administrative and financial autonomy. LARI will be involved in the project through providing advice on sustainable land management practices.
Wider Public (including local governments, local; communities, farmers, farmers cooperatives and NGOs)	The involvement of the wider public in ecosystem conservation is an important part of this project. The environmental NGOs experienced in certain aspects of the project will be involved as much as possible e.g. reforestation (Jouzour Loubnan, friends of the cedars of Bsharre Committee, etc.) forest fire prevention (Association for Forest development and Conservation); forest management and restoration (friends of the Tannourine cedars Nature Reserve, Mada, T.E.R.R.E.), organic farming and slow food (Greenline Association), protected area designation and management (Friends of Horsh Ehden, Al Shouf Cedars Society, Association for the Protection of Jabal Moussa, etc.), and nature based tourism development (e.g. trail development – Lebanon Mountain Trail Association, Baldati, etc.).

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

18. The proposed project adds value to a number of related initiatives as set out below:

The UNDP/GEF project *"Safeguarding and Restoring Lebanon's Woodland Resources"* is creating an enabling environment for reforestation and building capacity for Sustainable Land Management in Lebanon. Based on the lessons learnt from reforestation, the project, through the MoE, initiated a new modality by directly contracting municipalities and providing them with technical and financial assistance in reforestation activities. This resulted in the reforestation of a total area of 102 ha distributed across the country, with the involvement of 48 municipalities. The new approach raises awareness among the local communities on the benefits of establishing new forests in their regions, in addition to training them on proper reforestation techniques, relying on them in actual planting and consequent maintenance of the established forests. It provides additional income sources to these communities, as well as creates forest-related short and long-term job opportunities in their villages. The project has also initiated innovative trials on novel reforestation techniques – which are based on the selection of the critical aspects of reforestation, such as minimization of water for irrigation, efficiency of use of younger seedlings, etc. In the near future, this achievement might lead to the establishment of new visions and concepts, which should lead into an easier, faster, cheaper and more efficient reforestation in coming years. The modalities and results of trials will be important in the implementation of the larger reforestation program in the Qaroun Watershed. The UNDP/GEF Project *"Mainstreaming Biodiversity Management into Medicinal and Aromatic Plant (MAP) Production Processes"* is integrating conservation objectives into the gathering, processing and marketing of globally significant medicinal and aromatic plants. The main outcomes of the project are: 1) Appropriate collection methods ensure a viable long-term supply of raw materials of globally significant MAPs species, 2) Value-added processing and product improvement result in increased value of globally significant MAPs harvested in biodiversity-friendly manner; and (3) Supply chain framework strengthened for sustainable harvest of globally significant MAP species and awareness promoted for conservation-friendly MAP products. The proposed project will benefit from this project's experience in drafting legislation in ensuring sustainable harvesting practices are implemented and the branding of organic products. The UNDP/GEF Project *"Mainstreaming Conservation of Migratory Soaring Birds into Key Productive Sectors along the Rift Valley/Red Sea flyway"* – the overall goal of the project is to ensure that globally threatened and significant populations of soaring birds that migrate along this unique flyway are affectively maintained. To achieve this, the project is mainstreaming conservation management objectives into the hunting and land-use planning in Lebanon. A Technical Working Group will be established that ensembles technical experts on forest, sustainable agriculture and water management in Lebanon and all the related projects in Qaroun Watershed will be represented on this group. Regular meetings will be held between the different projects to leverage synergies.

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:

19. UNDP will provide US$300,000 in direct co-financing to this project in the form of a grant.

C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:

20. The project is in line with the United Nations Development Assistance Framework (UNDAF) of Lebanon, which aims to improve accessibility to and management of natural resources and enhance Lebanon's response to national and global environmental challenges. The project will contribute to this outcome as one of the key projects within the UNDAF period devoted directly to mainstreaming environmental considerations in sector and local-level strategies and plans, and improved integrated water resources management. This Project will also seek to address UNDAF priority in Lebanon on democratic governance and institutional development through the increased involvement of civil society in the governance of issues and the decentralization of natural resource management with the strengthening of local management institutions.

21. The project is also in line with UNDP Country Programme (2010 – 2014) Component III: Environmental Sustainability. This outcome focuses on the development of capacity in the Ministry of Environment and mainstream environmental considerations into other line ministries, strengthening the institutional capacity of stakeholders to support sound environmental decision-making and improve the enforcement of environmental legislation. Further, this outcome focuses on strengthening the promotion of sustainable land management through the Ministry of Agriculture in order to improve livelihoods, focusing on desertification-prone areas.

22. In the natural resources management cluster, UNDP has been playing a key role among all UN agencies and international organisations contributing to transformational changes in sustainable land management. The UNDP Country Office will assign three staff members to be responsible for the overall supervision of the project. The project will fall under the overall supervision of the Assistant Resident Representative and Head of the Energy and Environment Unit, with the direct support of a Programme Associate. Implementation support on financial, procurement and human resources will be provided by the office's operations staff. Finally, the project will be backstopped by a Regional Technical Advisor based in UNDP's Regional Centre in Bratislava, Slovakia.

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 template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(Month, day, year)*
Nazem El-Khoury	GEF Operational Focal Point	Ministry of Environment	23 November 2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
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