PROJECT INFORMATION DOCUMENT (PID)
CONCEPT STAGE

Report No.: PIDC22606

Project Name	Ferghana Valley Water Resources Management - Phase II (P149610)
Region	EUROPE AND CENTRAL ASIA
Country	Uzbekistan
Sector(s)	Irrigation and drainage (75%), General water, sanitation and flood protection sector (25%)
Theme(s)	Water resource management (100%)
Lending Instrument	Investment Project Financing
Project ID	P149610
Borrower(s)	Ministry of Finance
Implementing Agency	Ministry of Agriculture and Water Resources
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	16-Oct-2015
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Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

1. Uzbekistan, a low middle-income, resource rich, landlocked country, is the third largest country in Central Asia by land mass, and the largest in terms of population (30.5 million as of January 1, 2014). Despite slow growth in the broader Europe and Central Asia (ECA) region, Uzbekistan's economy continues to grow strongly. Real GDP growth averaged 8.3 percent per annum between 2008 and 2014, making Uzbekistan one of the fastest growing economies in the ECA region and the middle-income country grouping during this period. Poverty declined from 27.5 percent of the population in 2001 to 14.1 percent in 2013; it is expected to decline to 13.5 percent in 2014. The country is on track to achieve the first national Millennium Development Goal (MDG) by 2015. These results were due to rapid per capita economic growth, sustained annual increases in salaries and remittances, incomes from micro and small businesses, and the Government's targeted social support programs. Net remittances from labor migrants have helped many families in Uzbekistan to keep poverty at bay. However, poverty remains concentrated in rural areas (75

percent of the low-income population), and the elasticity of poverty reduction to GDP is lower than comparable countries as a result among others of low productivity growth in labor-intensive agriculture.

2. High GDP growth rates have been achieved through heavy reliance on natural resources, notably energy and water. Uzbekistan is one of the most energy and water intensive economies in the world. Almost all (90%) of Uzbekistan's water withdrawal is allocated to irrigated agriculture, but water use efficiency is low. Aside from the environmental consequences of desertification and salinization, water scarcity is becoming a binding constraint to growth in irrigated agriculture. These inefficiencies have a high opportunity costs given the budgetary constraints the government is facing.

3. GDP growth is projected to slow in 2014, owing especially to near zero growth in Russia, the main trading partner of Uzbekistan. The prospect of declining remittances and returning migrant workers has elevated the creation of higher-productivity higher-wage jobs on the authorities' agenda to absorb new labor force entrants. One of the main structural challenges that the GOU is facing is to increase the responsiveness of growth to employment and poverty reduction.

Sectoral and Institutional Context

4. The agriculture sector plays an important role in Uzbekistan's economy and contributed over 17.2 percent of national GDP and 24.7 percent of employment in 2014, while farm output has doubled in real terms and continues to grow steadily, at a rate of 6.9 percent per year. About 49.7 percent of the population live in rural areas and depend on agriculture and related activities for their livelihoods. Despite an overall decline in poverty levels, rural poverty remains high (30 percent), and a large share of the poor are dependent on agriculture for employment and livelihoods. The GOU has in recent years embarked on an ambitious agricultural modernization program to increase agricultural productivity, diversification and competitiveness. As a result of the government's priorities, revenues from horticulture exports have grown dramatically (from $0.4 billion in 2006 to US$1.2 billion in 2014).

5. The cotton and wheat supply chains in Uzbekistan remain dominated by the public sector. The state provides subsidized inputs to cotton and wheat farmers, occasional debt write-offs, and support to cover I&D investments and O&M costs. At the same time, the cotton and wheat sector is subject to significant implicit and explicit taxation. Taxes and subsidies do not provide incentives for higher water and energy efficiency. E.g., substituting some of the taxes by a (volumetric) O&M fee without necessarily increasing the net burden on farmers could help promote more efficient use of water and reduce electricity costs.

6. Diversifying agricultural production away from cotton and towards higher value production has become a priority for the government of Uzbekistan. Cotton is a highly water intensive crop and due to increasing water scarcity and other competing needs for water, extensive cotton production cannot sustainably be maintained over the longer term. Today, the government of Uzbekistan is taking active measures to move to a more diverse and sustainable agriculture system.

7. Irrigation and Drainage (I&D). Because of the arid environment in many parts of the country, I&D is essential to sustaining agriculture and its benefits in terms of rural incomes, employment and livelihoods to the many poor that depend on it. More than 85 percent (4.2 million hectares) of the cropland in the country is irrigated from the Amu Darya and Syr Darya Rivers and

their tributaries.

8. In the proposed project areas located in the Ferghana Valley, the main sources of irrigation supplies in the valley are natural waterways (mountain streams) - tributaries of the main Syr Darya River, and irrigation supplies diverted from the Syr Darya river through a system of main canals. These streams and canals deliver water to the farms through a network of secondary (interfarm) canals, and tertiary ditches (on-farm canals). The variable surface water supplies in canals in some higher locations are supplemented by water delivered from lower main canals by pump stations. Additionally, a grid of boreholes and seasonal storage reservoirs and retention basins supplement the irrigation supplies. Much of the physical infrastructure of this irrigation system in the three project areas is in an advanced state of disrepair.

9. The extensive waterworks, reservoirs and irrigation networks that were constructed since the 1950 are now aging. O&M has over the past 10 to 20 years suffered from substantial underfunding with only about 15-25 percent of requirements covered by the Ministry of Agriculture and Water Resources (MAWR). Deteriorating infrastructure amplifies existing weaknesses in irrigation management, leading to low efficiency, with as much as 70 percent of the water not reaching the fields. As a result of the deteriorating infrastructure and poor management, the country loses an estimated US$1.7 billion annually (about 8 percent of GDP). The annual decrease in agricultural production as a result of poor water management is estimated to be in the order of US $2.0 billion.

10. Aging infrastructure, poor management and high inefficiency together with the dependence on pumping in turn contribute to high O&M costs, contributing disproportionally to Uzbekistan’s high energy and water consumption per unit GDP, and eroding sustainability. More than 60% (US $350 million) of the entire budget of MAWR is allocated to paying for electricity to power I&D pumping stations. Electricity for irrigation pumps accounts for 16 percent of the national electricity generation.

11. In response to these challenges, the GOU, with support from the donor community, has implemented a number of reforms that are aimed at improving the sector’s sustainability and financial viability, including the support for Water Consumer Associations (WCAs), adoption of participatory irrigation management (PIM), “hydrographization” of irrigation management responsibility (Hydrographization refers to the establishment of WCAs along hydraulic, instead of administrative boundaries.), and an increasing effort to recover the costs of operation and maintenance (O&M). These reforms, in combination with rehabilitation of irrigation and drainage assets, have resulted in important improvements. In the Drainage, Irrigation and Wetlands Improvement Project (DIWIP, P009127, US62 million, closed in June 2013) that was implemented in South Karakalpakstan, yields have gone up by 10-20 percent, and an additional 20,000 hectares have been brought back in production. Under the Fergana Valley phase I project (FVWRMP-I, US $66 million, closing on July 31, 2016), yields have gone up by well over 20 percent. In both project areas, groundwater levels have declined and salinity reduced.

12. Estimates of the required irrigation and drainage infrastructure rehabilitation costs in Uzbekistan vary between US$ 23 to $31 billion. It is clear that such requirements can only be met over a longer period of time. The GOU has therefore adopted a phased approach to irrigation and drainage rehabilitation, with a focus on priority areas in the Fergana Valley and South Karakalpakstan. While the initial projects focused on improving the drainage, the recently approved

South Karakalpakstan Water Resources Management Improvement Project (SKWRMIP, P127764) and the proposed FVWRMP-II project focus on improving the irrigation situation.

13. Despite significant improvements, irrigated agriculture's contribution to high-productive employment creation, poverty reduction and growth is below that what might be expected from one of the traditional engines of rural growth and livelihoods. Improving irrigation performance will help people move out of poverty and build their assets, and will strengthen agriculture's impact on employment and incomes.

14. Water Resources Management. The Syr Darya is shared by Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan. Its average annual flow is 37 km3. Water resource availability in Central Asia has important seasonal, geographic and economic dimensions, with downstream countries highly dependent on upstream countries for essential irrigation water. Climate change is expected to amplify variability in water resources both seasonally and geographically. Hydropower resources are concentrated in the Kyrgyz Republic and Tajikistan, while thermal energy resources are concentrated in Uzbekistan, Turkmenistan and Kazakhstan. Energy-water linkages play a critical role in the future of Central Asia in terms of economic development, poverty alleviation and shared prosperity, food security, public expenditures and cooperative relations. For example, the upstream riparian country Tajikistan is considering development of dam infrastructure, the impact of which on regional water resources availability continues to be deliberated. These regional dimensions are inextricable from perceptions of national security, regional stability and economic growth. Managing the regional water resources require managing complex technical and political issues and sometimes diverse development objectives. History and experience elsewhere, however, have demonstrated the potential for mutual benefits from sharing both energy and water resources across borders.

15. Five Central Asian states participate in the Interstate Commission for Water Coordination of Central Asia (ICWC), established in 1992, for the regulation of water resources in the Aral Sea Basin. Since 1999, the ICWC is part of the International Fund for Saving the Aral Sea (IFAS). Heads of Central Asian states occupy the post of IFAS president on a rotational basis, with Uzbekistan currently serving. Strategic directions for the IFAS are formulated by the Council of Heads of the five states in the region.

16. Kazakhstan, Turkmenistan and Uzbekistan are signatories to the 1997 United Nations Convention on Non-navigational Uses of International Watercourses. It establishes the principle of equitable and reasonable use, not to cause significant harm to neighbors, and the prior notification of planned measures.

17. Cotton Harvesting and Child and/or Forced Labor. Cotton is harvested during the months of September and October. It is sensitive to weather conditions, and must be harvested as quickly as possible. Although mechanized harvesting was used more extensively during the Soviet times, the subsequent farm restructuring and institutional changes in the state cotton system during the transition led to the deterioration of the large mechanical cotton harvester combines, which were not replaced. Additionally, the size, layout and sowing practices reflected the changes in the farming and, as such, had impact on labor practices. A large workforce is needed when cotton is harvested by hand. Women are largely involved in manual cotton picking. High peak labor demand during the cotton harvest period, in combination with labor shortages due to outmigration to the urban areas and abroad and low cotton picking fees resulting from the state procurement system created

conditions where government sponsors the mobilization of labor for cotton picking, participation in which is often involuntary. The 2013 ILO observation mission concluded that there is no systematic use of child labor in cotton harvesting in Uzbekistan. While the use of child labor (children under 18) has declined significantly, the need for labor to pick cotton remains and has resulted in greater state-organized mobilization of adult labor during the cotton harvest.

18. The government of Uzbekistan is a signatory of several ILO conventions related to child and/or forced labor, but the enforcement of these conventions, as well as of existing national laws reflecting international agreements, has remained challenging, especially during the cotton harvest. Recognizing the need to change the system, the government of Uzbekistan has announced its plans to mechanize 70% of cotton harvesting by 2016. The Asian Development Bank, with full engagement from the World Bank, is working with the government to formulate a strategy to mechanize agriculture, with a particular emphasis on cotton production.

19. The World Bank, in consultation with the government and development partners, has adopted a multi-pronged approach to address child and/or forced labor issues in Uzbekistan. These include (i) pursuing continuous country dialogue and collaboration with international/multilateral agencies and donors to address these issues; (ii) performing sector analytic work and policy dialogue to promote diversification away from cotton and mechanization of cotton harvesting; (iii) strengthening project-level mitigation measures and binding provisions, including implementing a Third Party Monitoring (TPM) and Feedback Mechanism (FBM) to help address child and/or forced labor issues in connection with the project activities or within the project area; and (iv) promoting crop diversification and intensification, and supporting agricultural mechanization through a number of investment operations. In full agreement with the GOU, TPM and FBM were successfully implemented country-wide by the ILO during the 2015 harvest season.

Relationship to CAS

20. Irrigated agriculture plays an important role in Uzbekistan in reducing poverty and promoting shared prosperity, and the proposed project will contribute to achieving these twin goals. First, rural poverty remains very high in Uzbekistan, and a large share of the poor are dependent on agriculture for employment and livelihoods. Building up the assets of the bottom 40 percent will help them participate in growth. Improving the performance of irrigated agriculture will contribute to improving employment and incomes of farming households and, in turn, will contribute to reducing poverty and raising the incomes of the bottom 40 percent in the project areas. Second, climate change is expected to lead to more frequent weather extremes, such as increased risks of droughts and floods. Poor farming households tend to have the least capacity to cope with the adverse consequences of these events. Improved I&D service delivery will thus help improve the climate resiliency of these vulnerable farm households. Third, disseminating good agricultural practices will contribute to more sustainable and climate smart agricultural growth.

21. The Country Partnership Framework (CPF) for 2016-2020 that is under preparation will support the GOU’s efforts to accelerate the creation of higher-productivity higher-wage employment to absorb new labor market entrants, reduce poverty and improve the inclusiveness of the Uzbek economic growth. The GOU realizes that the modernization of agriculture to improve its sustainability and competitiveness, and to increase the employment and poverty responsiveness to growth is an important ingredient of these efforts, and is engaging with the Bank to define the composition of these reforms.

22. The proposed project is fully consistent with the Banks support under the new CPF for agricultural modernization, because support for water management is a priority area for agricultural modernization. The project is also consistent with the support that the Bank will provide for public service delivery under the new CPF that aims to support improving the quality of, among others, public water service delivery. The project is also consistent with the government of Uzbekistan strategy and the World Bank's Central Asia Energy and Water Development Program (CAEWDP) as it aims to invest in the sustainable development and management of I&D systems, and in improving water resources management (WRM) in the Syr Darya River.

23. The government's medium-term growth and development strategy is reflected in the five year Industrial Modernization and Infrastructure Development Program (2011-15). These documents embody four cross-cutting development goals and priorities, namely: (i) to increase efficiency of infrastructure, including irrigation, energy and transport; (ii) to enhance competitiveness of specific industries, including agro-processing; (iii) to diversify the economy and thereby reduce its reliance on a few commodity exports; and (iv) to improve access to and the quality and outcomes of education, health and other social services.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The project development objective is to improve water productivity in the project area.

Key Results (From PCN)

Success of the project will be monitored using the following key results indicators:

- Increased irrigation efficiency;
- Increased water availability;
- Improved O&M cost recovery
- Improved quality of irrigation service delivery
- Percentage of cotton area harvested mechanically

III. Preliminary Description

Concept Description

A. Concept

1. Description

24. The project area is entirely located in the Ferghana Valley (FV), encompassing three regions: Andijan, Ferghana and Namangan. The FV is one of the most populated regions in Uzbekistan. According to the 2011 census, out of the total country's population of 29.1 million, about 8.3 million (28.5%) lived in the FV. Historically, agriculture has been the mainstay of the rural economy. The FV is one of the more agriculturally developed regions of the country, and the yields per hectare of most crops are higher than the national average. Private farms are the main drivers of agriculture production in the country. Dehkan farms are small private household plots and, despite their very small size, on average have the highest productivity and contribute the majority of high value farm products, such as fresh vegetables, fruit, and dairy products. The FV accounts for almost one third of the dehkan farms in the country.

25. The main sources of irrigation supplies in the valley are natural waterways (mountain streams) - tributaries of the main Syr Darya River, and irrigation supplies divert from the river through a system of main canals. These streams and canals deliver water to the farms through a

network of secondary (interfarm) canals, and tertiary ditches (on-farm canals). The variable surface water supplies in canals in some higher locations are supplemented by water delivered from lower main canals by pump stations. Additionally, a grid of boreholes and seasonal storage reservoirs and retention basins supplement the irrigation supplies. Much of the physical infrastructure of this irrigation system in the three project areas is in an advanced state of disrepair.

26. Through a participatory planning process and Multi Criteria Analysis for prioritizing investment, three high priority irrigation system areas have been identified in the FV for rehabilitation and system modernization:

(i) The Podshota-Chodak project area in Namangan region located in the northeast of the FV. Administratively, the project area consists of Yangikurban district in its entirety and part of Chodak district. It is located on the right bank of Syr Darya River;
(ii) The Isfayram-Shahrimardan project area in Fergana region located in the south of the FV. The project area covers the southern part of Isfayram-Shahrimardan ISA. Administratively, the project area include the entire Ferghana and Kuvasay districts, Ferghana city, and parts of Kuva, Altiarik and Tashlak districts;
(iii) The Savay-Akburasoy project area in Andijan region located in the southeast of the FV. Administratively, the project area is part of Kurgantepa, Jalalkuduk, and Hujaobod and Bulokboshi districts of Andijan region and located on the left bank of Karadarya River.

27. The total overall project area is spread over about 120 thousand ha, out of which about 33.3 thousand ha (27.7%) is in Namangan region, some 63.3 thousand ha (52.8%) in the Fergana region, and a little over 23.4 thousand ha (19.5%) in the Andijan region. There are about 181 thousand farms in the project area. The total cropped area in the project zone is 103.6 thousand ha. Out of 181 thousand farms, there are 3,044 (1.7%) private farms managing about 83.1% of the farm area (99.7 thousand ha), while there are 177.9 thousand dekhan farms (98.3%) operating about 16.9% area (about 20.2 thousand ha). About 29.8% of the area (30.9 thousand ha) is allocated to orchards (stone fruits and grapes), followed by 29.8% (30.8 thousand ha) wheat, and about 14.9% area is allocated to cotton grown on about 15.4 thousand ha. In addition, vegetables (greens and potato) are grown on about 10.6 thousand ha (10.2%), and 10.4% of the area (10.7 thousand ha) is allocated to fodder crops, mainly for household animal needs. The rest of the area (4.9% or 5 thousand ha) is allocated to other crops. The yield levels for the various crops in the project area is significantly lower than yield levels elsewhere in the FV, which suggests a significant degradation of the irrigation infrastructure and consequent lack of availability of irrigation water compared to the irrigation requirement.

28. Experience in the implementation of the FVWRMP-I project shows that combined support for infrastructure rehabilitation, reforms and capacity strengthening can have a significant impact on the performance of irrigated agriculture. Yields of all key crops in the project area went up dramatically, and over 40% of the project area saw a reduction of groundwater tables.

29. Irrigated agriculture in the project areas is facing a number of important challenges. Irrigation efficiency is low as a result of aging infrastructure and deferred maintenance which leads to high conveyance losses. Irrigation and drainage pumps are old and inefficient, increasing the costs of O&M. Water management organizations have adopted a top-down approach without much accountability to the end-users, and service delivery is characterized by misallocation, poor or ad-hoc/arbitrary water regulation practices and water management decisions. On-farm irrigation

practices suffer from an inadequate involvement of WCAs and from a lack of incentives to improve performance. As a result of aging infrastructure, high water losses and weak capacities, water shortages in the project area amount to about 30% of total requirements. Climate change is expected to amplify these shortages, and the high dependence on transboundary water limits the possibility of increasing abstractions. Water shortages have resulted in decreased cropped areas and reduced crop yields from under-irrigation. Improving efficiency is the key to improving water availability, increasing agricultural production and reducing O&M costs. Considerable amounts of water could be reallocated, and significant increases in yields are possible through improved water management – and by providing the incentives to do so.

30. Based on a strength, weaknesses, opportunities and threats (SWOT) analysis presented in the feasibility study, the project aims to sustain the benefits gained from the implementation of the FVWRMP Phase-I. Phase-I improved the drainage situation in parts of the valley that were most affected by high groundwater levels. To scale-up the impact of these investments, Phase-II will aim to improve the performance of irrigation in support of agricultural modernization. It will focus on increasing the energy and water efficiency of irrigation, improving the quality of service delivery, reducing the costs of O&M and increasing O&M cost recovery, while strengthening the 48 WCAs that are active in the project area. The project will also support agricultural intensification and diversification away from cotton and into higher value crops. Finally, the project will support a number of measures to eliminate child and forced labor in the project area.

31. A detailed water balance was prepared as part of the feasibility study. The water balance shows that water withdrawals from surface and groundwater will increase to meet the increased water demand in the project area as a result of post-project yield increases and restoration of previously under-irrigated or abandoned areas. Part of this increased withdrawal will be off-set by increasing irrigation efficiency on existing irrigated areas. The net increase in withdrawal as a result of the project is 142.5 million m3 (MCM), which represents about 1.5 percent of average summer flow in the Syr Darya at the Uzbek/Tajik border.

32. The project will contain the following components:

33. Component A: Irrigation Modernization. This component aims at addressing the problems of water shortage in the project areas and strengthen the climate resilience of irrigation systems by financing the following five main activities: (a) Rehabilitation of Surface Irrigation System; (b) Modernization of Pump Stations; (c) Rehabilitation and Construction of Groundwater Boreholes; (d) Enhancing Storage Capacity; and (e) Flood Control and Bank Protection through rehabilitation of 8.5kms of levees in the Isfayram-Shahimardan sub-project area, and rehabilitation and strengthening of small mudflow reservoirs. Improved irrigation efficiency is expected to make the systems more resilient to climate change. To enhance the accountability of irrigation management to water users and improve the quality of irrigation service delivery, the project will pilot volumetric O&M charges, expand the existing SCADA system in the project area, and promote managed aquifer recharge.

34. Component B: Agricultural Modernization. To take full advantage of the improvements in irrigation modernization, this component will support the GOU’s efforts to modernize agriculture, promote agricultural diversification and intensification in response to climate change, invest in cotton harvest mechanization and conduct outreach and information dissemination. All training under this component will be based on an annual needs assessment and feedback/evaluation.

Subcomponents include (i) strengthening capacities of local water management institutions and WCAs, (ii) crop intensification and diversification through capacity strengthening, demonstrations, and Farmer Field School (FFS), (iii) assistance to farmers to access lines of credit (including assistance in the preparation of business plans), (iv) provision of modern tools and maintenance equipment to WCAs to undertake on-farm maintenance activities, (v) cotton harvest mechanization, and (vi) support for cotton certification. Special attention will be paid to engaging female farmers in the WCAs activities in in FFs. Gender disaggregated indicators will track such participation.

35. Component C: Project Management, Audit, Monitoring and Evaluation, and Technical Assistance. This component would (i) support the operation of the Project Implementation Unit (PIU), and finance overall project management, as well as technical assistance in such areas as detailed design, contract administration and construction supervision, procurement, financial management, and capacity strengthening; (ii) participate in a TPM and an FBM on child and forced labor (financed through a separate trust fund); (iii) establish a Monitoring and Evaluation (M&E) system and arrange for data collection and reporting on key performance output and impact indicators through baseline surveys, participatory assessments and mid-term review and final evaluation; (iv) finance services of independent auditors for auditing of project accounts and overall project management; and (v) prepare a feasibility study and bidding documents for a follow-on investment operation.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	×		
Natural Habitats OP/BP 4.04			×
Forests OP/BP 4.36		×	
Pest Management OP 4.09	×		
Physical Cultural Resources OP/BP 4.11		×	
Indigenous Peoples OP/BP 4.10		×	
Involuntary Resettlement OP/BP 4.12	×		
Safety of Dams OP/BP 4.37			×
Projects on International Waterways OP/BP 7.50	×		
Projects in Disputed Areas OP/BP 7.60		×	

V. Financing (in USD Million)

Total Project Cost:	211.00	Total Bank Financing:	211.00
Financing Gap:	0.00		

Financing Source	Amount
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	211.00
Total	211.00

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