



PROJECT IDENTIFICATION FORM (PIF) ¹

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	Sustainable Agriculture and Climate Change Mitigation Project		
Country(ies):	Uzbekistan	GEF Project ID: ²	
GEF Agency(ies):	WB (select) (select)	GEF Agency Project ID:	P127486
Other Executing Partner(s):	Ministry of Agriculture	Submission Date:	2011-09-13
GEF Focal Area (s):	Multi-focal Areas	Project Duration (Months)	36
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>		Agency Fee (\$):	1,269,900

A. FOCAL AREA STRATEGY FRAMEWORK³:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-1 (select)	Outcome 1.1 - Technologies successfully demonstrated, deployed, and transferred	Output 1.1 - Innovative low-carbon technologies demonstrated and deployed on the ground	GEFTF	1,000,000	1,000,000
CCM-2 (select)	Outcome 3.2 - Investment in renewable energy	Output 3.2 - Renewable energy capacity installed	GEFTF	5,304,500	18,500,000
CCM-3 (select)	Outcome 3.3 - GHG emissions avoided	Output 3.3 - Electricity and heat produced from renewable source	GEFTF	5,304,500	18,500,000
(select) LD-1	Outcome 1.2 - Improved agricultural management	Output 1.2 - Types of Innovative SL/WM practices introduced at field level Output 1.3 - Suitable SL/WM interventions to increase vegetative cover in agroecosystems Output 1.5 - Information on SLM technologies and good practice guidelines disseminated	GEFTF	1,090,000	34,500,000
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				12,699,000	72,500,000
Project Management Cost ⁴			(select)	0	2,500,000
Total Project Cost				12,699,000	75,000,000

B. PROJECT FRAMEWORK

¹ It is very important to consult the PIF preparation guidelines when completing this template.

² Project ID number will be assigned by GEFSEC.

³ Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

⁴ GEF will finance management cost that is solely linked to GEF financing of the project.

Project Objective: Promote the use of renewable energy for the provision of rural energy services and improve flows of agro-ecosystem services to sustain livelihoods of local communities in Uzbekistan

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Investments for sustainable technologies	Inv	<p>Low-carbon technologies successfully demonstrated and transferred and GHG emissions avoided in rural areas</p> <p>Renewable energy technologies begin to be adopted in rural areas throughout the country</p>	<p>a) Demonstrations of off-grid renewable energy technologies in rural areas, including bio-gas digestors, small solar and biomass (dissemination of technologies supported through workshops under Comp 3 below) (\$1M)</p> <p>b) Matching grants to implement renewable energy technologies in agribusinesses and on farms (\$8M)</p>	GEFTF	9,000,000	36,700,000
2. Irrigated land degradation mitigation.	TA	<p>Improved management of agricultural systems and water resources is achieved through the adoption of technologies and good practices for irrigated land</p> <p>Degraded irrigated lands in the baseline project raions are improved; more efficient water use practices adopted; agricultural productivity increased</p>	<p>a) Technologies and management approaches for controlling and reversing irrigated land degradation introduced in 7 raions; number of hectares improved (\$1M)</p> <p>b) Farmer Field School approach delivers knowledge and skills to farmers and local communities to promote sustainable land management practices (\$0.09M)</p>	GEFTF	1,090,000	33,200,000
3. Project technical support and advisory services.	TA	<p>Renewable energy, energy efficiency and land degradation mitigation technologies and practices adopted; legal framework enables introduction of renewal energy technologies; renewable energy technology and sustainable land management support businesses are established and functioning</p>	<p>a) Advisory services for analysis and development of the legal and regulatory framework to support broader adoption of renewable energy technologies;</p> <p>b) workshops for information dissemination for the technologies that will be demonstrated and to publicize the RESP-2 credit line;</p> <p>c) energy audits for agribusinesses;</p> <p>d) capacity building for carbon accounting, mobile data systems, and sustainable agricultural practices (focusing on irrigated land);</p>	GEFTF	2,609,000	2,600,000

			e) advisory services and twinning arrangements for development of renewable energy technology and sustainable land management support businesses			
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
Sub-Total					12,699,000	72,500,000
Project Management Cost ⁵				(select)	0	2,500,000
Total Project Costs					12,699,000	75,000,000

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

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
GEF Agency	World Bank IDA credit	Soft Loan	67,960,000
National Government	Government of Uzbekistan	In-kind	6,580,000
Private Sector	Project beneficiaries	In-kind	460,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
Total Cofinancing			75,000,000

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
WB	GEF TF	Climate Change	Uzbekistan	11,609,000	1,160,900	12,769,900
WB	GEF TF	Land Degradation	Uzbekistan	1,090,000	109,000	1,199,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				12,699,000	1,269,900	13,968,900

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.

⁵ Same as footnote #3.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1 the [GEF focal area/LDCF/SCCF](#) strategies:

The project promotes effective GHG emissions control and sustainable land use and is consistent with two main focal areas of GEF, Climate Change Mitigation and Land Degradation. The project is in line with the Climate Change Mitigation focal area strategy and will contribute to Strategic Objective 3 “promote investment in renewable energy technologies,” with emphasis on agri-businesses and rural communities. While the energy sector is responsible for greatest volume of GHG emissions (except methane), extensive support to implementing large scale solar to decrease reliance on gas-fired power plants is currently being undertaken by the Government in cooperation with ADB. The proposed project will directly respond to the strategic goals of the GEF-5 strategy in the Climate Change Mitigation focal area, namely promoting the use of renewable energy for the provision of rural energy services and supporting new low-GHG emitting energy technologies. The project addresses priority needs identified by the Government and in consultation with key donors, and puts in place legal, policy, technological and business development measures to mainstream renewable energy in Uzbekistan’s energy sector by focusing on the introduction of relevant technologies and capacity building in rural areas. Therefore, the Project is well aligned with the Climate Change Focal Area.

The project also responds to the GEF’s Objective 1 in the Land Degradation focal area to “maintain or improve flows of agro-ecosystem services to sustain livelihoods of local communities.” Rural communities in Uzbekistan will be supported to adopt, transfer and replicate sustainable agriculture and land management practices aimed at restoring and improving irrigated land while increasing economic opportunities for the rural population and improving environmental conditions. Finally, the project will carry out cross cutting activities to strengthen the capacity of the Uzbekistan legal and institutional system to develop and implement reforms to respond to challenges of climate change and land degradation in the agricultural sector.

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

N/A

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.:

The Project is in full accordance with key national strategies that were articulated in the Second National Communication on Climate Change (November 2010), which was prepared in accordance with the United Nations Convention on Climate Change. The First National Communication of the Republic of Uzbekistan was prepared and submitted to the Fifth Conference of Parties to the Convention in Bonn in 1999. The Second Communication highlights the problems associated with climate change as a national priority, and notes particular challenges in implementing GHG mitigation measures and meeting international obligations under UNFCCC. Given the importance of the agriculture sector

overall in Uzbekistan and the country's vulnerability to climate change, the Second Communication also emphasizes land degradation in agriculture, stating that "... the country faces a number of problems [in agriculture] due to lack of water resources and land degradation. Over 50% of land resources are used for agricultural purposes..... Irrigated area of Uzbekistan is 4.2 million hectares of land with low productivity and high salinity rates. Wind and water erosions are widespread. Arable lands located in the lower reaches of the rivers are especially saline..." Water scarcity is expected to be further exacerbated by a warming climate.

The Republic of Uzbekistan ratified both the UN Framework Communication on Climate Change and the Kyoto Protocol in 1993. The country continues to carry out wide-scale awareness raising activities on climate change to promote mitigation, contribute to the reduction of climate change risks, and build resilience to the projected impacts of climate change in the country.

With respect to land degradation, the project also supports the priority actions identified in the National Action Program to Combat Desertification (NAPCD, 2002) and the objectives of the Central Asia Countries Initiative for Land Management (CACILM).

The CACILM Multicountry Partnership Framework (CMPF) is one of six GEF country pilot partnerships (CPPs) on sustainable land management at different stages of implementation. CACILM is a multi-country and multi-donor, long-term program in the spirit of UNCCD aimed at restoring, maintaining and enhancing productive functions of land in the five countries of CA. In each participating country, National Programming Framework (NPF-2006) on Sustainable Land Management (SLM) forms its strategic basis. The overall goal of the NPF in Uzbekistan is to combat land degradation through the strengthening and mainstreaming of sustainable land management approaches among all land management stakeholders. Attaining this goal will result in stabilized/ improved ecological integrity and better rural living standards.

This proposal addresses the targets, defined in renewed NPF-2009 CACILM for program areas «*Adaptation of agriculture to climate change (climate-resilience management)*» and «*Integrated resource management*», and supports Uzbekistan's efforts towards climate change mitigation and adaptation to drought under global conventions of UNCCD and UNFCCC, respectively.

The proposed project also builds on and supports the national **Welfare Improvement Strategy of Uzbekistan (WIS)** for 2008 to 2010, which emphasizes rural economic development.

Furthermore, the project is also consistent with the outline of the new Country Partnership Strategy (CPS) currently under development by the World Bank and Uzbekistan for FY12-15. The overall goal of the CPS will be to support efficiency, competitiveness, diversification and social equity policies, with continued attention to the agriculture sector. A key focus of the Bank's partnership strategy in agriculture and rural development is to help the Government in its efforts to address the issues of national land resource degradation. The project will contribute to the CPS by addressing climate change mitigation and the environmental challenge of land degradation to ensure sustainable agriculture development and reduce poverty. Finally, the 2nd Rural Enterprise Support Project (RESP-2), which the GEF grant will co-finance, was included in the Country Partnership Strategy for the Republic of Uzbekistan prepared for the fiscal years of 2008-2011.

The project is also aligned with **the GEF Small Grants Programme** aimed to support activities of NGOs and local community organizations (LCOs) directed at climate change

mitigation and adaptation, bio-safety, protection of transboundary waters, POPs, and land degradation with simultaneous attention to local communities' livelihoods.

The ongoing UNDP project **Supporting Uzbekistan in Transition to a Low-Emission Development Path** also complements the proposed project. The UNDP project seeks to enhance the national capacity of Uzbekistan to transition effectively to a low-emission development path. The project will assist the country to reduce the costs of implementing mitigation measures, facilitate catalyzing additional finance, and revise the existing project evaluation and approval procedures to more effectively support CDM project identification and development.

B. PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

Uzbekistan is the second largest country in Central Asia by land mass, and the largest in terms of population. The country has a total land area of 447,800 km², mostly flat to rolling sandy desert with flat, intensely irrigated river valleys along the courses of the two major rivers, the Syr Darya and the Amu Darya. The largest desert in Central Asia, the Kyzylkum, covers the greater part of the lowlands and plains in the west and south of Uzbekistan. Uzbekistan is a dry country, comprised of mountains (20%) and arid/semi-arid areas (70%) and experiences high solar radiation. This, combined with its landlocked situation and topographic relief, results in a severe continental climate with large diurnal and seasonal variations in temperature. Average precipitation in the desert is less than 200 mm per year. It reaches about 400 mm in the foothills and can go above 800 mm at altitudes between 1,000m and 4,000m. About 90% of the land area consists of mountains, desert and semi-desert, the rest being fertile valleys along major rivers.

The population of Uzbekistan is estimated at 28 million and the annual growth rate is 2.3% which is one of the highest in Central Asia. More than half (about 60%) of the population of Uzbekistan is considered rural. The agricultural sector accounts for about 33% of gross national product (GNP), about 38% of employment, and about 40% of export income. Total agricultural land occupies 28.5 million hectares (or 63% of the total land area) including 23.4 million hectares (or 52%) that can be considered poor or low-productive pastureland, and 4.2 million hectares of arable land (approx. 11%). Due to its arid climate arable agricultural output is almost entirely dependent on irrigation. The total irrigated area is 4.2 million hectares, of which 4.1 million hectares is arable land with almost 3.4 million hectares cultivated with annual crops (grain, barley-corn, wheat, rice, corn, cotton, potato, vegetables). Cotton and grain are the most important crops in Uzbekistan; significant products include fruits (apples, apricots, peaches and berries), vegetables (cucumbers, tomatoes and potatoes), milk, silk and livestock. The sown area for cotton is 1.3 million ha, grain crops 1.2 million ha, potatoes and vegetables 50,000 ha, fodder 180,000 ha, and gourds on 20,000 ha. Agriculture also has a direct impact on and relationship with many other areas of the economy generating 70 percent of domestic trade, servicing 90 percent of domestic demand for agricultural products and processing of agricultural output accounting for 35-40 percent of all industrial output (7.7-7.8 percent of GDP).

The policies of GOU in relation to agriculture have undergone major changes in the past years. The organization of farming was fundamentally reformed, with land passing from co-operative usage (kolkhozes, then shirkats) to a new class of private farmers. This was completed in 2007, with an average land endowment per farm of 26.2 hectares and approximately 1.8 million workers employed on the lands. In January 2007 there were 189,200 active private farms, as compared with 87,500 in 2003. The newly privatised farms account for over 32 percent of total gross agricultural output, including 86 percent of raw cotton and 73 percent of wheat

production.

The impact of the reforms has created a new class of private farmer, no longer subject to direct government management, but equally not supported by direct government service and input supply. Due to the competitive nature of land allocation, many of the farmers have detailed knowledge of the agronomic practices required for farming, but lack the management skills required to operate their farms as private business. In addition, the reform of the financing system means that farmers now have to seek financing from the commercial banking sector (especially for non-cotton crops), a practice for which they have little experience.

The fundamental reform of the structure of farming has also created a new challenge in relation to irrigation and drainage (I&D). There is now a specific division of responsibility, with inter-farm and upstream infrastructure and works being the responsibility of the government, whilst the on-farm I&D is now the responsibility of the newly privatised farmers. Much of the I&D infrastructure is over 30 years old, and has suffered from a lack of investment and maintenance (funding currently estimated at 40-50 percent of required levels) in the past 15 years. Estimated yield losses due to lack of timely water supply and increasing salinization are high at almost US\$ 1 billion annually. The government has noted these specific problems in the Welfare Improvement Strategy and has recently passed a Decree creating a fund of almost US\$ 50 million for investment, mainly in inter-farm drainage system rehabilitation. Of equal importance is the establishment of Water Users' Associations (WUAs) for managing on-farm I&D operations and maintenance. Whilst initial steps have been taken in this area, success to date in creating viable, sustainable WUAs has been elusive.

The effect of the reforms is having a noticeable impact in the financial sector. Loans to agriculture in the banking sector amounted to 3 – 5 percent annually during 2002-2005. In 2006, the share of agricultural loans increased to about 14.2 percent of the total banking sector portfolio (largely due to government programs being channelled through the banking sector). In 2006 agricultural lending stood at 10 percent of agricultural GDP. The exposure and activity of individual banks differs greatly (from 3 up to 50 percent of total portfolios). In the Credit Union (CU) sector, lending for agriculture ranges between 15 percent and 30 percent of total portfolios.

Availability of financial services for rural areas remains an acute issue, as access is more limited than in urban areas, whilst rural demand is increasing dramatically (partly as a factor of the privatization of farmers). Provision of adequate financial services to the general agri-business sector remains constrained by several factors such as lack of collateral; low capacity of banks to assess agricultural risk; low capacity of Recipients to prepare business plans; and lack of long term funding sources. Addressing these shortcomings remains a major challenge in promoting rural growth.

In view of the importance of agriculture and its potential for adding to overall economic growth and raising rural incomes in the coming period, the government is keen to develop the sector and has raised its importance on the economic agenda. A number of government-led and also donor financed projects are being undertaken to address the major challenges created by the recent reforms.

Baseline Project. The Uzbekistan Government requested Bank's support to address the above problems. As a result, the 2nd Rural Enterprise Support Project (RESP-2) has been developed, consisting of the following components:

Component 1. Rural Finance, to (i) enhance access to commercial financial services by the newly independent farmers and small/ medium size rural enterprises, and (ii) reduce the risks associated with lending to the agriculture sector by providing assistance to the potential recipients on business planning and improving the sector-specific lending skills of the staff of the commercial lenders through training.

Component 2. Irrigation and Drainage, to improve water management of irrigated areas in these seven districts, through investments in: (i) the rehabilitation of critical inter-farm and on-farm I&D infrastructure; (ii) strengthening WUAs and the institutional capacity to train and support WUAs to rehabilitate, operate and maintain on-farm I&D systems; (iii) investments in demonstration plots in the district for applied modern irrigation techniques.

Component 3. Rural Training and Advisory Services, to (i) provide training and advisory services to newly independent farmers in various farm management skills (e.g. legal, accounting, business, technical aspects including agronomy, water management, pesticide handling, IPM etc); and (ii) increase availability of technical information and advisory services.

Component 4. Project Implementation, for overall management, monitoring and evaluation.

Baseline Project Financing and Benefits. The total baseline financing is US\$75 million, comprising US\$67.96 million credit from the International Development Association (IDA), US\$6.58 million from the Government contribution and US\$0.487 million from the beneficiaries. The baseline project objective is to increase the productivity and financial and environmental sustainability of agriculture and the profitability of agribusiness in the project area. This will be achieved through the provision of financial and capacity building support to farmers and agribusinesses in seven regions of the Republic of Uzbekistan (covering around 65 percent of the total population of the country), and improved irrigation service delivery through rehabilitation of I&D infrastructure and strengthening of WUAs in seven districts within following seven regions: Andijan (Ulugnor district), Bukhara (Alat district), Kashkadarya (Mirishkor district), Samarkand (Pastdargom district), Syrdarya (Bayavut), Tashkent (Buka district), Fergana (Yazyavan district).

Key baseline project outcome and output indicators are as follow:

Outcome indicators

- Farmers in project regions will have increased their overall productivity and income
- Farmers and agribusiness access to information about and demonstrations of environmentally sustainable practices improved; 10% of farmers in the project area who benefit from RTBAS activities will have begun to adopt these practices by end of project.
- Farmers and agribusiness access to financial services improved: growth in overall agricultural portfolio of the commercial banks at least 10 percent per year during the project period
- Microfinance institution outreach improved: the aggregate agricultural lending by microfinance institutions increased 10 percent during the project period
- Increased irrigated areas with adequate water supply and drainage in the project districts.
- Increased amount of maintenance work undertaken by WUAs in the project districts.

Output indicators

- At least 700 loans/leases provided under the credit component
- At least 100 micro-loans (up to US\$ 10,000) provided under the project
- At least 200 loan officers and branch managers trained
- At least 4 PFIs participate in the project, of which at least one is new, i.e., did not participate in the first RESP
- At least 600 km of irrigation and drainage networks will be rehabilitated.
- At least 75 WUAs will have developed and budgeted operation and maintenance plans

- Basin administration authorities will have increased capacity to provide advice to WUAs.
- At least 50,000 independent farmers will have received training in a number of critical farm management skills.

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:

The GEF grant would make possible the introduction of renewable energy technologies and more sustainable irrigated land use practices, which could receive very only limited resources within the baseline RESP-2 project. The GEF grant would be of particular significance to Uzbekistan: while the baseline project supports improved rural access to credit, capacity building, and rehabilitation of I&D systems, it does not emphasize or provide dedicated resources to introduce renewable energy technologies in agribusinesses and on farms, nor approaches for improved flow of agri-ecosystem services to sustain rural communities. These communities, large private farmers and small farmers, especially those in remote regions subject to unreliable power and gas supply, would benefit greatly from off-grid energy from renewable sources. At the same time, the project would begin to introduce renewable energy technologies in rural areas throughout the country, thus supporting a key Government development objective. The rural communities and agribusinesses depend on irrigated land and livestock for their livelihoods, creating both inputs for renewable energy (manure, biomass) and demand for energy and sustainably managed irrigated land. While Uzbekistan has good supplies of natural gas, the Government is keen to develop renewable energy sources both to free up for export gas currently sold at low domestic prices, and to fulfill their obligations under UNFCCC. The proposed GEF project concept was endorsed by the Government Inter-Agency Working Group Meeting on 30 June 2011, as having great value for sustainable economic development, especially in rural areas.

The current unsustainable exploitation of soil and water resources would be addressed through a combination of investments for the prevention and mitigation of irrigated land degradation. Increase of evaporation due to global warming will lead to water loss in the irrigation zones, while irrigation demand is expected to increase in average by 5% by 2030, 7-10% by 2050, and 12-16% by 2080. The expected decrease of river water resources will lead to worsening of the water scarcity situation, which will be especially acute during low-flow years. Livestock is an important and growing source of methane emissions. The number of cattle, sheep and goats, and poultry has increased by 35%, 29% and 81% respectively from 1996 to 2010. The increase in livestock has led to the growth of methane emission by 33.1% and of nitrous oxide emissions by 26.4%. Improved water resources management, rehabilitation of degraded irrigated land and reduction of GHG emissions from agricultural sources are thus a high priority for the Government, as reflected in the Second National Communication on Climate Change and the National Programming Framework under CACILM.

At this point (PIF stage), it is not yet known which renewable energy technologies would be selected for demonstration and dissemination as most practical and efficient for Uzbekistan, nor have the costs of implementing the technologies in Uzbekistan been identified. This will be focus of careful assessment and analysis during project preparation. Given the country's natural features and current agricultural patterns, the most promising renewable technologies for Uzbekistan appear to be solar, biomass and biogas.

The following is an illustrative rough estimate for biogas digesters, based on the assumption that approximately 2000 small (farm size) biogas digesters with an average capacity of 30m³ and average cost of US\$ 2000 each would be financed. The actual number may be greater or fewer, depending on beneficiary demand. This estimate assumes the following:

1 biogas plant (with capacity 30 m³ and manure consumption of 0.6 ton per day) can avoid about 155.097 ton of CO² equivalent, including:

- 149 tons of CO²e per year - emission of methane (CH₄)
- 2 ton of CO²e per year - electricity to produce gas
- 4.097 ton of CO²e per year – reduction of energy consumption per year (6600 kw/h * 620.8 gram CO² equivalent per 1 kw/h)

The 2000 biogas installations at a cost of approximately \$4.00M (\$2M GEF grant and \$2M beneficiary co-financing) would enable Uzbekistan to avoid approximately 310,194 t/CO² equivalent. Biodigester investments will include the equipment to utilize the gas produced, either for heat or electricity generation or both. These estimates are illustrative only, as it is expected that several different renewable energy technologies will be selected by beneficiaries, so it is not possible at this stage to provide a more precise estimate of CO² equivalent avoided. An actual estimation of likely CO² emission reduction will require studies that can only be completed during project preparation. These estimates will be provided at the time of CEO Endorsement.

The implementation of these incremental activities would generate significant global environment benefits while supporting local and national, social and economic development through promotion of environmentally sound, climate-friendly technologies to achieve significant GHG reductions (tons of CO² equivalent); reversing the current trend in land degradation and promoting water conservation in agriculture; supporting creation of more productive and sustainable agri-businesses; and introduction of climate change adaptation measures to address Uzbekistan's increasingly dire water shortages.

The **main areas supported** by the GEF grant would be the following: promoting the use of renewable energy for the provision of rural energy services and supporting new low-GHG emitting energy technologies; introducing legal, policy and technological measures to mainstream renewable energy in Uzbekistan by developing renewable energy legislation, technologies and capacity building in rural areas; and supporting rural communities to adopt sustainable agriculture and land management practices aimed at restoring and improving irrigated land while increasing economic opportunities for the rural population. Finally, the project will carry out activities to strengthen the capacity of the Uzbekistan legal and institutional system to develop and implement reforms to respond to challenges of climate change and land degradation in the agricultural sector. While there is keen interest in adopting renewable energy and improved land management approaches, Uzbekistan has little experience with the technologies and practices involved. Good interagency coordination on climate change and energy policy is expected through the active engagement of the Ministry of Economy Interdepartmental Council, which serves as the national authority for Kyoto Protocol implementation, and the Center for Hydrometeorology under the Cabinet of Ministers, responsible for UNFCCC implementation.

The GEF grant would support development of national level legislation and institutions which would provide overall guidance on the introduction and use of renewable energy technologies. This would include: technical assistance for the legislative review and reform; capacity building to strengthen the Eco-Energy Center (under the State Committee for Nature

Protection), Ministry of Agriculture and other key government institutions, and the private sector service providers; dissemination of best renewable energy and land degradation mitigation practices and results to facilitate replication and sustainability; and knowledge programs and exchange programs to facilitate acquiring best international expertise in the area. These activities would complement the Rural Finance, I&D, Capacity Building and Project Management Components of the baseline project as follows:

1) Investments for sustainable technologies. Activities under this component would aim at introducing renewable energy and energy efficiency technologies in small and medium size (SME) agribusinesses and on small and large farms. The GEF grant would support innovative technologies that could have a significant impact in the long-run in reducing GHG emissions and developing capacity for adaptation to climate change. This could also include technologies that are available but have not yet been tested and or widely adopted in Uzbekistan. One such example would be the bio-gas digestors, which would use poultry and livestock manure to produce gas and electricity for farm households and agribusinesses. Other renewable energy technologies could include solar (photovoltaics, solar thermal, concentrating solar power), biomass (using cotton stalks and/or sorghum), wind and micro-hydroelectric installations. Emphasis would be given to remote agribusinesses and farms that are prone to disruptions in electricity supply. The GEF grant would support initial demonstrations of the technologies, and then provide matching grant funds to scale up their introduction. It is envisioned that the grants would cover 50% of the costs, with the beneficiaries providing the remaining funds. The beneficiaries could apply to the credit line under Component 1 of the baseline project for their portion of the co-financing. This would improve the environmental sustainability of the sub-projects financed under the credit line, and provide needed portfolio diversification under RESP-2.

2) Irrigated land degradation mitigation. Activities under this component would aim at introducing technologies and management approaches for controlling and reversing irrigated land degradation. This could include introduction, testing and demonstration of the integrated low-cost, low-risk water and land management technologies, such as drip irrigation, salinity mitigation of marginal land, water re-use, soil quality enhancement, pumping for groundwater extraction, alternative cropping, and other techniques or practices to increase water use efficiency and agricultural productivity. This component will improve knowledge, skills and know-how of farmers and local communities and promote the transfer of demonstrated technologies and SLM practices through the Farmer Field School (FFS) approach. These activities would be targeted to the rayons participating in the Irrigation and Drainage Component of the baseline project, which are receiving funds and technical assistance to repair and upgrade irrigation infrastructure.

3) Project technical support and advisory services. Activities under this component would support key capacity development and analytical services needed to introduce and scale up adoption of renewable energy, energy efficiency and land degradation mitigation technologies and practices. These are expected to include workshops and information dissemination for the technologies that will be demonstrated and to publicize the RESP-2 credit line, energy audits for agribusinesses, capacity building for carbon accounting and sustainable agricultural practices (focusing on irrigated land), and advisory services and twinning arrangements for development of renewable energy technology and sustainable land management support businesses. This component would also help to introduce systems for sending timely weather data by mobile phone text messages or voice mails to farmers to enable better planning (e.g., when to apply fertilizers, when to harvest crops) and response to extreme weather events. The GEF grant would also support advisory services for analysis and development of the legal and

regulatory framework to support broader adoption of renewable energy technologies. These activities would complement the Rural Training and Advisory Services Component of the RESP-2 baseline project, and strengthen environmental oversight and impact of RESP-2.

The GEF grant is of major importance for the Government of Uzbekistan. In the absence of the proposed GEF Grant, the Government of Uzbekistan would have limited funding and access to best international practice to test and implement new technologies for reduction of carbon emissions and to mitigate degraded irrigated land. Without the GEF Grant, the Government would also lack the needed incremental support to demonstrate, disseminate and promote the appropriate technologies that increase sustainable agricultural production and reduce degradation of natural resources. The GEF Grant would also contribute significantly to the improvement of the country's legal, institutional and regulatory environment with respect to climate change and land degradation, as well as provide the resources for provision of advisory services to rural communities. Agriculture has an important role to play in the mitigation of greenhouse gas emissions in Uzbekistan, with many of the practices that have benefits for both productivity improvement and adaptation also having synergistic mitigation benefits (i.e. "win-win-win").

- B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read "[Mainstreaming Gender at the GEF.](#)":

At the local level, the baseline project together with the proposed GEF grant are expected to bring tangible benefits to farmers and small and medium sized agribusinesses in rural communities through improved access to bio-gas for heating, cooking and electricity, and through increased productivity, provision of renewable energy technologies, and sustainability of irrigated agricultural land. This would be evidenced by: (i) improved livestock and poultry waste management and the number of households and SMEs adopting renewable energy technologies and decreasing their reliance on the national gas and electricity grids; (ii) increased efficiency of irrigated land management, as measured by increased agricultural productivity and diversification of produce, and improved soil and water quality; and (iii) increased number of technical service providers to support the introduction and maintenance of renewable energy and sustainable irrigate land management technologies.

The project will benefit women in rural areas. While the project is not directly targeting women, its implementation mechanisms ensure women's equitable access to resources and equitable representation in decision making. This suggests that women and women's groups are likely to benefit from the project. Furthermore, a number of measures towards highlighting and intensifying women's role and involvement in social and economic life of rural communities will be undertaken under the project. This will include alternative opportunities for women's entrepreneurship and employment through the baseline project credit line, which supports village-level agri-business and farmer groups to develop new business opportunities, improve marketing, and introduce and demonstrate new renewable energy and irrigate land management technologies that could benefit communities.

- 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 further developed during the project design:

The **key risks** that may affect the project objective and proposed mitigation measures are described below.

Climate change. According to Uzbekistan's Second National Communication on Climate Change (2010), intensive warming is observed on the whole territory of Uzbekistan. Variability in climate is expected to generate important socioeconomic and environmental consequences, especially for water resources. Average annual temperature has already increased by 0.29°C since 1951. Significant increase in repetition of high temperatures has been observed during the last decade. With further of acute water scarcity (assessment for extremely warm and dry years), flows in the Syrdarya and Amudarya Rivers Basins might decrease by 25-50%. The activities envisaged under this GEF grant would contribute to mitigating and adapting for these water scarcity, land degradation and increased GHG emission risks.

Legal and institutional framework. Uzbekistan's institutional capacity and technical expertise in land degradation mitigation, renewable energy technologies and climate change adaptation are weak. The Second National Consultation notes that development and implementation of mitigation and adaptation measures are the major priority issues in the area of Climate Change. Overall challenges existing in this area include lack of organization, technical and financial resources, qualified personnel and insufficient legal base. To mitigate this risk, the project will support policy dialogue and technical assistance to develop the legal and institutional framework. The project would also address the lack of technical capacity to establish, operate and maintain innovative sustainable renewable energy and land degradation mitigation technologies.

Acceptance and sustainability of sustainable technology investments. Visible benefits of rural investments, in particular those concerning alternative energy technologies and rehabilitation measures for degraded lands, may take longer than expected, thus impacting on the local communities' and SMEs' acceptance and continued use of the new technologies and land management approaches. Most of the country is adequately served by the national electricity and natural gas supply grids at modest cost, although service can be intermittent, especially for remote rural communities. In order to mitigate this risk, the GEF project would support initial demonstration of innovative technologies and approaches, complimented by a strong information dissemination and capacity building program. The risk would also be mitigated by focusing on introducing renewable energy technologies in communities poorly served by the natural gas and/or electric grid, as interest and demand should be stronger there.

Adaptation of new low carbon technologies to Uzbekistan's specific climate conditions. The new technologies, even if proven successful elsewhere, might not be suitable to Uzbekistan's conditions. To mitigate this risk, South-South cooperation will be promoted, in addition to technical assistance and studies to test, demonstrate and transfer these technologies.

- 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:

The key stakeholders and beneficiaries of the project will be the Ministry of Agriculture and its provincial and district departments, UzHydromet, the Eco-Energy Center (under the State Committee for Nature Protection), Uzgip Institute, other government institutions, SMEs, new private sector service providers, small and large scale farmers, local governments and rural communities. The Rural Restructuring Agency (RRA), which is same Project Implementation Unit (PIU) that is implementing the baseline RESP-2, will provide daily management, administration and coordination of the project, including procurement, financial management, monitoring and reporting to NSEC CACILM, as well as technical and other oversight in accordance with GEF and World Bank rules and procedures. A range of civil society

organizations, donor and government agencies are expected to participate in project networking and dissemination activities.

B.6. Outline the coordination with other related initiatives:

The project is coordinated with initiatives supported by the UNDP, FAO, GIZ, ADB, the Central Asia Country Initiative for Land Management (CACILM), and the World Bank-financed Central Asia Hydrometeorology Modernization Project. UNDP has initiated the “Supporting Uzbekistan in transition to a low-emission development path” (LED) project to support the evolution of policies for improved technologies to introduce energy efficiency measures among public and private users, and assist in harnessing potential future financing flows and clean technology transfer opportunities. UNDP in cooperation with CACILM Secretariat is also preparing a PIF for a new GEF project “Reducing pressures on natural resources from competing land use in non-irrigated arid mountain, semi-desert and desert landscapes of Uzbekistan,” which will complement the irrigated land degradation mitigation activities to be carried out under the proposed Sustainable Agriculture and Climate Change Mitigation Project. FAO is preparing a new global GEF project “Land Degradation Assessment and Monitoring for Sustainable Land Management Decision Support and Scaling Up of Best Practices,” in which Uzbekistan will participate. The FAO project will provide important complementary technical assistance and support for monitoring UNCCD implementation at the national level, access to sustainable land management data bases, and regional and global cooperation mechanisms that will benefit Uzbekistan. The German International Society (former GTZ) in Uzbekistan has supported several pilot projects in energy efficiency and renewable energy, good agricultural practices, greenhouse production, integrated and biological pest management, and agribusiness value chain promotion in the Aral Sea region. The pilots offer valuation lessons for the proposed project, and may be eligible to be scaled up or replicated in other regions of the country. Introduction of a service to send timely weather forecasts to mobile phone subscribers would be supported by the new Central Asia Hydrometeorology Modernization Project, which will strengthen hydrometeorology services in the region. ADB is working actively with the Government and UZBEKENERGO to introduce large scale solar power and to carry out solar mapping country-wide. A donor’s forum will be convened during preparation of the proposed GEF project to draw on these experiences and to ensure good coordination of these inter-related initiatives.

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

The proposed project is an investment operation and is consistent with the comparative advantage of the World Bank, as stipulated in the Comparative Advantage matrix. The World Bank’s comparative advantage is as a leading international financial institution at the global scale, with strong experience in investment lending focusing on institution building, infrastructure development and policy reform, across all the focal areas of the GEF. In line with the World Bank’s comparative advantage, the project will focus on supporting the development of enabling regulatory environment, provision of technical assistance and capacity building, and investing in the piloting of new technologies.

C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

The International Development Association (IDA) has provided a credit for the baseline RESP-2 project in the amount of US\$67.96 million, which will also be co-financed by the Government with an amount of US\$6.58 million and by the beneficiaries with an amount of US\$0.460 million. This brings the total co-financing that the GEF agency is bringing to the overall project to US\$75 million. Additional financing in the amount of US\$40 million will be prepared in

FY12 to supplement the credit line and capacity building components of the baseline project.

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:

The proposed GEF project is consistent with the outline of the new Country Partnership Strategy (CPS) currently under development by the World Bank and Uzbekistan for FY12-15. The overall goal of the CPS will be to support efficiency, competitiveness, diversification and social equity policies, with continued attention to the agriculture sector. A key focus of the Bank's partnership strategy in agriculture and rural development is to help the Government in its efforts to address the issues of national land resource degradation. The project will contribute to the CPS by addressing climate change adaptation and mitigation and the environmental challenge of land degradation to ensure sustainable agriculture development and reduce poverty. Finally, the 2nd Rural Enterprise Support Project (RESP-2), which the GEF grant would co-finance, was included in the Country Partnership Strategy for the Republic of Uzbekistan prepared for the fiscal years of 2008-2011.


The World Bank TTL for RESP-2, is based in the Country Office in Tashkent, and will be responsible for oversight of the proposed GEF project. Procurement and financial management staff are also available to support the project from the Tashkent office. The Bank team will include specialists in credit line finance, agriculture, irrigation and drainage and environment (including climate change and renewable energy technologies). The team will also draw on the Bank's extensive global experience in introduction of innovative renewable and energy efficiency technologies and in land degradation mitigation.

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 (MM/dd/yyyy)

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 (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
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