



# PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND:SCCF

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## PART I: PROJECT INFORMATION

Project Title:	Mainstreaming Climate Change Adaptation through Water Resource Management in Leather Industrial Zone Development		
Country(ies):	Pakistan	GEF Project ID: <sup>1</sup>	5666
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	130298
Other Executing Partner(s):	Sialkot Tannery Association Guarentee Ltd (STAGL) (Lead Executing Partner)  District Government Sialkot, Irrigation and Environment Departments, Provincial Government Punjab.	Submission Date: Re-submission Date:	2013-12-20 2014-01-21
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48 months
Name of parent program (if applicable): • For SFM/REDD+ <input checked="" type="checkbox"/> • For SGP <input type="checkbox"/> • For PPP <input type="checkbox"/>	N/A	Project Agency Fee (\$):	314,450

### A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCA-1 (select)	SCCF	400,000	400,000
CCA-2 (select)	SCCF	310,000	450,000
CCA-3 (select)	SCCF	2,600,000	13,600,000
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
Total Project Cost		3,310,000	14,450,000

### B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Reducing Vulnerability and Building Resilience through integration of Climate Change Adaptation into Urban Development						
Project Component	Grant Type <sup>3</sup>	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Mainstreaming Adaptation into urban and rural development planning	TA	1.1 Climate resilient urban development in Punjab/Sialkot district 1.2 Reduced vulnerability of rural, urban and	1.1.1.Incorporation of Climate Change Adaptation (CCA) into Punjab and Silakot district urban development plan	SCCF	460,000	300,000

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to the reference attached on the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

<sup>3</sup> TA includes capacity building, and research and development.

		other communities affected by climate changes (e.g. droughts, floods) through improved adaptation measures – water retention, flood management etc.	1.2.1. Development of flood management plan for Silakot district and the pilot Dugri drain in Sialkot.			
2. Capacity Building of targetted communities and leather buisness owners.	TA	2.1 Increased awareness among targetted community groups regarding Climate Change Adaptation concepts/practices.	<p>2.1.1. Awareness raising activities for target groups - rural and urban communities, representatives and policy makers, indutry and agriculture representatvies to sensitize all involved goups and better understand and incorporate CCA concepts into urban, rural and industrial planning and processes.</p> <p>2.1.2. Community based trainings for preparing them to better tackle the Climate Change challenges through water and energy conservation and flood management.</p> <p>2.1.3. Preparation of awerness material, senzitization and joint dissemination activities and workshops for all target groups to have better understanding of needs of each target group to build resilience to CC</p>	SCCF	320,000	300,000
3. Silakot district and Silakot urban plan implementation, dissemination of information, demonstration of safe, affordable and advance technology for water treatment and water conservation in the	Inv	3. Increased resiliance of the most vulnabre goup in rural and urban areas by introduction of advance, safe and affordable technology introduced for waste water treatment.	<p>3.1.1. Assessment of vrious alternatives especially water harvesting, appropriate effluent treatment technology for pilot Silakot tannery zone .</p> <p>3.1.2. Assistance with preparation of ToR</p>	SCCF	2,270,000	13,500,000

pilot Sialkot Tannery Zone.		<p>3.2 Safe water and byproducts of leather industry waste, available for agricultural use.</p> <p>3.3 Reduced water usage by leather industries in Sialkot Tannery Zone - more water available for other users e.g. agriculture</p> <p>3.4 Dissemination of information and expansion of the strategy and project benefits</p>	<p>and tender and technical evaluation for CETP. Supervision of work on CETP.</p> <p>3.1.3 Demonstration and practical training for water conservation, harvesting and pollution reduction technologies</p> <p>3.2.1. Explore opportunities to use treated water discharge system to make it useful and available for agriculture use.</p> <p>3.2.2. Segregation of useful byproducts of leather industrial waste, for further use by agriculture.</p> <p>3.3.1. Introduction of water conservation practices/technologies for tanneries to increase resilience of the most vulnerable groups.</p> <p>3.4.1 Project knowledge shared within Pakistan and other countries in the Sub-region through websites, guidelines and communication products</p>			
4 Quality Control Monitoring and Evaluation	TA	4.1 Quality control and efficient monitoring of project intervention to support adaptation by CC vulnerable communities	4.1. Timely semiannual reports prepared; midterm and final evaluation using Adaptation Monitoring and Assessment Tool of project activities completed	SCCF	124,000	150,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
Subtotal					3,174,000	14,250,000
Project Management Cost (PMC) <sup>4</sup>				SCCF	136,000	200,000
Total Project Cost					3,310,000	14,450,000

<sup>4</sup> To be calculated as percent of subtotal.

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

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
Private Sector	Sialkot Tannery Association Guarantee Limited (STAGL) through STZ project	Cash/In-kind	14,000,000
Local Government	Environment and Irrigation Departments, Government of Punjab	In-kind	150,000
GEF Agency	UNIDO	Cash	100,000
GEF Agency	UNIDO	In-kind	200,000
(select)		(select)	
(select)		(select)	
<b>Total Cofinancing</b>			<b>14,450,000</b>

**D. INDICATIVE TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (\$ (a))	Agency Fee (\$ (b) <sup>2</sup> )	Total (\$) c=a+b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
<b>Total Grant Resources</b>				<b>0</b>	<b>0</b>	<b>0</b>

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

<sup>2</sup> Indicate fees related to this project.

**E. PROJECT PREPARATION GRANT (PPG)<sup>5</sup>**

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	<u>Amount Requested (\$)</u>	<u>Agency Fee for PPG (\$)<sup>6</sup></u>
• No PPG required.	<u>-- 0--</u>	<u>--0--</u>
• (upto) \$50k for projects up to & including \$1 million	<u>                    </u>	<u>                    </u>
• (upto)\$100k for projects up to & including \$3 million	<u>                    </u>	<u>                    </u>
• (upto)\$150k for projects up to & including \$6 million	<u>90,000</u>	<u>8,550</u>
• (upto)\$200k for projects up to & including \$10 million	<u>                    </u>	<u>                    </u>
• (upto)\$300k for projects above \$10 million	<u>                    </u>	<u>                    </u>

**PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY**

Trust Fund	GEF Agency	Focal Area	Country Name/ Global	(in \$)		
				PPG (a)	Agency Fee (b)	Total c = a + b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
<b>Total PPG Amount</b>				<b>0</b>	<b>0</b>	<b>0</b>

MFA: Multi-focal area projects; MTF: Multi-Trust Fund projects.

<sup>5</sup> On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

<sup>6</sup> PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

## **PART II: PROJECT JUSTIFICATION**

### **A. PROJECT OVERVIEW**

A.1. Project Description. Briefly describe the project, including ; 1) the global environmental problems, root causes and barriers that need to be addressed; 2) the baseline scenario and any associated baseline projects, 3) the proposed alternative scenario, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline , the GEFTF, LDCF/SCCF and co-financing; 5) global environmental benefits (GEFTF, NPIF) and/or adaptation benefits (LDCF/SCCF); 6) innovativeness, sustainability and potential for scaling up

#### **A.1.1: Global environmental problems, root causes and barriers that need to be addressed:**

Climate change and the related climatic variability is found to have a close link to extreme events where majority of them turn into hydro-meteorological disasters (floods and droughts). With climate change the frequency and intensity of extreme events like **floods**, affecting the **agriculture** and livelihood of the communities, is one of main environmental challenge globally. These climatic extreme as well as the smaller events are destroying livelihoods and causing severe damages to homes, properties and natural resources of the already poor vulnerable populations living in those areas causing them to fall into a vicious cycle of poverty.

According to the Special Report on Extreme Events by the IPCC (SREX 2012) an increase in extreme weather events can be observed since 1950 in developing countries and the poor and disadvantaged groups are typically more vulnerable to and disproportionately affected by disasters. This trend also corresponds to Pakistan which suffers from recurrent hazards and extreme events caused by climate change and variability. This is the period where record highest temperatures have also been measured in Pakistan and also at the global level (IPCC 2007, PMD 2012).

Pakistan remains severely impacted by the negative effects of climate change (CC). The recent recurrences of extreme weather events displayed by drought and excessive floods (2010-2011) have raised the enormity of dealing with the issue urgently. The Pakistan Meteorological Department (PMD) data suggests that 5°C rise in temperature over the Indus Delta is expected by the end of 21st century. Due to this increase in temperature, domestic animal and crop water requirements in the country will rise 1.5 times over the present levels. Increased frequency of torrential rains, prolonged heat waves, frequent tropical cyclones, recurring flooding and persistent drought are the current phenomenal changes already being experienced in different regions of Pakistan. These climatic changes events will impact (positively and negatively) various socio-economic sectors of the country (e.g. water, agriculture, health, forestry, biodiversity and human health).

Monsoon is the major rainy season of Pakistan, which yields nearly 60% of total rainfall during the season (Jun-Sep), and therefore stands critical for agriculture, industry, drinking water and human health. In the future, the pressures of an increasing population will bring additional stresses on society and the environment, with serious implications for water resources, health and food security. The possibility that the precipitation distribution, especially monsoon rainfall, may become less stable and consistent (erratic but intensive) as a result of climate change will have serious consequences for Pakistan in the form of flash and river flooding that has already increased in recent years. Better planning and management of water channels can help reduce the expected losses due to climate change induced water-stress and effect on the livelihoods of vulnerable people.

#### **Agriculture:**

As evident from longer spells of heavy rains and devastating floods for the fourth consecutive year, Pakistan is experiencing the worst effects of climate change. These include serious threats to agriculture and water resources and, in fact, the country's economic fabric.

As a corollary, farmers and agriculture in Sialkot district and Punjab become extremely vulnerable to unpredictable changes in weather and their consequences. These changes include hotter summers, early cold spell, irregular monsoons, unexpected or untimely rainfall and growing frequency and intensity of floods.

As a majority of the population in Sialkot District (in Punjab Province) depend on agriculture and the major crops of the district are wheat, rice and sugarcane – all are vulnerable to the impacts of climate change. Other negative effects on agriculture come from local industry and urban development due to inappropriate planning (Sialkot District is traditionally a centre of sports goods, surgical instruments, tanning, leather goods/garments, cutlery)

### **Effects of Climate change on livelihood and communities:**

#### **Migration, urbanization and human distress**

During the last 25 years, Pakistan's urban population has been growing at more than 3% per annum (HDC 1999b). Urban settlements have grown at such a rapid pace that today nearly 30% of Pakistan's population is contained in less than 0.75% of its area (HDC 1999b). While these settlements have blossomed, basic infrastructure facilities have not kept pace. This has resulted in about one third of Pakistan's urban population living in squatter settlements (*Katchi Abadis*) that lack clean drinking water, sanitation, health, education, and employment opportunities (HDC 1999b). According to estimates the proportion of houses in urban areas that have access to piped drinking water has actually gone down from 68% in 1989 to less than 60% in 1997 (FBS, 1998). As climate change is likely to have a detrimental impact on rural livelihoods also in Sialkot district, therefore more people are likely to be forced to seek employment in urban areas. Thus, human migration towards urban areas is expected to rise, and such settlements are expected to proliferate in the future.

The rapid industrialization and rising population of Sialkot has caused serious threats to the earth and environment. Poisonous industrial and non-industrial waste is a real danger to the environment and management of the environment is deteriorating. Although the problem is getting attention, still the majority of the people are not aware of the dangers. This is threat especially to livelihood of rural communities.

Due to the lack of effluent treatment facilities, especially during floods, agricultural land is or may be contaminated and rural communities may lose their income. The tanneries also affect ground water and irrigation system, which has an adverse effect on farmers.

As part of its programme on urban planning and upgrading local industries in some of the potential climate change disaster region of Pakistan, the Government of Pakistan (GoP) has requested UNIDO to assist in integrating CCA strategies into the programme. The required interventions are aimed at addressing:

- i) **Policy barriers**, to ensure mainstreaming of CCA strategies at the local level planning for new developments, and also to better plan for disaster risk preparedness;
- ii) **Capacity barriers**, to create awareness among local authorities and communities to better face the climate change challenge;
- iii) **Technological barriers**, by making available the best and affordable technological solutions at local level for empowering the local communities to address the key CC induce risk, having in-house technological resources available.

The requested project intervention is consistent with the SCCF's strategy, cost effective activities that are integrated into national sustainable development and poverty reduction strategies; and adaptation activities that address the adverse impacts of climate change variability through investment and awareness raising in planning and coexistence of urban and industrial activities and agricultural activities. One of the priority is water conservation and use, and by increasing adaptive capacity to respond to the impact of climate change and variability in the project area through awareness raising and coexistence of industrial activities and agriculture through appropriate urban planning with pilot

industrial, sustainable water and land management.

“Mainstreaming Climate Change Adaptation through Water Resource Management in Leather Industrial Zone Development” is intended to support the integration of Climate Change Adaptation considerations (water conservation, water treatment, water flow and flood management, capacity building and awareness raising regarding CCA measures and incorporating CCA concerns into the urban development planning) to a baseline project already initiated in Punjab, Sialkot district of Pakistan for the leather industrial zone development. (See details of the baseline project at A.1.2).

The project aims to address the local policy, capacity and technological barriers present at the project targeted area, in order to demonstrate a model to be replicated in other parts of the country for achieving holistic results.

### **A.1.2: The baseline scenario and associated baseline project**

#### **Base line Scenario:**

Project related, potential impacts of the climate change are described below and would need concerted efforts for timely adaptation as these have important implications for the livelihoods of already poor and vulnerable populations.

#### **Agriculture:**

Agriculture is the mainstay of the economy and rural livelihoods. Out of a total area of 79.61 million hectares, 22.3 million hectares is devoted to farming. Of this, 19.12 million hectares are irrigated and 3.67 million hectares rainfed. The irrigated area consumes about 80% of the country’s freshwater resources, covers 84% of cultivated area and hugely contributes to the national food production. While the rainfed hilly and dry land agriculture covers 16% of the total cultivated area of the country and has little contribution in the national food basket.

The agriculture production systems of the country (**both irrigated and rainfed systems**) are **highly climate sensitive**. For example, temperature increases together with water unavailability have strong relationships to bio-physical and growth environment both for crops and livestock that have implications for agricultural productivity.

Possible impacts on crops in all the major regions of the country will be the shortening of growing season, heat stresses at sensitive growth stages (i.e. flowering and grain initiation stages), increased pest/disease incidences and overall yield losses.

#### **Water Resources:**

Pakistan lying in the arid and semi-arid regions is already today under water stress. Per capita fresh water availability in Pakistan that was 5600 cubic meters in 1947 is decreasing and by 2025 it is projected to decline to 834 cubic meters. It is expected that climate change impacts on water resources will be greatest in these regions (IPCC 2007). Serious efforts for water conservation and managing excess flows during summers would be needed.

**The effect of climate change on water resources is expected to be significant. In general, increase in temperature would not only increase water demand because of higher evaporation rates and droughts, but may also increase rainfall due to additional moisture supplied to the clouds because of higher evaporation from the sea surface. Similarly, increased rainfall may cause increase in magnitude of floods.**

Analysis for wheat showed that the irrigation water requirements for the crop by climatic zone will increase. Thus temperature increases coupled with variations in rainfall can increase the net irrigation water requirements sub-humid and semi-arid climatic zones. Under the scenario where rainfall decreases by 6% net irrigation requirements could increase by 29%.

Changes in climate especially increase in temperature coupled with decrease in rainfall would have a negative impact on the future projections of production of major crops. These effects would occur

primarily because of increased irrigation water requirements and hastened maturity leading to shortening of the growing season length. Climate change scenario would further affect the resource base in the Indus basin in terms of secondary salinization due to increased use of poor quality groundwater.

#### **Extreme events:**

Amongst the possible effects of climate change is the likelihood of increased frequency, and severity of occurrence of extreme events such as floods and droughts. Since Pakistan is particularly susceptible to such events, and has experienced large scale destruction on these accounts in the recent past, the analysis of possibility of occurrence of extreme events, and their impacts becomes all the more essential.

#### **Baseline Scenario with respect to the targeted area of the Project Punjab – Sialkot District:**

Majority of the population in Punjab/Sialkot District depends on agriculture and the major crops are wheat, rice and sugarcane. On the other hand urban development and industry and especially leather sector plays an important role and income opportunities. Sialkot is a city of about 1 million people within the urban area. It is one of the most important industrial cities in the province of Punjab and in Pakistan as a whole, especially for export oriented industries in the sectors of leather, sport equipment and surgical instruments. It has its own international airport, owned by the private sector. Situated along the Indus basin, Sialkot is among the most vulnerable in Pakistan to climate change in terms of water resources and hydro-related climate change effects<sup>7</sup>.

Sialkot has a rich aquifer under the city and the city's water supply comes from this, both as individual wells and as the source for the city's water supply system. Waste and surface water drainage covers part of the city but with many defects in the network. Sialkot has presently around 250 tanneries spread out in and around the urban area. The industrial waste water and solid waste is with few exceptions not treated and filters into the groundwater and waterways. Ground and surface water is highly polluted and not fit for irrigation or drinking.

**Currently climate change, urban growth and industry has had a negative effect on agriculture and most vulnerable group of population. Punjab and Sialkot district is traditionally a centre of industries for sports goods, surgical instruments, tanning, leather goods/garments, and cutlery, however agriculture will also remain an important sector especially in rural areas.**

#### **Urbanization:**

Pakistan's national communication report states that detrimental **impacts of climate change on rural livelihoods would result in more people being forced to seek employment in urban areas** (MoE 2003).

The process of urbanization and development of physical infrastructure in the city core have put pressure on the natural resources in the periurban and rural areas.

Urban and industrial uses increasingly compete for rural water as the former are able to extract water from deeper aquifers using expensive technologies that the locals cannot afford. The the demand and short supply for groundwater is further aggravated by shorter rainy seasons with reducing rainfall since the 1980s. The decline in rainfall increases the reliance on groundwater, forcing people to extract more. Thus, both urbanization and climate change act as multiple stressors on periurban and rural water sources. The dumping of urban and industrial wastes and wastewater to rural and periurban water bodies are another important aspect of how the ecological foot-print of the cities is borne by the periphery. This creates potential for conflict among rural-urban water users. These conflicts may exist between upstream-downstream users or among different categories of users, e.g. farmers and industry, or urban

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<sup>7</sup> UNEP 2008. Freshwater Under Threat : South Asia



residents and farmers in Punjab and especially Sialkot district. Proper urban and industry planning should rather create synergy between both sectors and reduce possible threats e.g. water degradation.

**Flood:**

Almost every year Sialkot District has to face onslaught of flood causing devastation and disruption of normal life activity. Floods negatively affect wellbeing of the population of the flood prone areas, their economic growth, and the social urgency for alleviating poverty prevailing in these flood affected areas are the overriding concerns. Adequate attention needs to be paid to these concerns from both national and regional perspectives. Furthermore, agriculture land get contaminated by various chemical and substances from urban and industrial areas during flooding.

**Environmental and health Hazards:**

Poisonous industrial and non-industrial waste from urban areas is a real danger to the environment, while mismanagement regarding environment is deteriorating the condition. A large number of industries discharge polluted effluents into stormdrains, open Nullahs. These include leather tanning units. The natural water courses in different have become a putrid and toxic gutter due to discharge of effluents.

Solid waste also finds its way into the water system. The chemical analysis reveals that there are traces of heavy metals such as chromium and nickel in the vegetable samples. Consequently, it is responsible for the many water borne diseases. The industrial waste is also used to irrigate some vegetable and fruit farms. These fruit and vegetables show a presence of metals and other toxins.

The leather industry is an important sector of the economy. Although having positive effect on employment rates, environmental effects are often neglected. Tanneries use and pollute large quantities of water; fertile soil goes wasted; and the poisonous substances used often lead to skin diseases for the employees. Inefficient water use in the industry reduces scarce water resources needed for agriculture. Currently around 250 tanneries are scattered around Sialkot (Pakistan) in 10 clusters without appropriate treatment facilities.

Due to missing policy and floods management measures and lack of effluent treatment facilities especially during floods agricultural land is contaminated. Also it may affect ground water and irrigation system which has an adverse effect on farmers. In the face of the anticipated frequent and more intense flooding event due to climate change, there is the need to introduce measure to build resilience against water stress and reduce the vulnerability of the populations in the Sialkot region who depend on the water resources for their basic livelihoods, agriculture and also the tannery industry which is a key component of its economy.

**The Baseline Project:**

**Urban Planning Sialkot. Punjab Cities Improvement Investment Program.**

The Punjab Government Urban Unit in Lahore is working together with the Sialkot Tehsil administration on creating a strategic development plan for Sialkot, including the establishment of the Sialkot Tannery Zone (STZ). The city is one of several cities chosen for a Punjab Cities Improvement Investment Program supported also by the ADB and UNHABITAT. A very recent study, Urban Planning Sialkot, done by GAK consultants in January 2011 has information and land-use planning suggestions relevant to the Tannery Zone project. UNIDO study prepared in 2011 provides recommendations regarding urban planning in connection with planned leather industrial zone.

The project of creating the new Sialkot Tannery Zone, STZ, is a project in partnership between the private sector, the Tannery industry itself and the government of Punjab. Sialkot has a private sector of

entrepreneurs with much initiative. The private sector has managed to establish an own airport with international traffic, a dry port and to improve the roads of the city. That the private sector is the driving force behind creating the Tannery Zone, TZ and dealing with the industries' environmental problems is an important factor for the project. It is also pushed by evolving environmental demands and environmental legislation from the government authorities.

With climate changes related variability on the livelihoods of vulnerable rural people particularly agriculture, it is expected that population will be forced to seek employment in urban areas. As such, one of the priorities of the Punjab Government is proper urban planning ensuring a sustainable coexistence between urban and industrial development on one hand, rural and agriculture on the other hand, incorporating CC adaptation measures. .

Proper urban planning in the context of Punjab and Silakot district should focus on:

- Larger urban planning (floods management, water management and retention, housing etc.)
- Industry development with pilot industrial zone – Sialkot Tannery Zone with the model adaptation measures – flood management, water conservation, water effluent treatment, water retention etc., in order to replicate similar approach in other cities.

Concentrating the Tanneries in one place will make it possible to provide them with a Common Effluent Treatment Plant (CETP) and a common way of taking care of the solid waste and thus make the tannery production more environmental friendly and ensure water stress resilience is built in the district. It will also be possible to establish adaptation measures, flood management, water harvesting, water and sewerage infrastructure, a fat extraction plant and a chrome recovery plant and other common facilities in the area and make the tannery industry as a whole better prepared for modernisation of production.

### **A.1.3: The proposed alternative scenario, with a brief description of outcomes and components of the project:**

The requested project intervention is consistent with the SCCF's strategy, cost effective activities that are integrated into national sustainable development and poverty reduction strategies; and adaptation activities that address the adverse impacts of climate change variability through investment and awareness raising in planning and coexistence of agricultural, urban and industrial activities. One of the priority is water conservation and use, and by increasing adaptive capacity to respond to the impact of climate change and variability in the project area through awareness raising and coexistence of industrial activities and agriculture through appropriate urban planning with pilot industrial, sustainable water and land management.

“Mainstreaming Climate Change Adaptation through Water Resource Management in a pilot Leather Industrial Zone Development” is intended to support the integration of Climate Change Adaptation considerations (water conservation, water treatment, water flow and flood management, capacity building and awareness raising regarding CCA measures and incorporating CCA concerns into the urban development planning) to a baseline project already initiated in Punjab, Sialkot district of Pakistan for the leather industrial zone development. (See details of the baseline project at A.1.2).

The project aims to address the local policy, capacity and technological barriers present at the project targeted area, in order to demonstrate a model to be replicated in other parts of the country for achieving holistic results.

**The process of urbanization and development of physical infrastructure in the urban areas put pressure on the natural resources in the rural areas. The urban development and industry relocation programme is much more complex than moving some production facilities to a new location:** it is associated with a wide range of social, human, economic, ecological, logistic and technical problems requiring satisfactory solutions and strong coordination between all the stakeholders and GOP.

The proposed SCCF project will provide technical assistance for the overall urban development of

industrial zones and its coexistence with rural areas. The project will build capacities to enable the local government partners incorporate CCA concerns into city urban planning. It will also develop capacities of the local communities to better face the Climate Change Challenges and to take benefit from the development initiatives carried out in the region.

The project will also deploy and transfer the relevant adaptation technologies for water conservation and water retention within urban and industrial zone, to build water supply resilience among the vulnerable population in the Sialkot district. Capacities will be built for: flood management including for the dugri drain which also provides water for agriculture use, to overcome the water overflow during flood season; effluent treatment plant management of the discharge of treated water into the dugri drain. In addition water conservation techniques will be incorporated in the development of tannery/leather zone and individual buildings and tannery/leather units. The proposed project will also focus on the overall urban planning by incorporating CCA concerns into city urban plan through the involvement of local government partners. The project components are further described in table below:

Sr. No	Component	Outcome	Description
1	Mainstreaming Adaptation into Development Planning	1. Climate resilient urban development in Sialkot City  2. Reduced vulnerability of flood effected communities through improved flood management.	The project will work on incorporating climate change adaptation concerns into the city urban planning/industrial planning in collaboration with local government partners, in order to ensure future development to be climate resilient from start.  The project will also focus on developing flood management plan for the drains taking effluent discharge, or the treated water discharge, in order to support the irrigation department of the government for better handling the flood management scenario in future.  Measures to reduce impact of floods will be incorporated into policy and strategy planning for urban development based on this pilot project
2	Capacity Building of targeted communities, policy makers, rural communities, industry and leather business owners.	Increased awareness among targeted groups: rural community - policy makers and industry regarding Climate Change Adaptation concepts/practices .	The project will build the local capacities for water stress resilience by training the policy makers, district representative, rural communities, industry representatives, industry and tannery owners regarding the climate adaptation measures, working of ETP and practices for water conservation.  The project will also train the potential flood affected communities to build their resilience towards happenings of climate change.  The project will also spread the awareness through dissemination of awareness material.
3	Demonstration of safe, affordable and advance technology for water treatment and water conservation	1. Increase resilience of communities to impact of climate change -advance, safe and affordable technology introduced for	The project will provide a roadmap and advise on proper urban planning taking into account development and climate changes and necessary synergy between urban – industry and agriculture – rural areas. It will propose and implement measures e.g. water harvesting, water conservation and water retention in order to adapt to expected climate changes and provide sustainable development in all key areas.

	in Sialkot Tannery Zone.	<p>waste water treatment.</p> <p>2. Safe water and by-products of leather industry waste, available for agricultural use (e.g. sludge usable as fertilizer).</p> <p>3. Increase water availability for local communities – agriculture, urban and industry use by reduced water usage by leather industries in Sialkot Tannery Zone</p>	<p>The project will provide technical assistance through the expertise of UNIDO in industrial sector, for the establishment of effluent treatment plant (assistance with preparation of the tender for ETP and evaluation of offers) with special emphasis on prevention of contamination of land in case of floods and taking into consideration of possible risks with floods and CC to avoid damage of ETP and technology due to flooding. Proposed ETP should be sufficient to handle also expected higher levels of rainfall and same time reduce operational costs using e.g. modular design.</p> <p>It will also explore and assess possibilities the safe water discharge to the durgi water drain and safe water to be available for irrigation. Some of the byproducts of leather industry waste may also be collected and used for agriculture sector.</p> <p>The project will introduce water harvesting and conservation practices like installation of water meters to each tannery unit for controlled water use.</p> <p>The project will promote and introduce solar water heating system.</p>
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Process stage	Clean Technology	Basis of the technology				Benefits
		More efficiency use of chemicals	New chemicals	New equipment	Recycling of floats	
Unhairing liming	Use of enzymatic products		X			Reduce 25 – 35% of chemical and 20 – 30% of water use
	Hair recovery process		X	X		Reduce 40% of BOD and COD, 20% of SS
	Recycling of unhairing liming floats	X		X	X	Reduce 25 – 35% of chemical and 30 – 50% of water use
Deliming	CO <sub>2</sub> deliming		X	X		Reduce N and NH <sub>4</sub> <sup>+</sup> content in the effluent which will reduce effluent treatment cost.
	Ammonia free deliming	X	X			Reduce N and NH <sub>4</sub> <sup>+</sup> content in the effluent which will reduce effluent treatment cost.
Pickling	Recycling of	X		X	X	Reduced TDS content by 10-

	pickling bath					15% and water consumption by 5%
Tanning (Cr)	Recycling of chromium baths	X		X	X	Reduced Cr content and water use by 2-5%
	Chromium recovery	X		X		Reduced production costs and 90-98% of Cr in effluents
	High chromium exhaustion	X	X			Reduce 25% of Cr offer, 60% Cr content in spent chrome liquor, reduced production costs
Finishing	Water based top coats		X			
Water management	Better water utilization	X		X	X	Water consumption reduced up to 30% by process control, recycling, new technologies as e.g. "aquamix"
General	Better process control	X				Reduced consumption of chemicals, and pollution
Energy	Use of SWHS, building orientation	X		X		
By-products	Fertilizers			X		Use of by-products for fertilizers to reduce necessity of disposal site
By-products	Tallow-recovery	X		X		Use of fleshings for tallow recovery
Effluent Treatment		X	X	X		Modular design of ETP, taking into account necessity to use treated effluents for irrigation, possible risks of increase volume of rainfall, and other variables.

More information about each technology is on [www.leatherpanel.org](http://www.leatherpanel.org); *Chrome Management In Tanyard (UNIDO 2000)*; *Scope to Reduce Pollution from Leather Processing (UNIDO 2002)*; *Introduction to the Treatment of Tannery Effluents (UNIDO 2012)*

#### **A.1.4: Incremental/additional cost reasoning and expected contributions from baseline, the GEF scf and cofinancing:**

The baseline project of establishing the Sialkot Tannery Zone is a mega development project based on public private partnership amounting to around 47 Million USD, comprised of the land cost, building of infrastructure, utilities, treatment facilities, and relocation of tanneries. The proposed SCCF project will provide the required assistance to the baseline project with regard to addressing CCA concerns into the complete project. Starting from planning to the development of treatment plant, and to take care of the relevant potential CCA impacts to be generated by the establishment of STZ in the area. The additional cost of USD 1.9 Million will barely meet the requirement for addressing the CCA concerns. The cofinancing mentioned in the proposed project's cofinancing details, will be part of the baseline project financing which is allocated for water treatment plant establishment. During the PPG stage a detailed vulnerability analysis of the Sialkot tannery industry on the communities will be conducted. The proposed SCCF project activities are as follows:

- i) Through stakeholder workshops, awareness will be raised and capacities built within the STZ programme to identify climate change induced risk to the vulnerable populations in the Punjab/Sialkot district and measure to reduce the impact of CC.
  - ii) Community based training events on adaptive technologies including water conservation and water retention will be conducted for the agriculture dependent communities, the small-scale traditional tanneries as well as the larger tanneries within the STZ.
  - iii) Training events will be organized to enable the urban planners as well as the local communities better manage flooding events
  - iv) To promote water supply resilience strategies, water harvesting, conservation, effluent treatment plant management technologies will be deployed in the STZ project
- The requested SCCF contribution is essential to make the baseline project a climate friendly project, and to take care of the surrounding communities from the climate change impacts. The baseline project may otherwise be contributing towards environmental degradation without following the water conservation and water management practices.

#### **A.1.5: Adaptation benefits (SCCF):**

The proposed project will contribute to the following adaptation benefits in the target region:

- Increased resilience of urban and rural communities to climate changes and policy, strategy for climate change adaptation measures

Increased availability of ground water due to reduced use of water in the leather processing

- Decreasing the agriculture losses due to the safe water availability rather than contaminated water discharge into irrigation drains.
- Decrease the health losses due to the domestic and agricultural use of contaminated water.
- Study modelling future rainfall patterns and climate variations with objective to prepare proper design of utilities within planned industrial zone.
- “Modular” design of Effluent Treatment Plant and space reserved for possible expansion will prevent potential future climate changes and variability.
- Increase the awareness and adaptive capacities of the local communities to deal with floods and other disasters.
- Increase the institutional capacities by training them on the CCA measures and practices.
- Providing base for climate resilient development in future, by integrating CCA concept into city planning.

In addition Sialkot lies along the Indus Basin, safe guarding its water resources through the water conservation, water retention and industrial waste management which this project is proposing, will invariably benefit the population of almost 215.8 million that the basin supports.

#### **A.1.6: Innovativeness, sustainability and potential for scaling up:**

**The project is innovative as it is of first of its kind in Pakistan and it is unique in that it addresses the CCA concerns of the agriculture sector which are further compounded by industrial sector expansion.** The project aims at resolving the issues in an effective manner.

The project is also sustainable in that the initiative will be maintained by the baseline project partners STAGL, being the dedicated private sector organization established for managing the establishment and functioning of Sialkot tannery Zone. Also as provincial and district governments are also on-board,

hence they will own the project after the completion of its life.

The project has a huge potential for scaling up and replication, as not only the other industrial sectors in Sialkot but in other region and countries or parts of the Pakistan are already interested to have such dedicated setup of cleaner expansion for their industries too.

**A.2. Stakeholders. Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:**

Sr. No	Stakeholder	Role
1.	UNIDO	Being GEF Implementing Agency, will provide implementation support through the project. UNIDO will lead the process of project preparation.
2.	Sialkot Tannery Association Guarantee ltd. (STAGL)	Being the executer of baseline project, and co financers of proposed SCCF project, will be an important partners and stakeholders for the technology transfer component of the water treatment plant. They will provide relevant input for the project preparation with regard to their component.
3.	Environment Department, Provincial Government Punjab.	They will provide their technical input during project preparation and facilitate the implementation of the project.
4.	Irrigation Department, Provincial Government, Punjab.	They will provide their input regarding flood management for the water drains and irrigation channels being affected of industrial waste.
5.	Sialkot Chamber of Commerce and Industry	Being the lead partner of the baseline project, they will provide their support in ensuring participation and input of the industry owners for the planning process.
6.	Federal Ministry of Industries	Their input and involvement will be essential for learning from the experience of other industries nationally and also to identify the scope for replication and scaling up of the project.
7.	Federal Ministry of Commerce	They will be an important funding partner to the baseline project and can contribute in planning for this SCCF project document.
8.	Federal Climate Change Division	To get the input regarding national climate change concerns and to know about the practices of other GEF related initiatives.
9.	Industry Owners	They will provide input in the planning phase regarding their experiences, requirements and concerns to be timely addressed at the planning stage.
10.	Agriculture dependent communities, including farmers.	For incorporating their concerns into planning and also during the project implementation. Farmers and agriculture communities as one beneficiary group will be actively involved in the project.
11	NGOs and non-profit organizations	NGOs and various non-profit organizations will be involved in the project preparation (e.g. review EIA and other plans), and to represent various groups e.g. women, youth, farmers, various communities etc. It is expected also active participation of various NGOs in project replication. Various tools and studies prepared by the project will be disseminated to interested organizations for further use. UNIDO is actively working with various local and

		international NGOs. Similarly there will be cooperation with other organizations such as IULTCS, LWG, ICT etc., which have also very useful tools for such projects. Cooperation is envisaged in organizing special Experts Groups Meeting and various consultations
12	Technology providers	Technology providers will be also engaged in the project to present their latest developments and to provide support for implementation of the Best Available technology.
13	Additional partners	Additional organizations, group and partners e.g. WWF, implementing similar project in Sialkot region will be engaged. Activities will be coordinated with these organizations to avoid unnecessary overlapping of some activities and also to create synergy and increase impact of activities.

**A.3 Risk. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):**

No	Potential Risk	Level	Risk mitigation measure
1	Social risk: reluctance of the industrial owners to shift on a climate resilient development. As this brings first thought of additional cost to be added to their investments.	Low-medium	Project, through its awareness raising and capacity building initiatives will try to shift the thinking by introducing them with the incentives of shifting towards greener and cleaner production. Also the baseline project's financial contributions will reduce the pressure from land owners to pay high development costs associated with treatment facilities establishment.
2	Climate risk: The natural disaster in form of floods may interrupt the project's progress.	Medium-high	The project as an integral component will work on flood management plan and building resilience in target communities and area to bear the minimum losses in case any such incidence occurs.
3	Investment and operational costs for common facilities (e.g. Central effluent Treatment Plant, Solid Waste Conversion) etc.	Low-medium	The project partners will work on appropriate business plan to cover necessary operational costs for common facilities. Experience gained from similar project and facilities will be used to find appropriate model for this.
4	Coordination of the project: establishment of leather industry park is challenging project and requires a lot of coordination and involvement of many stakeholders. Slow response of some key actors may hinder the project implementation	Low-medium	All project stakeholders are committed and understand the project objective. UNIDO has a broad experience in implementing similar projects and leather industry parks and this may help to overcome possible problems with the project planning and implementation. In order to coordinate and execute the project smoothly Project management Unit will be created to coordinate all



			stakeholders and to take into account all needs of all groups (industry, agriculture, communities, women, NGOs etc.)
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**A.4. Coordination. Outline the coordination with other relevant GEF financed and other initiatives:**

No current GEF’s SCCF Project exists in Pakistan and for other GEF trust fund projects, none of them is targeting the Sialkot city or tannery industry. But the project will definitely coordinate during the planning phase, with other GEF trust fund related initiatives being implemented in Pakistan, with regard to industrial sector or climate change, in order to learn from their experiences.

The project will also keep liaison with other industrial waste water treatment facilities available in the country, specially the project in Karachi and Kusoor cities to learn from their experiences, achievements and problems being faced, in order to better plan and implement this project.

Coordination and synergy with other currently on-going projects (e.g. TRTA EU co-funded project, Vocational Training to Revive Leather Industry in Sialkot under Pakistan Technical&Vocational Education & Training Reform) will provide an opportunity to tools and results of these projects.

The project will liaise with EU – funded SWITCH Asia projects targeting Sialkot and similar cities – SCI Pakistan and especially City-Wide Partnership for Sustainable Water Use and Water Stewardship Programme in Punjab's implemented by WWF and other partners.

Description of the consistency of the project with:

**B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAs, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:**

The proposed project is in line with the national priorities identified under First National Communication, National Capacity Self Assessment (NCSA) and National Climate Change Policy. (Text in **bold** reflects the project relevance and justification as per national documents”

**National Communication:**

The Pakistan Initial National Communication on Climate Change (2003) identifies that the country has low institutional and financial capacity to adapt to climatic changes and therefore stresses on the need to **improve the adaptation capability** as the highest priority for the country. It also suggests that adaptation strategies for Pakistan shall concentrate on **reducing vulnerability to current climatic variability and events**, as well as adopting policies for ensuring long-term ecological, human and economic development and thus to enhance the overall resilience of the country. It further adds that climate change is expected to have significant impacts on **agriculture** due to heat stress caused by increased temperature, possible shifts in spatial boundaries of crops, changes in productivity potential, **changes in water availability and use**, and changes in land use systems.

**National Capacity Self Assessment:**

Under the country profile, NCSA describes the current degraded environmental situation as “..existing water resources are under threat due to rapid degradation, soil erosion, deforestation and **untreated discharge of municipal and industrial wastes**.”

Under the System capacities gap identification, the NCSA, highlights the need for **technological shift and latest technology availability** for to respond to the complex issue of climate change.

Under the Strategic recommendations, NCSA insists on implementing the national drainage strategy to **reduce effluent generation at source and dispose it off in environmentally sound manner**. Talking about the Vulnerability and adaptation, the NCSA also identifies the need for **water resource management**, irrigation system to be improved to reduce water losses, improve **water conservation** and **promotion of re-use of treated water**.

### **National Climate Change Policy:**

NCCP identifies the extreme weather events like **floods to be an important climate change threat** to Pakistan.

The NCCP identifies policy measures for water resource management as:

“Ensure water conservation and reduction in irrigation system losses..”

“Ensure recycling of waste water through proper treatment and its reuse in agriculture, artificial wetlands and ground water recharge etc”

“Develop and extend **water efficient technologies and techniques** for sea water utilization, **water recycling** and avoiding wasteful use of domestic and drinking water”

The CC policy identify among others, these policy measures for disaster preparedness in Pakistan:

“**Enhance capacities to address the impacts of floods** by strengthening relevant agencies” and

“Develop a mix of strategies for **flood management**, which may include use of dams for managing flood peaks, retarding basins and providing escape channels etc”.

### **B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:**

#### **Eligibility Criteria and Priority:**

Pakistan is signatory to UNFCCC and a non-Annex1 party and hence eligible for SCCF funding.

As per the UNFCCC guidance regarding specific national and regional development priorities, article 4 describes among others, this commitment to be fulfilled by Pakistan as signatory to the convention:

“Cooperate in preparing for **adaptation to the impacts of climate change**; develop and elaborate appropriate and integrated plans for coastal zone management, **water resources and agriculture**, and for the protection and rehabilitation of areas affected by drought and desertification, as well as **floods**.”

“Promote and cooperate in education, **training and public awareness related to climate change** and encourage the widest participation in this process”.

As per the Programming priority of SCCF, water resource management and agriculture does fall under the priority areas.

#### **GEF Fund(s) Strategy:**

The project is in line with the goal of Adaptation Strategy “to support developing countries to increase resilience to climate change through both immediate and longer term adaptation measures in development plans, policies, programs, projects and actions”. It is relevant to key areas listed for adaptation under the SCCF, Water resources management; Infrastructure development; Agriculture and Health.

The project contributes to CCA-1 in terms of reducing vulnerability to CC in developmental sector by mainstreaming CCA strategies in the industrial, town and urban planning. The project will also contribute to objective CCA-2 on “Increasing adaptive capacity” in that, the project will provide opportunities for leather industry in Sialkot district to strengthen adaptive capacities to reduce the risk of CC induced flooding through efficient water resource management and treatment of industrial waste which aggravates the effects of flooding. Lastly, it contributes to CCA-3 by supporting the demonstrations and deployment of ETP to build water stress resilience and safeguard the water resources.

### **B.3 The GEF Agency’s comparative advantage for implementing this project:**

UNIDO has proven worldwide experience in introduction of cleaner leather production techniques, occupational safety and health (OSH), measures setting up CETPs, solid waste handling, starting byproduct manufacturing, managing leather/products estates and organizing tannery relocation project. Ministry of Commerce, MOI and other local authorities, including the tanner society need assistance to ensure smooth relocation in order to learn from best practices, as well as guidance in introduction of water management, cleaner production techniques, operating and managing common facilities which UNIDO can provide using their technical expertise in the area.

UNIDO has been involved in planning and setting several leather industrial parks including recommendations on urban planning and development (Bangladesh, India, Sri Lanka etc.) Environmental protection and pollution control directly related to leather processing and leather products manufacturing through the:

- Implementation of cleaner tanning methods such as water conservation, hair-save un-hairing, float recycling and/or chrome recovery, improved efficiency of dyeing and finishing, use of safe chemicals/auxiliaries, reducing salinity etc.
- Waste minimization and conversion of solid wastes into saleable by-products.
- Design, construction, and operation of tannery Effluent Treatment Plants (ETPs) with particular emphasis on common, low cost systems for SME clusters (CETPs).
- More than 150 ETPs for the (leather) industry assisted by UNIDO
- Handling and safe disposal of solid wastes and sludge.
- Promotion of the eco-labelling concept.


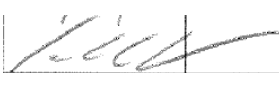
**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**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](#)).

<b>NAME</b>	<b>POSITION</b>	<b>MINISTRY</b>	<b>DATE (MM/dd/yyyy)</b>
Muhammad Khalid Siddiq	Joint Secretary/ GEF Focal Point	<b>FEDERAL CLIMATE CHANGE DIVISION</b>	

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

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

<b>Agency Coordinator, Agency name</b>	<b>Signature</b>	<b>DATE</b> (MM/dd/yy)	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Mr. Philippe Scholtès, Officer-in-Charge, Programme Development and Technical Cooperation Division - PTC, UNIDO GEF Focal Point		01/21/2014	Ivan KRAL, Industrial Development officer, UNIDO Headquarters, Vienna 	+4326026 3762	<a href="mailto:i.kral@unido.org">i.kral@unido.org</a>