I. Project Context

Country Context

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 course 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 1,000 m and 4,000 m. 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 29.2 million and the annual growth rate is 2.3% which is one of the highest in Central Asia. Nearly half (about 49.7%) of the population of Uzbekistan is considered rural. The agricultural sector accounts for about 17.6% of gross domestic product (GDP), 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 pasture land, 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, 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 under 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).

II. Sectoral and Institutional Context

The policies of the Government of Uzbekistan 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 1.6 million workers employed on the lands. In January 2012 there were 84,000 active private farms. The newly privatized farms account for over 34.5 percent of total gross agricultural output, including 100 percent of raw cotton and 84 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 privatized 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.

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 farms). 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.

Climate Change and land degradation Uzbekistan

According to Uzbekistan’s Second National Communication on Climate Change (2010), intensive warming is observed on the whole Country. 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 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 to these water scarcity, land degradation and increased GHG emission risks.

Greenhouse gas emissions. In 2008, Uzbekistan was the 35th largest carbon dioxide (CO2) emitter and the most carbon intensive economy in the world: CO2 emissions amounted to 124.9 million tons, and CO2 emissions per unit of GDP were more than twice the level of Russia and three times the ECA average. The largest source of total greenhouse gas emissions is the energy sector, which accounted for approximately 84 to 87 percent of total emissions in various years. The majority of GHG emissions in the energy sector are related to fuel combustion and methane leakage. Regarding CO2 emissions from fuel combustion, electricity and heat production are the main emitters, followed by residential sector and manufacturing industries. The second largest source of GHG is agriculture, which accounted for 8.2% of GHG in 2005. The majority of GHG emissions from agriculture (not related to fuel combustion) are due to fermentation and agricultural soils. The agricultural sector is also a major consumer of electricity, using 24% of final electricity consumption. This is as much as the residential sector consumes. 70% of the electricity consumption by the agricultural sector is used for irrigation pumping.

Energy sector and renewable energy. Mirroring the importance of the energy sector in GHG emissions, hydrocarbons cover more than 97% of primary energy consumption in Uzbekistan. The dominant fuel is gas, accounting for 86% of primary energy consumption. The share of hydro amounts to 2.3% of primary energy consumption, while the share of combustible renewable and waste is close to zero. Electricity generation in the country is also dominated by gas-fired thermal units, accounting for 86% of total installed capacity. A total of 29 hydropower plants are estimated to account for 14% of the system total. There was no significant electricity generation from other renewable energy sources. However, different studies have estimated that the technical potential for renewable energy in Uzbekistan is significant, with solar and bio gas representing the largest potentials. For example, the technical potential for solar energy was estimated to be around 176 mega tons of oil equivalent. Although the overall access to electricity is very high in Uzbekistan, power shortages occur especially in winter, where outages range from two to six hours a day in the Southern and Western regions. Different estimates also suggest that the supply of electricity is particularly unstable in rural areas.

Government efforts to reduce greenhouse gas emissions. Uzbekistan joined the UN Framework Convention on Climate Change in 1993 and ratified the Kyoto Protocol in 1999. Given the importance of the energy sector in total GHG emissions of the country, the mitigation strategy of Uzbekistan focuses on energy policy measures. Taking into account the high energy intensity of the economy, the GoU has assigned strategic priority to improving efficiency in power generation, delivery, and end-use. To this end, the GoU has amended in 2003 the Law on Rational Energy Utilization, adopted an Energy Saving Program as well as several Decrees to improve energy efficiency in different sectors. Other laws concerning environmental protection include the Law on Protection of Nature, Air Protection and Ecological Expertise. A draft Law on Renewable Energy, aiming at promoting the use of renewable energy, is currently under discussion between different Ministries and in the Parliament. Uzbekenergo, the vertically integrated state owned electricity company also plans to increase the share of renewable energy sources by installing a solar power plant (50 MW capacity), wind power units (100 MW capacity) and installation of solar hot water supply units in different provinces. Along with the Government’s efforts to reduce energy intensity, different donors and multilateral institutions, such as UNDP, ADB and GIZ are active in promoting the use of renewable energy technologies in Uzbekistan. The World Bank also supports the promotion of energy efficiency in industries as well as reduction of gas flaring, which also contribute to mitigate GHG emissions.

Barriers to promoting low-carbon technologies. The vast potential for reducing greenhouse gases by promoting energy efficiency and renewable energy technologies is in sharp contrast with the low volume of actual investments in energy efficiency and renewable energy. Reasons for this disparity are informational, technical, financial, institutional and policy barriers constraining the promotion and market penetration of low-carbon technologies. In particular, relatively low energy prices are hampering financial viability of investments in energy efficiency and renewable energy technologies. Although energy prices have increased since 2002 and cross-subsidies were gradually removed, average end-user tariff remain relatively low at around US$ 0.043/kWh. Concomitantly, the legal and regulatory framework for promoting energy efficiency and renewable energy in Uzbekistan remains fragmented and underdeveloped. The lack of provisions allowing and incentivizing the feed-in of electricity from renewable energy sources into the grid constitutes major barrier to promote renewable energy. Other barriers preventing scaling-up of renewable energy and energy efficiency include the lack of access to finance as well as insufficient information and technical capacities.

Degradation of irrigated land. Scarcity of water resources and land degradation are major challenges in the agricultural sector. The main reasons for the degradation of pastures are anthropogenic desertification, aridization of the climate, as well as the increase of cattle livestock for the last 15 years. Additionally, natural al factors, such as the absence of natural drainage flow, low atmospheric precipitation and high vaporability, result in increasing salinization of soils, wind and water erosion. Overall, about 15% of the irrigated lands and 8% of water are subjected to wind erosion throughout the country. The growing rate of salinization is considered as one of the main causes for land degradation. Other factor strengthening degradation of lands and negatively impacting agricultural production include irrational water use, physical a gin of irrigation and drainage systems, ineffective method of irrigation, absence of crop rotation and low humus content.

In view of the importance of agriculture and its potential for adding to overall economic growth and raising rural incomes in the coming years, 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.

III. Global Environmental Objective(s)

The Global Environmental Objectives of the proposed Project are to (i) promote the introduction of renewable energy and energy efficiency technologies of relevance to agri-businesses and farms; and (ii) strengthen capacity for improving degraded irrigated land and water conservation.

The RESP-2 and its AF form the baseline project for this partially blended GEF operation. The project development objective of the RESP-2 baseline project is to increase the productivity and financial and environmental sustainability of agriculture and the profitability of agribusiness in the project area.

IV. Project Description

Component Name
- Investments for Sustainable Technologies
- Irrigated Land Degradation Mitigation
- Project technical support and advisory services

V. Financing (in USD Million)

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VI. Implementation

VII. Safeguard Policies (including public consultation)

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VIII. Contact point

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