This action is funded by the European Union

ANNEX

of the Commission Implementing Decision on the Annual Action Programme 2017 in favour of the Republic of Uzbekistan for the Ferghana Valley Water Resources Management Project to be financed from the general budget of the Union

**Action Document for "Ferghana Valley Water Resources Management Project"**

1. **Title/basic act/CRIS number**
   Ferghana Valley Water Resources Management Project
   CRIS number: ACA/2016/039-929
   financed under Development Cooperation Instrument

2. **Zone benefiting from the action/location**
   Republic of Uzbekistan
   The action shall be carried out at the following location: Ferghana Valley and specifically targets the following irrigated areas:
   (i) Podshaota-Chodak (29,507 hectares) in Namangan Region;
   (ii) Isfayram-Shahrimardan (54,375 hectares) in Ferghana Region; and,
   (iii) Savay-Akburasoy (19,740 hectares) in Andijan Region.

3. **Programming document**
   The Multi-Annual Indicative Programme for Uzbekistan 2014-2020

4. **Sector of concentration/thematic area**
   Agriculture and Rural Development
   DEV. Aid: YES

5. **Amounts concerned**
   Total estimated cost: **EUR 230.00** millions.
   Total amount of EU budget contribution: **EUR 15.00** millions
   This action is co-financed in parallel co-financing by:
   World Bank: **EUR 186.00** millions
   Government of Uzbekistan: **EUR 29.00** millions

6. **Aid modality(ies) and implementation modality(ies)**
   Project Modality
   Indirect management with the World Bank
   The World Bank and the Government of Uzbekistan will contribute to the action by way of parallel co-financing.

7a) **DAC code(s)**
   31140 Agriculture Water Resources
   31120 Agriculture Development

7b) **Main Delivery Channel**
   World Bank – 44001
### 8. Markers (from CRIS DAC form)

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#### RIO Convention markers

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### 9. Global Public Goods and Challenges (GPGC) thematic flagships

N/A

### 10. SDGs

SDG Number 8: to "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all"", and 8.2 "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors".

### SUMMARY

The Ferghana Valley is characterized by a significant water deficit with only 70 percent of the water requirement covered in summer. Only 30 percent of water withdrawn is used for crop production. An estimated 30-35% of the irrigated area in the Ferghana valley relies fully or partially on pumping. Many pumps, on-farm irrigation system, aging and in state of disrepair have a high energy and operational cost, experience frequent breakdown and don't guaranty supply of sufficient amount of water at proper time. The concept of reliable service delivery and equitable water distribution based on demand is virtually non-existent.

This Action is relevant for the United Nations 2030 Agenda for sustainable development. It contributes primarily to the progressive achievement of the SDG 8 to "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all"", but also promotes progress towards the goal 8.2 "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors". This action is building on the framework for action of the new European Consensus on Development, providing essential services, ensuring access to affordable, safe, sufficient and nutritious food, access to land and water without damaging effects on the environment, to people.

The Project area covers 103,622 ha located in the Ferghana Valley and specifically targets the
following irrigated areas: (i) Podshaota-Chodak (29,507 hectares) in Namangan Region; (ii) Isfayram-Shahrimardan (54,375 hectares) in Ferghana Region; and, (iii) Savay-Akburasoy (19,740 hectares) in Andijan Region.

Project investments will benefit 3,000 private farms, 178,000 smallholder (dehkan) farmers and 46 Water Consumer Associations (WCAs). About 30 percent of the total Project area is allocated to orchards, 30 percent to wheat, 15 percent to cotton, 15 percent to vegetables and other crops, 10 percent to fodder crops, mainly for smallholder household animal feed.

The reasons for choosing the Ferghana Valley are: high density of population and therefore high number of families benefiting from the project, high reliance on agriculture for revenue, poor state of irrigation network leading to unstable, degraded food security and poor agriculture revenue. In addition, access to water is crucial for the success of the diversification of agriculture policy.

The Project is organized in three components: (A) Irrigation modernization; (B) Support to Agriculture modernization; and (C) Project management. The implementation modality is indirect management with the World Bank (WB) to be implemented by way of an administration agreement covering EUR 14.5 million. The EU contribution will be used for components (B) and (C).

The International Development Association(IDA) credit will mainly finance Component A of the Project which will invest in the rehabilitation of aging infrastructure to reduce water wastage and improve water availability during the summer months. Investments will include: Rehabilitation of Surface Irrigation System, Rehabilitation and Construction of Pump Stations, Construction of Wells, Flood Control and Bank Protection, and Improved Water Management.

Under Component B, the Action will help farmers maximize and sustain returns of investments in irrigation through capacity building activities in support of water management, infrastructure maintenance and agricultural productivity increase and diversification. This will include three sets of activities for which the EU funding will significantly increase the scale and impact on the ground:

1. Sustainable crop intensification and diversification: the activities will support: (i) capacity strengthening of selected farmers through demonstrations, farmer field schools, and the provision of goods and training on, inter alia, irrigation and drainage management and improved agricultural practices; (ii) technical assistance to help farmers access lines of credit

2. Strengthening capacities of local water consumer associations: The action will provide comprehensive support for Water Consumer Associations (WCAs) to significantly improve water management at on-farm and field level.

3. Pilot and scale-up innovative approaches: (i) introduction of Volumetric Payment of Operation and Maintenance (O&M) fees, (ii) pilot on the Use of Solar Energy for Irrigation and Drainage Pumps.

Under Component C, the Action will strengthen the Ministry of Agriculture and Water Resources (MAWR)’s and the Project Implementation Unit’s (PIU) capacity for project financial and procurement management, monitoring and evaluation (M&E) through the provision of goods, consultant services, training, and financing of incremental operating costs. The EU funding will provide additional support to institutional development.
1 CONTEXT

1.1 Sector/Country/Regional context/Thematic area

Agricultural context: Although the share of agriculture in output and total employment is declining, agriculture will continue to be a critical source of rural employment and an important driver of economic growth and poverty reduction. The share of agriculture in total GDP declined, from 30 percent in 2000 to 15.8 percent in 2014 as the country transitioned from agriculture to hydrocarbons and metals. The share of agricultural employment in total employment is 27 percent. Structural changes to the type of land tenure available following the restructuring of large collective and state farms has resulted in the formation of private farms with long term leases and the expansion of small household plots. These farms are now responsible for much of the growth in agricultural output over recent years, with strong productivity gains leading to increased household incomes. State planning is now confined to cotton and wheat and more flexible farming decisions have been granted for other crops and livestock leading to significant improvement in diversification. As a result, export earnings from horticulture have more than tripled from USD 373 million in 2006 to 1.2 billion in 2014 and significant productivity gains have been achieved since 2000, especially for fruits, vegetables and wheat (over 50 percent).

Irrigation and Drainage: Because of the arid environment in most of the country, irrigation 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 (4.3 million ha) of the cropland is irrigated from the Amu Darya and Syr Darya Rivers and their tributaries. Large-scale irrigation and drainage (I&D) development in Uzbekistan started in the late 1950s. The extensive waterworks, reservoirs and irrigation networks that were constructed since the 1950s are now aging. Operation and Maintenance (O&M) has over the past 25 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 being used by the crops. As a result of the deteriorating infrastructure and poor management, the country loses an estimated USD 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 USD2.0 billion. Aging infrastructure, poor management and high inefficiency together with the dependence on pumping in turn contribute to high O&M costs. More than 60 percent (USD350 million) of the entire budget of MAWR is allocated to paying for electricity to power pumping stations. Electricity for irrigation pumps accounts for 16 percent of the national electricity generation. It is estimated that a one percent increase in irrigation efficiency would lead to USD10m savings annually.

Water Resources Management: Uzbekistan is one of the most water-dependent countries in the world, with over 80 percent of the country’s renewable water resources originating in neighbouring countries. Annual water availability is close to 1,700 m3 per person and approaches stress levels. E.g., in the Ferghana Valley water shortages can be acute at times, and more so in the irrigation sector. Water shortages have worsened since the early 1990s as a result of changes in the operation regime of Toktogul reservoir located in the Kyrgyz Republic. The reservoir is now operated to generate hydropower in winter, causing flooding in winter and shortages in summer. At the same time, abundant groundwater is affecting soil quality and agricultural production in the lower parts of the valley. The first phase of the Ferghana Valley Water Resources Management Project has been successful in lowering the
groundwater table. A more rational and proactive management of groundwater may help reducing winter flooding while reducing summer shortages.

Additional challenges that the Uzbek water sector is facing include weak capacities and knowledge of modern water resources management tools, incomplete data collection systems to monitor usage and efficiency, the absence of incentives to improve performance, and the poor quality of service delivery by water service providers. In response to these challenges, the Government’s strategic objectives in addressing the water challenges in the Ferghana Valley include (i) improve water availability in summer and reduce winter flooding, (ii) mitigate the shocks of transboundary water regime changes, (iii) improve the environmental conditions in the valley, including drainage and water quality/salinity concerns; (iv) improve conveyance and application efficiency, and (v) strengthen water resources capacities of all stakeholders in the valley.

Government’s strategy: In response to these challenges, the Government of Uzbekistan (GOU) 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), introduction of participatory irrigation management (PIM), and an increasing effort to recover O&M costs. In May 2015, the President of the Republic of Uzbekistan issued a decree on the “Program for improving energy efficiency, the introduction of energy efficient technologies and systems in the fields of economy and social sphere in 2015-2019”. The program calls for the implementation of measures to improve consumer-level energy efficiency, including in particular in irrigated agriculture. These reforms, in combination with rehabilitation of irrigation and drainage assets, have resulted in important improvements. Under the Ferghana Valley phase I project (FVWRMP-I, USD66 million, closing on July 31, 2016), yields have gone up by well over 20 percent while groundwater levels have declined and salinity reduced.

Estimates of the total required irrigation and drainage infrastructure rehabilitation costs in Uzbekistan vary between USD 23 and 31 billion. A UNDP financed study conducted in 2000 conservatively estimated total costs of rehabilitation needs at USD 5.1 billion equivalent. It is clear that such requirements can only be met over a long period of time. The GOU has therefore adopted a phased approach to irrigation and drainage modernization, with a focus on priority areas in the Ferghana Valley and South Karakalpakstan.

Ferghana Valley

The Ferghana Valley (FV) is a large flat-bottomed valley surrounded by the foothills of the Western Tien Shen and Pamir mountains. The valley is almost entirely encircled by mountains with only a narrow passage to the west through which passes the River Syrdarya. The topographical feature of the valley is characterized by relatively flat valley floor generally sloping from east to west. Elevation in eastern Andijan varies from 400-500 m and that in the southern part from over 500 m along the southern border to less than 400 m in the northern part.

According to the 2011 census, out of a total population of about 29.1 million, about 8.3 million (28.5%) live in the FV. The density of population of FV is the highest in the country. In 2012, the population density of FV is estimated at 481 inhabitants per km square compared to 66 only for the country as a whole, more than 7 times higher.

There is a very dense irrigation network in the valley, characterized by very low efficiency. The irrigation and drainage (I&D) infrastructure and pump schemes are reaching the end of
their economic life and some of these are at the verge of total failure. The deteriorated I&D infrastructure combined with problems of poor water management result in low water use efficiency, causing wasted water, overloaded drainage systems and environmental degradation including rising of groundwater level, soil salinity and ultimately reduced agricultural productivity.

Water shortage for irrigation accounts for 3.34 billion m³ per year, which is about 29% of the total required amount of water.

Water disputes can further complicate the already tense political and social situation of the region.

The population is involved in farm work as permanent or seasonal workers on commercial and/or dekhan farms. Commercial farmers grow largely state procured crops – cotton and wheat. They have large land plots (over 50 ha) that they do not own, but rather lease for 30 or more years. Dekhan farmers have smaller land holdings (on average 0.11 ha), but own their land and are free to grow crops of their choosing, focus on horticulture or livestock. Unlike commercial farmers, dekhan farmer tend to rely on family members labour, rather than hired workers. Nearly half of the agricultural workers of the area, or 10.7 percent of the working-age population, are engaged in work on dekhan plots. Dekhan farms have proven the most efficient form of land use in the subproject areas. Dekhan farms effectively use their small plots. In the project area, dekhan farms occupy on average only 13.7 percent of cultivated land, they produce, however, as much as 63 percent of the agricultural gross domestic product (GDP) of three regions in Ferghana Valley – Namangan, Ferghana and Andijan.

The FV contains some of the most productive agricultural lands of the country. Wheat occupies about 35.5% and cotton about 33.7% of the cropped area. The average per ha yield of crops in FV is generally higher than the national average yields; average wheat yield in FV in 2011 is 5.7 t/ha (4.7 t/ha for Uzbekistan), 3.0 t/ha cotton yield for FV (2.6 t/ha for Uzbekistan).

The total project area is spread over about 120,000 ha, Out of about 181,000 farms, the private farms are 3,044 (1.7%) managing about 83.1% of the farm area (99,700 ha), while there are 177,900 dekhan farms (98.3%) operating about 16.9% area (about 20,240 ha)

Of this about 29.8% of the area (about 30,900 ha) is allocated to orchards (stone fruits and grapes), followed by 29.8% (30,800 ha) wheat, and about 14.9% area is allocated to cotton that is grown on about 15,400 ha. In addition to this, vegetables (greens and potato) are grown on about 10,600 ha (10.2%), while about 10.4% area (10,700 ha) is allocated to fodders, mainly for meeting household fodder needs. Rest of the area (4.9% or 5,100 ha) is allocated to other crops.

The yield level for various crops in the project boundary is significantly lower than the FV yield levels. This suggests the yield levels had significantly declined with the degradation of the irrigation infrastructure and consequent lack of availability of irrigation supplies commensurate with the irrigation requirement.

1.1.1 Public Policy Assessment and EU Policy Framework

The project is earmarked within the Government’s five-year "Industrial Modernization and Infrastructure Development Program" (2011-15) which embodies four cross-cutting development priorities: (i) to increase efficiency of infrastructure, including irrigation, energy and transport; (ii) to enhance the competitiveness of industries, such as agro-processing; (iii) to diversify the economy and thereby reduce its reliance on a few commodity exports, such as...
cotton; and (iv) to improve access to and the quality and outcomes of education, health and other social services. The project specifically supports points (i) and (iii), focusing on improving water use efficiency for agriculture and diversification of the economy, thereby reducing its reliance on water and on few commodity exports. In the agricultural sector, this program has brought an increased emphasis on agricultural diversification, especially away from cotton into horticulture and other agriculture activities.

Such project also reflects the priorities of the "Welfare Improvement Strategy of the Republic of Uzbekistan for 2012-2015", which aims to reduce the national level of low-income people from 17.7% in 2010 to 13.7% by 2015, through greater rural productivity and more income-generating activities. Key measures to achieve these objectives are (i) further structural reforms to agriculture and the diversification of agricultural production; (ii) mechanization of the sector, increased infrastructure rehabilitation and development, and greater development of agribusiness; (iii) more productive use of land and water; and (iv) greater financial stability for farm entities, supported by more market-oriented agricultural policies. These positions were confirmed on 30 April 2015 during the launch of the "second report of Uzbekistan on the Millennium Development Goals". In the framework of this report, one of the major priorities is to stimulate decent jobs in agriculture, to make the sector more water-efficient and productive and to move agricultural production higher along the value-chain.

The Law of the Republic of Uzbekistan on “Water and Water Use” adopted May 6, 1993 and amended in 2009, 2011, 2013 governs the water sector. In addition to the above mentioned law, water resources management in Uzbekistan is carried out according to the structure indicated in the resolution of Cabinet of Ministers of the Republic of Uzbekistan No. 320 dated July 21, 2003 on “Improvement of Establishment of Water Sector Management”. This resolution restructures the existing water resources management system from an administrative-territorial-based management to a basin-based water resources management system. The 13 province-based and 163 district-based water management departments, and more than 40 management organizations of inter-district canals, and other water-sector organizations were abolished. They were replaced by 10 basin management and 1 Ferghana Valley Canals Management authorities, and 52 subdivided offices of Irrigation System Authorities.

The Government Programme for Agriculture Development for 2016-2020 defines the main areas of structural reforms in the agriculture sector: (i) introduction of advanced agricultural technologies, (ii) comprehensive mechanization of agriculture and (iii) development of value addition and processing of agriculture products. It envisages the gradual release of low yielding cotton land to be used for fruit and vegetable production, planting of intensive orchards, seed multiplication and livestock.

From the EU policy perspective, proposed Action is also in line with the "EU Agenda for Change"\(^1\), adopted in October 2011, by ensuring the focus on sustainable agriculture as one of the major sectors with a multiplier impact on the economy and contribution to environmental protection, climate change prevention and adaptation. Water saving technologies and management procedures introduced under this Action as well as farming innovations for non-cotton production will sustain conversion towards sustainable agriculture.

\(^1\) COM(2011) 637 final
This action is building on the framework for action of the new European Consensus on Development, providing essential services, ensuring access to affordable, safe, sufficient and nutritious food, access to land and water without damaging effects on the environment, to people. On Planet, the Action will support better governance and capacity building for the sustainable management of water resources. On prosperity, the action will invest in factors to sustainable agriculture and diversify production systems and generate increases in productivity and jobs. Beyond partnership with the Government of Uzbekistan materialized in MIP 2014-20, joint funding with the WB is an expression of the joint actions with international organizations, while other sector related EU funded actions are jointly implemented by the GIZ and UNDP.

The Action is also consistent with the Global Strategy for the European Union's Foreign and Security Policy, mainly with State and Societal Resilience to our East and South priority, as it will contribute to "devise sustainable responses to food production and the use of water and energy through development".

The Multiannual Indicative Programme 2014-2020 for Uzbekistan adopted by the European Commission has defined rural development as the core sector of concentration for cooperation. The economic model of the country is designed to provide protection and incentives for the development of local industries as a way of stimulating the domestic production and developing its export capacity with a view to making Uzbekistan a high income industrialised economy by the middle of the century. Achieving this goal would require the implementation of reforms to diversify and broaden the economy, strengthen the human capital and improve competitiveness; first and foremost in the agriculture sector whose potential has remained largely untapped and which is due to play a key role in terms of employment, income generation and food security.

Under the New European Pact for equality between women and men (2011 – 2020) this Action is in line with the following priorities of the Strategic engagement for gender equality 2016-2019, 5th objective to fund and monitor action promoting gender equality in development and neighbourhood cooperation and humanitarian aid, This action will specifically contribute to the following objectives: (i) increasing female labour-market participation and the equal economic independence of women and men and (ii) reducing the gender pay, earnings and pension gaps and thus fighting poverty among women by ensuring equal participation of women and men to specific trainings on water management and sustainable intensive farming and water use, and access to existing funding modalities, and (iii) promoting equality between women and men in decision-making, specifically in ensuring enrolment of women in capacity building activities to give access to representative and management positions in the WCAs.

1.1.2 Stakeholder analysis

The main stakeholders are the Ministry of Finance, the Ministry of Agriculture and Water Recourses, the Ministry of Economy, the Ministry of Foreign Economic Relations, Investment and Trade, Private Financial Institutions (PFIs), the State Research Institutes, the plant protection services, regional and local executive authorities, private sector representatives, local communities, relevant Civil Society Organisations, academic institutes and other public institutions.

Overall responsibility for institutional and implementation arrangements for Agriculture and Irrigation operations are under the Ministry of Agriculture and Water Resources.
The responsibility for the operational implementation of the Action will lie with the Rural Restructuring Agency (RRA), established in 1998 under the direction of the Ministry of Agriculture and Water Resources with the specific purpose of implementing investment projects financed by International Financing Institutions (IFIs). The RRA is active in the implementation of a number of World Bank financed (and other IFIs) projects (for example, Rural Enterprise Support Project, Sustainable Agriculture and Climate Change Mitigation Project and Horticulture Development Project).

The Action will provide training to the water management staff working for district, region and basin water management institutions in the Ferghana Valley, namely the Province Department of Agriculture and Water Resources (PDWAR); Basin Irrigation System Authorities (BAISs), including Ferghana Region BAIS, Andijan BAIS, and Namangan BAIS; Hydrogeology and Ameliorative Expedition (HGAE); Pump Stations, Energetics and Communications Authority (PSECA); Main Canal/Irrigation System Authorities (MCA/AIS), and the District Department of Agriculture and Water Resources (DDAWR). Training curriculum includes technical assistance in introducing modern methods for asset management (AM) and capacity strengthening at appropriate levels.

Farmers will benefit from project investments through improvements in the quality of I&D service delivery, training in O&M and water management. Crop intensification and diversification will also create alternative employment opportunities. These benefits apply to both large cotton and wheat farmers and small dehkan farmers. In total, 181,000 farmers are expected to benefit.

Dehkan farmers will benefit from Farmer Field Schools (FFS) training and Demonstrations devoted to higher value, non-cotton/non-wheat crops. The project will help dehkan farmers to obtain a more reliable access to irrigation water, improve water availability and water allocation.

WCAs, water management staff working for district, region and basin water management institutions in the Ferghana Valley (FV) project area will benefit from the Action through training, and more accountable and transparent water management at higher levels of the irrigation system. WCAs will also benefit through lower costs for water delivery and higher O&M cost recovery.

By a specific approach, the Action will pay a specific attention to engage women in all training activities related to water management as well as intensive agriculture, in such a way that women will access to better qualified and better paid job and engage in higher value agriculture activities.

1.1.3 Priority areas for support/problem analysis

The project area covers 103,622 ha and is entirely located in the Ferghana Valley, encompassing three regions: Andijan (19,740 ha, part of Kurgantepe, Jalalkuduk, and Hujaobod and Bulokboshi districts), Ferghana (54,375 ha, Ferghana and Kuvasay districts, Ferghana city, and parts of Kuva, Altiarik and Tashlak districts) and Namangan (29,507 ha, Yangikurban district in its entirety and part of Chodak district).

The FV on average is characterized by a significant water deficit. It is estimated that on-farm water supply in the valley is only 70 percent of the water requirement in summer, and much of the valley is therefore suffering from water scarcity with some areas being under-irrigated. Climate change is expected to exacerbate the often unreliable supply from the valley’s
transboundary rivers, many of which have comparatively small catchment areas and are already prone to high run-off variability.

Despite water shortages, irrigation efficiency is low and only 30 percent of the water that is withdrawn is used for crop production. An estimated 30-35 percent of the irrigated area in the Ferghana valley relies fully or partially on pumping. Many of these pumps, which were installed during the Soviet period decades ago, have reached the end of their economic life and are characterized by a high energy use and frequent break-downs. High energy consumption and water inefficiency come at a significant expense to Uzbekistan and replacing these by more efficient pumps will help reduce operational costs while improving reliability.

The on-farm irrigation system in the three project areas is aging and is in a state of serious disrepair. There is little water control and most irrigation gates are no longer functional, or even in existence. The lack of water control and management within the on-farm system has meant that farmers do not receive the proper amount of water at the proper time. At the same time, priority in irrigation is given to cotton and wheat. In addition, as a result of hands-on involvement of regional authorities mindful of meeting cotton and wheat quotas, irrigation management has been described as “routine emergency management”. The concept of reliable service delivery and equitable water distribution based on demand is virtually non-existent.

WCAs were established in Uzbekistan to make water users more responsible and active in the operation and maintenance of local level irrigation infrastructure. WCAs serve as intermediaries between the Basin Administration of Irrigation Systems (BAIS) and the Administration of Irrigation Systems (AIS), which are government entities, and the farmers. While a recent study\(^2\) indicated that farmers welcomed the creation of WCAs in response to the chaotic water management situation that started with the dismantlement of the Shirkats, to date the performance of WCAs is very weak. Key issues include a lack of technical capacity and frequent turn-over of staff, poor accountability and responsiveness to association members, poor financial sustainability and inability to enforce water management regulations.

The same Bank study pointed to the lack of an adequate legal framework for WCAs including absence of a dedicated law on WCAs. In addition, WCAs lack proper maintenance equipment, posing significant constraints to carrying out maintenance works in a timely manner. There is a lack of knowledge among the existing WCA staff and farmers concerning O&M planning and requirements. Regular inspections and preventive maintenance is often deferred due to the lack of funds, knowledge and incentive. The consequence of this is poor water control and distribution as well as reduced field efficiency.

In order to prepare for a future with more pronounced climate variability and increased competition over water, Uzbekistan will need to modernize its irrigation service delivery. This includes further capacity strengthening and transfer of responsibility to WCAs for on-farm water management to help reduce wastage and improve cost recovery, and providing incentives to water users to use it more efficiently and productively. Local public bulk water service providers will need to adopt a more client oriented approach to service delivery that is based on performance indicators. They also need to become more professional in the management of the large number of assets so that O&M costs come more predictable and transparent, and its financing becomes the subject of proper short-, medium- and long-term

\(^2\) “Explanatory assessment of factors that influence quality of local irrigation water governance in Uzbekistan” (World Bank – June 2016)
planning. Aging assets need to be modernized to ensure that water managers have the tools to improve service delivery. It is expected that improved irrigation delivery service and a more predictable and transparent asset management planning will help increase the willingness to pay for O&M.

The project will address these challenges by pursuing innovative energy and water efficiency improvements in four distinct ways.

In the first place, more efficient technologies will be piloted that reduce non-beneficial evapotranspiration (NBET - water that is transpired by plants other than crops or that evaporates from the soil surface) and therefore improve net water availability. More importantly, water users will be given incentives to use water more efficiently, e.g., by introducing on a pilot scale volumetric measurements and payments for O&M services in a number of WCAs.

Secondly, opportunities for transferring excess winter river flow releases for use during the summer months will be taken advantage of, e.g., through investments in improved storage and managed aquifer recharge and management. Thirdly, to reduce the costs of energy inefficiency, aging pumps will be replaced by modern, more energy efficient ones. Lastly, the quality of service delivery by public irrigation service providers and WCAs will be improved through institutional reforms that will establish modern asset management systems for identifying, prioritizing and budgeting management and maintenance activities and through introduction of service based performance management. The project will also provide technical legal assistance in reviewing the respective WCA aspects in the country’s Water Code, and will offer possible improvements for effective WCA support in order to improve their performance.

Economic considerations have been applied in prioritizing investments to ensure economic viability. High lifting of water for production of cotton and wheat is unlikely to be economically viable. Changes to the cropping pattern to increase the proportion of high value horticulture crops and orchards – while at the same time reducing water requirements – may be needed to justify use of loan funds, but it is recognized that irrigation of some areas may not be economically viable regardless of cropping pattern. In addition, promotion of higher value crops, if properly developed, can have a higher impact on employment creation, which is a critical consideration in view of returning migrant workers.

Finally, the project will take part in the Feedback Mechanism (FBM) and Third Party Monitoring (TPM), the two mechanisms set up to monitor the occurrence of child and forced labour in the World Bank-financed project areas. The TPM and FBM are financed through a separate multi-donor trust fund (MDTF), which is established to support activities leading to socially, environmentally, and financially sustainable production of cotton in Uzbekistan, including with respect to child and forced labour practices. The Action will also establish a robust system for citizen engagement in all components – investment, training and reforms. In particular, the Action will enhance citizen participation in local water irrigation management entities, encourage citizen monitoring of civil works, ensure testing and demonstration activities are demand led, improve information flows to consumers, support farmer feedback, enhance transparency and accountability of WCAs, and emphasize increased participation of women in the water management structures.
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<tbody>
<tr>
<td><strong>Political</strong>: No adequate involvement of the Ministry of Agriculture, and Water Resources local governments and authorities responsible for water management affecting local water management.</td>
<td>M</td>
<td>Implementation will be closely monitored by MAWR and the WB and EU Delegation team. Local stakeholders will be closely involved in the identification, design and implementation of project investments.</td>
</tr>
<tr>
<td><strong>Economic impact</strong>: High cost of the project, insufficient additional economic activity generated by the project.</td>
<td>L</td>
<td>Overall indicative Economic Rate of Return (ERR) of the Project estimated at 14.3% with a positive Economic Net Present Value (USD 323.2 million).</td>
</tr>
<tr>
<td><strong>Financial</strong>: Local financial institutions consider the agricultural sector risky for investments and may not provide sufficient funding to private and smallholder farmers for investment in innovative technologies.</td>
<td>L</td>
<td>Through training in market-oriented business development, the Action will strengthen farmers’ capacities in developing financially viable and attractive business.</td>
</tr>
<tr>
<td><strong>Involuntary Resettlement</strong>: The Project has identified the need for land acquisition and resettlement under Component A. Specific works may require permanent or temporal land acquisition and physical resettlement.</td>
<td>M</td>
<td>A Resettlement Policy Framework (RPF) has been prepared and publicly disclosed through on 24 December 2015. For the investments in the Podshaota-Chodak area in Namangan region, a RAP has already been prepared. EU is advocating that resettlement is conducted on a rights based approach. Specific monitoring will be put in place.</td>
</tr>
<tr>
<td><strong>Child and/or forced labor (C/FL)</strong> may be used in the project area for cotton harvesting.</td>
<td>M</td>
<td>Limited cotton production (15,600ha) and availability of labour in densely populated in project area. Awareness training for all Project stakeholders on risk of C/FL. WB take appropriate measures if C/FL revealed by TPM/FBM.</td>
</tr>
<tr>
<td><strong>Stakeholder risk</strong>: Water management staff at Region and District level (AIS, BAIS) don't take full advantage of the Action in the implementation of more rational water management WCA's not interested in improved O&amp;M. GOU is not fully committed to strengthening WCA's and transferring to them the responsibility for on-farm O&amp;M.</td>
<td>H</td>
<td>Citizens and local community member engaged in identifying priority areas for project activities involved in detailed design, monitoring, and evaluation/lesson learning. Action promotes service oriented management including feedback on quality of irrigation and drainage services, levels of energy consumption and quality of works. Citizens engaged in the process of institutional reform in WCA's Grievance Redress Mechanism (GRM) will cover all aspects of implementation.</td>
</tr>
<tr>
<td><strong>Gender</strong>: Female beneficiaries not fully involved in implementation.</td>
<td>M</td>
<td>Action will engage female farmers in participatory needs and gaps identification and</td>
</tr>
</tbody>
</table>
will provide trainings in financial literacy to enable to apply to available credit lines. Action will include gender-disaggregated measures for its beneficiaries.

Environmental risks:
Excessive dust and noise generation; damage to soil and loss of the fertile layer due to excavations; excessive fumes due to the use of heavy construction machinery; generation of construction and domestic wastes on the construction sites, and impacts on water regime of natural waterways.

Rehabilitation works of existing infrastructure are relatively small scale and presents limited environmental risks. An Environmental and Social Assessment and Management Plan (ESAMP) has been prepared. The PIU will be staffed with a full time environmental specialist.

Pest Management: Agricultural intensification activities may lead to a risk of increased use of pesticides.

A Pest Management Plan has been prepared as part of ESAMP. Specific training to farmers on sustainable and agro-ecological approaches on soil fertility and pest control.

International Waterways: The project will lead to increased withdrawals from the Syr Darya basin, including through groundwater extraction. Net impact on water withdrawal from Syr Darya basin is 83.9 MCM, 0.4% of annual runoff.

The internationally agreed withdrawal limits will be respected. MAWR prepared detailed water balance. Overall water use efficiency expected to increase from 30 to 35%.

Weak implementation capacities:
The PIU may have to face increased workload and remain understaffed due to frequent staff turnover.

Negotiation will ensure that the Government will adequately staff the PIU and RRA to effectively implement the Action. Additional support will be provided under Component C to hire additional short- and long-term consultants.

Assumptions

Third Party Monitoring and Feedback Mechanism (TPM/FBM) with International Labour Organization (ILO), WB and EU partnership. International Agreements on Water Sharing with upstream and downstream country continue to apply.

3 LESSONS LEARNT, COMPLEMENTARITY AND CROSS-CUTTING ISSUES

3.1 Lessons learnt

This Action is the second iteration of the Ferghana Valley Water Resources Management Project. During implementation of FVWRMP-I a number of important lessons have been learned. Many of these relate to the need to design and implement a balanced package of investments and soft activities.

The technical design of previous projects have been adequate in general, as evidenced by the fact that the technical interventions are producing the expected results, but construction contracts have faced delays as a result of limited capacity of some of the contractors.
FVWRMP-II incorporates stricter requirements, construction supervision and contract management.

Adoption of new technologies and practices demonstrated in FFS has been lower than expected. FVWRMP-II will only demonstrate those technologies that have a confirmed relevance and affordability to farmers while the design and implementation of training and demonstration activities will be conducted in a resolutely participatory manner, including an annual evaluation and needs assessment that will inform the subsequent year’s training program.

Intended policy reforms of previous projects have often not or only partially been implemented (Water Act at draft stage). Project support has been designed in such a way that their implementation is more likely, with a separate EU grant through which the support for agricultural reforms will be financed. Under the EU funded "Sustainable Management of Water Resources in Rural Areas project" which implementation started in 2016, the review and analyses of the legal framework has been initiated and reform agenda has been approved by the newly established National Working Group (NWG) with participation from all water related institutions. The Action will work directly with local authorities in the implementation of flexible land pilots.

Limited funding allocated to support the Action WCAs has led to limited success achieved in the strengthening of WCAs. The proposed Action will allocate adequate resources to strengthen WCA and farmers’ capacities, provide computer/office equipment for the well performing WCAs as a way of providing incentives to improve performance. A study into the performance of WCAs was conducted that provided important generic lessons and a plan of action for more systematic support to WCA, including strengthening of transparency and accountability of WCAs.

Female participation in irrigation water management is traditionally limited, despite the fact that women are often the primary users of water (as dehkan farmers and tomorka owners and/or workers). Without a targeted approach that aims to provide skills to women and engage them in Action activities, women’s participation in irrigation water management will remain low. To ensure adequate participation of women, the proposed Action will pay attention to, and actively pursue, the inclusion of women in all processes, including decision-making, and, if necessary, create processes that encourage their engagement.

3.2 Complementarity, synergy and donor coordination

Synergies are guaranteed between the EU and the WB in the sector of rural development.

The EU is progressively extending its support to the sector with projects on (i) "Sustainable development in rural areas" aimed at enhancing living standards, and (ii) "Sustainable management of water resources in rural areas" aimed at contributing to sustainable and inclusive growth.

In addition the EU is closely collaborating with the Food and Agriculture Organization of the United Nations (FAO) on a potential participation of Uzbekistan to the "Food and Nutrition Security Impact, Resilience, Sustainability and Transformation" (FIRST) programme by providing a Technical Assistant for a duration of one year to MAWR to assist in carrying out a review on the Food and Nutrition Security situation of the country and subsequently developing policy and strategies to address identified issues.

In parallel, the WB has been developing projects on (i) rural enterprise, (ii) sustainable agriculture and climate mitigation, and (iii) water management. Synergies with the on-going
"Sustainable Agriculture and Climate Change Mitigation Project (SACCMP)" of the WB will be easily ensured because of the common geographic area.

Synergies with EU environment-related regional initiatives are also guaranteed with the projects on (i) "Sustainable management of water resources in Central Asia", (ii) "Regional Environmental Programme for Central Asia", (ii) "Water and Environmental Platform Phase II", and (iv) "Regional coordination and support for the EU - CA enhanced regional cooperation on Environment, Water and Climate Change II".

Complementarity is also envisaged with GIZ projects on sustainable economic development and local economic development. Among other activities, GIZ is introducing international quality standards and marketing strategies with the objective in the medium term to improve the income and employment situation of disadvantaged sections of the population. GIZ is also working on the diversification of agricultural activities by improving dairy and meat processing, as well as tomato production.

Complementarity is also ensured between the labour reform of the cotton sector and donors' projects on rural development, the EU and the WB in the first place.

The Action will collaborate with other Donors and multilateral and bilateral development agencies during its implementation: ADB, AFD, FAO, GIZ, IDB, JICA, KOICA, SDC and USAID.

From Donors side, the EU and the World Bank are engaging in policy dialogue with the Government of Uzbekistan to assist agriculture modernization and diversification while assist in framing a vision for a more market-led agricultural transformation, which is environmentally and socially sustainable, as well as economically and financially viable. In an attempt to move forward with policy reform the Government is progressively reducing land dedicated to water intensive crops, like cotton, while increasing land available and support to other areas like horticulture and livestock.

The EU Delegation will take-over in 2017 the co-chairmanship of the Water Sector Working Group that meets every quarter and which aims to ensure effective and coordinated work in the water sector between government and development partners. The SWG activities contribute to the main objectives by enhancing the effectiveness of aid in the sector, assess progress and identify further actions to achieve targeted objectives, mapping of projects planned for implementation, brainstorm on strategic issues and support the government in formulating sector plans and policies.

3.3 Cross-cutting issues

Gender

Women make up nearly half of the population of the project area, yet their economic activity, particularly in the formal economy, is much lower than that of men. It is estimated that in the agricultural sector, women earn only 65 percent of men’s average income. Women tend to be employed as temporary workers during periods of high labour demand such as cotton harvest, or work in their dekhan farms or tomorkas. They are also responsible for selling their harvest in the market. Despite the low indicators of female employment, the contribution of women to the household income is quite significant. The average income provided by women in the surveyed households amounts to 36 percent of the cumulative income of households. Women tend to work informally, without set contracts, and thus are at a disadvantage in receiving social and retirement payments, as their compensations are significantly smaller than that of
their male peers. Retired women, especially if they lose a provider, are especially economically and socially vulnerable.

Female participation in irrigation water management is traditionally limited, despite the fact that women are often the primary users of water (as dehkan farmers and tomorka owners and/or workers). Without a targeted approach that aims to provide skills to women and engage them in Action activities, women’s participation in irrigation water management will remain low. To ensure adequate participation of women, the proposed Action will actively pursue, the inclusion of women in all processes, including decision-making, and, if necessary, create processes that encourage their engagement.

The Action will pay particular attention to the involvement of women in irrigation water management and farming activities through WCAs work, Farmers Field Schools, and demonstration plots. The Action will also provide trainings in financial literacy to enable female farmers and farm workers to apply to available credit lines through other projects and credit/ banking entities (the Action will not offer its own credit lines). The local Makhalla (village) committees will have a strong role in providing specific outreach to women and providing advice on tailoring trainings to the needs of women under component B.

Anticipated female participation rates of at least 25% for trainings and 20% for access to credit are anticipated. The Action will also encourage both the extension services and financial institutions to employ women among front line services providers, to remove social and cultural barriers for women in accessing services.

The Action will include gender-disaggregated indicators for the beneficiaries, and incorporate citizen perceptions of Action activities and processes.

Environmental sustainability

The Action draws particular attention to the impacts of climate change, the promotion of energy efficiency and alternative energy in irrigation systems.

According to Uzbekistan’s Second National Communication on Climate Change (2010), intensive warming has been observed over the entire 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 increases in the frequency of record high temperatures have been observed during the last decade. With further acute water scarcity (assessment for extremely warm and dry years), flows in the Syr Darya and Amu Darya Rivers Basins might decrease by 25-50 percent. The activities envisaged under the Sustainable Agriculture and Climate Change Mitigation Project and EU & WB financed Horticulture Development and this irrigation Action would contribute to mitigating and adapting to these water scarcity, land degradation and increased GHG emission risks.

The environmental principles guiding the Common Agriculture Policy 2014-2020 will be mainstreamed at the extent possible by ensuring the EU added-value to the Action, by reinforcing the environmental and climate change components and especially diversification of production and measures that are beneficial for the environment and climate change.

The overall project is not expected to have any significant or irreversible environmental impacts. In order to address safeguards policy issues the Action Implementation Agency prepared an Environmental Management Framework (EMF). The EMF document outlines environmental assessment procedures and mitigation requirements for the subprojects which will be supported by the Action. It provides details on procedures, criteria and responsibilities
for subprojects preparing, screening, appraisal, implementing and monitoring. The document also includes Environmental Guidelines and Best Practices for different types of proposed subprojects providing analysis of potential impacts and generic mitigation measures to be undertaken for subprojects in agricultural production, agro-processing and storage and cooling manufacturing sectors at all stages - from identification and selection, through the design and implementation phase, to the monitoring and evaluation of results. Furthermore, the EMF provides a monitoring plan format which considers monitoring indicators, timing, methods, institutional responsibilities, etc. in all phases of Action's implementation. Also a pest management plan is included in the EMF to address the potential purchase of pesticides under the Credit Line component that includes a screening checklist, mitigating measures and a programme that supports the implementation of an integrated pest management (IPM) programmes as potential alternative to the use of pesticides.

The Action will support training, technical assistance and demonstration in support of the IPM programme.

4 DESCRIPTION OF THE ACTION

4.1 Objectives/results

This programme is relevant for the Agenda 2030. It contributes primarily to the progressive achievement of the SDG 8 to "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", but also promotes progress towards Goal 8.2 "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors". This does not imply a commitment by the country benefitting from this programme.

The Overall Objective of the Action is "To contribute to sustainable and inclusive growth in the rural sector in Uzbekistan in the context of a changing climate".

The specific objective is "To improve the quality of irrigation and drainage service delivery to agricultural users and boost diversification of sustainable high productive agriculture within the project area".

Success of the Action will be monitored against the following key expected results:

- Improved irrigation efficiency (water withdrawn used for crop production).
- Water users provided with new/improved irrigation and drainage services; and
- Increased diversification and intensification of agriculture.

4.2 Main activities

Since the EU is funding only selected activities, WB funded activities will be mentioned while the EU funded components will be presented in greater detail.

Component A: Irrigation Modernization (No EU Contribution in Component A.
Component A will not form part of the Administration Agreement between the European Commission and the World Bank)

This component aims to increase water supply both from surface and groundwater sources and to reduce wastage through investments in the modernization of the water distribution system. Investments will increase the capacity to control and distribute water along the canal network.
Subcomponent A-1: Rehabilitation of Surface Irrigation System:
Subcomponent A-3: Construction of Wells.
Subcomponent A-4: Flood Control and Bank Protection.

Component B: Support for Agricultural Modernization: This component will promote intensification and diversification of agriculture and improved water management. The Action will use a combination of direct training activities, information dissemination, technology demonstrations, experience sharing activities and interactions with other sources of information, financial and technical support. Intermediate results indicator includes the adoption of improved agricultural technology promoted by the Action, asset management processes established by project BAISSs, AISs and WCAs, and increased collection rate by the WCAs in the project area.

Subcomponent B-1: Agricultural intensification and diversification: support for farmers in the targeted areas in maximizing economic and financial returns of irrigation investment by: (i) using land and water more efficiently; (ii) improving land and labour productivity; and, (iii) ensuring environmental and social sustainability and climate change mitigation and adaptation. A specific focus will be given to the sustainable intensification of cotton production that could free up land for further diversification into other less-water intensive crops and fodder production. The Component will be organized around the following five set of activities:

Sustainable crop intensification and diversification (EUR 4.9M EU Contribution): The Action will help farmers maximize and sustain returns of investments in irrigation through capacity building activities in support of agricultural productivity increase and diversification. The activities will target most of the 3,000 private farms and try to reach out to the 178,000 dehkan farmers in the three targeted areas. It will support: (i) capacity strengthening of selected farmers through demonstrations, farmer field schools, and the provision of goods and training on, inter alia, irrigation and drainage management and improved agricultural practices; (ii) technical assistance to help farmers access lines of credit (including preparation of business plans) and to pilot innovative financing schemes for input supply. The objective is to introduce improved agronomic, salinity reduction and water management practices in support of crop diversification and intensification. A specific focus will be given to the sustainable intensification of cotton production that could free up land for further diversification into other less water-intensive crops and fodder production which is of high demand on local markets as livestock production is expanding.

This Action will promote crop intensification and diversification through a range of capacity strengthening activities, using Farmers Field Schools (FFS) and on-farm demonstrations. New technologies to be promoted will cover a large range of topics aiming at: (i) improving or optimizing water management, soil fertility, crop rotation, etc.; and (ii) introducing new varieties that use less water, with a strong dimension of climate change mitigation and adaptation. Particular attention will be paid to the training needs of female private and dehkan farmers, farm workers and rural women. Training and demonstrations on diversification (non-cotton, non-wheat) will use existing resources, especially under the Bank-supported HDP.
Assistance to farmers to access lines of credit: Capacity building activities will include assistance to farmers with accessing the lines of credit and preparation of business plans. The Action will not provide any line of credit itself, but will take advantage of existing credit lines implemented under other projects, or other existing suitable financing sources.

International standards for sustainable cotton production (No EU contribution): The project will help farmers adopt best international social and environmental practices and standards in sustainable cotton production as a way to better brand Uzbek cotton and increase its foreign market demand. The project will work in close collaboration with IFC-supported cotton processors and textile manufacturers. Irrigation schemes supported by the Project will serve as clearly delineated locations to ensure strict traceability of cotton produced under environmentally and socially sustainable practices.

Cotton Harvest Mechanization (No EU contribution) Where cotton harvest mechanization will be encouraged, farmer training, interaction with research and demonstrations in appropriate crop husbandry measures in preparation for cotton harvest mechanization will be conducted with a focus on suitable varieties, seeding rate, row spacing, optimal fertilization, plant growth regulators and chemical defoliation applications.

Subcomponent B-2: Improved Water Management

Strengthening capacity of water management staff working for district, region and basin water management institutions (No EU contribution)

Strengthening capacities of local water consumer associations (EUR 4.9M EU Contribution): The Action will provide comprehensive support for the 46 Water Consumer Associations (WCAs) of the targeted areas to significantly improve water management at on-farm and field level. Capacity building will consist in preparing the introduction of incentive mechanisms leading to a rational use of water (e.g. pricing), adaptation of stakeholders structures to the promoted new paradigm aiming at transforming user into customers, increasing managerial capacities (planning, accountancy, reporting …) The Action will strengthen capacities of WCAs to ensure the sustainability of the project’s investments. Activities will include establishment of WCA Support Units at the appropriate institutional level within the project area, introduction of a performance monitoring and experience exchange system that is linked to capacity strengthening efforts, support the preparation of enabling WCA legislation, higher priority to Irrigation Service Fees (ISFs) within preferential cotton account credits, forgiving debts to well performing WCAs, and enforcement measures for household plots to pay ISFs. The Action will also introduce modern methods for asset management that will help define in a systematic and transparent way the investment and timeframe required for managing, operating and maintaining irrigation and drainage systems.

WCAs will be trained in proper operation and maintenance (O&M), including asset management, regular system maintenance, prioritization of maintenance work and predictive planning and system assessment and monitoring. The training will be hands-on and will prepare annual and long-term O&M plans and rules for prioritization of emergency, regular and routine O&M. The Action will also develop a canal management pilot that will demonstrate and train staff in the use of modern
canal management tools and methods. Provision of modern tools and maintenance equipment will help WCAs undertake on-farm maintenance activities. The subcomponent will also finance study tours to expose water resources and irrigation and drainage stakeholders to a range of best water management practices.

Other stakeholders will be offered the opportunity to benefit from these supports: Ferghana Valley the Province Department of Agriculture and Water Resources (PDWAR); Basin Irrigation System Authorities (BAISs), including Ferghana Region BAIS, Andijan BAIS, and Namangan BAIS; Hydrogeology and Ameliorative Expedition (HGAE); Pump Stations, Energetics and Communications Authority (PSECA); Main Canal/Irrigation System Authorities (MCA/AIS), and the District Department of Agriculture and Water Resources (DDAWR).

**Introduction of Volumetric Payment of O&M fees (EUR 2.5M EU Contribution):**

Inefficiencies in distribution of irrigation water at the on-farm level are leading to over-abstraction of water from the source, low levels of productivity per unit of water diverted, and waterlogging and salinization. To address this issue, the Action will introduce a volumetric payment-for-O&M pilot. The pilot will be implemented in a number of WCAs that have expressed interest. Eligible WCAs will be those that grow exclusively horticulture crops (i.e., WCAs that grow cotton and wheat are not eligible). The pilot will use the crop pattern that has been worked out in collaboration between the BAIS and the WCA as the basis. That crop pattern has subsequently been converted into an irrigation schedule that indicates the duration of the supply to each outlet. Mirabs recruited by the WCAs are responsible for delivering the supply on the basis of the established irrigation schedule. Based on this irrigation schedule, the pilot will use the duration of the supply as a proxy for volume. These durations of supply are then converted into O&M payments. This conversion is done in a budget neutral manner, i.e., the average water user will not pay more for O&M services than previously. However, a farmer who is particularly wasteful in using water will pay more, while a farmer who installs drip irrigation will pay less.

**Pilot on the Use of Solar Energy for Irrigation and Drainage Pumps (EUR 1.0M EU Contribution).**

Electricity outages occur frequently in the Ferghana Valley, leading to an unreliable supply and low efficiency as a result. In addition, electricity costs account for a significant proportion of public expenditures for irrigation. E.g., 60 percent (USD 350 million) of the budget of the Ministry of Agriculture and Water Resources (MAWR) is allocated to electricity payments. At the same time, solar radiation in the Ferghana Valley is among the highest in the country. Initial experience in the use of solar energy for irrigation and drainage pumps has been acquired under the GEF-funded Sustainable Agriculture and Climate Change Mitigation Project. The results were encouraging, and support the attempt to expand the pilots into the Ferghana Valley. This activity will scale up the pilot experience and implement installation of solar energy infrastructure for drainage pumps in the Ferghana Valley. Monitoring of the experience in view of scaling up will be an important activity.

**Component C: Project Management**

This component will support strengthening the MAWR’s and the Project Implementation Unit’s (PIU) capacity for project management, monitoring and evaluation (M&E) (including,
inter alia, the areas of procurement and financial management) through the provision of goods, consultant services, training, and financing of incremental operating costs. This component will (i) support the preparation of a feasibility study and bidding documents for follow-up investment activities; and (ii) develop a comprehensive management information and data collection and reporting system on key performance outputs and impact indicators through, inter alia, baseline surveys; participatory assessments; mid-term reviews; and final evaluations.

Staffing of the PIU will be strengthened, prior to project effectiveness, to include a number of technical, financial management, M&E and safeguards (social and environmental) experts. An independent M&E consultant will be recruited to establish a Management Information System (MIS) and arrange for data collection and reporting. Detailed implementation arrangements will be spelled out in the Project Operational Manual (POM). In view of the larger project area, Vilayat-level PIUs will be established in each of the three Vilayats that are covered by the project.

**Institutional Strengthening (EUR 1.2M EU Contribution).**

The activities will strengthen the MAWR’s and the Project Implementation Unit’s (PIU) capacity for project financial and procurement management, monitoring and evaluation (M&E) through the provision of goods, consultant services, training, and financing of incremental operating costs. This component will develop a comprehensive management information and data collection and reporting system on key performance outputs and impact indicators through, inter alia, baseline surveys; participatory assessments; mid-term reviews; and final evaluations. The EU contribution will provide additional support to institutional development, including additional technical assistance to fiduciary management of the Project and resources for communication and visibility activities as per EU requirements.

4.3 **Intervention logic**

The action's strategy is to support the Government of Uzbekistan in modernizing the irrigation system in the FV where irrigated agriculture plays a crucial role in the local economy and social development of this highly populated region.

Through this project the EU and WB will further advocate for the market-led reform agenda, intensification of the cotton production and diversification into alternative agriculture activities in the Horticulture or animal production sector.

In line with principles of Aid Effectiveness and in order to avoid duplication or a segregated approach, the EU will join the donor efforts to support modernisation of the irrigation system. This Action will provide valuable opportunities in generating wider impact by reducing cost of water, reducing water waste, providing reliable water supply at time when it is needed for newly developed agriculture production.

Besides, such support is provided in the context of increasing need for job creation in rural areas, combined with a large influx of returning migrants from Russia and Kazakhstan. Hence, it is essential to participate in the economic reform of the country and to ensure internal social stability.

More efficient use of water and energy for pumping, as well as use of alternative energy will contribute to reduce causes of climate change and global warming.
The ultimate result should therefore be the enhancement of living standards and the promotion of an inclusive and sustainable growth.

5 IMPLEMENTATION

5.1 Financing agreement

In order to implement this action, it is foreseen to conclude a financing agreement with the partner country, referred to in Article 184(2)(b) of Regulation (EU, Euratom) No 966/2012.

5.2 Indicative implementation period

The indicative operational implementation period of this action, during which the activities described in section 4.1 will be carried out and the corresponding contracts and agreements implemented, is 72 months from the date of entry into force of the financing agreement.

Extensions of the implementation period may be agreed by the Commission’s authorising officer responsible by amending this decision and the relevant contracts and agreements; such amendments to this decision constitute technical amendments in the sense of point (i) of Article 2(3)(c) of Regulation (EU) No 236/2014.

5.3 Implementation on budget support component

N/A

5.4 Implementations modalities

Indirect management with an international organisation

This action may be implemented in indirect management with the World Bank in accordance with Article 58(1)(c) of Regulation (EU, Euratom) No 966/2012. This implementation entails capacity building, pilot small scale investment and project management. This implementation is justified because the proposed Action is a continuation of a previous one financed by the GoU and WB and the EU contribution will make possible a balanced share of hard-soft elements.

This modality allows for increased donor coordination, greater government ownership and reduced transaction costs for the partner country. It is providing the most appropriate funding modalities for each component of the program.

The entrusted entity would carry out the following budget implementation tasks: transferring funds to the Rural Restructuring Agency (the RRA) which will be in charge of project implementation.

The entrusted international organisation is currently undergoing the ex-ante assessment in accordance with Article 61(1) of Regulation (EU, Euratom) No 966/2012. The Commission’s authorising officer responsible deems that, based on the compliance with the ex-ante assessment based on Regulation (EU, Euratom) No 1605/2002 and long-lasting problem-free cooperation, the international organisation can be entrusted with budget-implementation tasks under indirect management.

The Commission authorises that the costs incurred by the entrusted entity may be recognised as eligible as of 01/06/2017 because the activities are expected to start as soon as the loan agreement between IDA and the Government is signed. Signature is planned for the second Quarter of 2017.

5.5 Scope of geographical eligibility for procurement and grants
The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply, subject to the following provisions.

The Commission’s authorising officer responsible may extend the geographical eligibility in accordance with Article 9(2)(b) of Regulation (EU) No 236/2014 on the basis of urgency or of unavailability of products and services in the markets of the countries concerned, or in other duly substantiated cases where the eligibility rules would make the realisation of this action impossible or exceedingly difficult.

5.6 Indicative budget

<table>
<thead>
<tr>
<th>Description</th>
<th>EU contribution (amount in EUR million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4 - Indirect Management with the World Bank - Administration Agreement</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Component A: Irrigation Modernization (not part of the Administration Agreement)</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Component B : Support for Agriculture Modernization</strong></td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Component C : Project Management</strong></td>
<td>1.2</td>
</tr>
<tr>
<td>5.9 - Evaluation, 5.10 - Audit</td>
<td>0.3</td>
</tr>
<tr>
<td>5.11 - Communication and visibility</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total (EUR million)</strong></td>
<td><strong>15.0</strong></td>
</tr>
</tbody>
</table>

Total Cost of the project: EUR 230 million (WB EUR 186 million, Government of Uzbekistan EUR 29 million).

5.7 Organisational set-up and responsibilities

The EU and the WB shall be responsible for the overall technical oversight of the Action activities, through the Steering Committee.

A Project Steering Committee (PSC) will be set up; it will be chaired by the Ministry of Economy and co-chaired by the WB and the EU. The PSC will meet at least twice a year during the whole implementation phase to discuss the progress and the co-ordination of the project together with the stakeholders. Upon request of the stakeholders, extraordinary Steering Committees can be convened. The PSC will be the body responsible for the general oversight, policy guidance and monitoring of the programme. Besides the PSC, technical working group meetings will be held regularly.

The EU DEL will be involved in periodical meetings with the project team and the GoU, in site visits, missions, analytical exercises, among other activities. The policy reform/governance agenda will be coordinated and pursued jointly with the WB and other donors especially through the Agriculture Working Group.

The WB shall be responsible for transferring funds to the Rural Restructuring Agency (the RRA) which will establish a PMU and will be in charge of project implementation. Such Agency was established in 1998 under the direction of the Ministry of Agriculture and Water Resources. Among its main responsibilities, there is the implementation of rural development
projects financed by International Financial Institutions. Although the RRA has solid project experience and keeps an independent accounting system which meets the International Financing Institutions requirements, its management capacities will be further strengthened by World Bank's loans through Component 3 "Project Management". In addition it is worth underlying that all training activities that will take place within the framework of this Action will be aimed at strengthening the capacities of participating institutions and economic players while international expertise will add value, innovation and give an international character to the whole project.

The WB coordinates and facilitates effective collaboration between the EU and the RRA. The RRA is a specialized organization that was created for implementing investment projects in the agriculture and rural sector. It implements a number of donor-funded projects, including the RESP II and Global Environment Facility (GEF) Sustainable Agriculture and Climate Change Mitigation project.

**5.8 Performance monitoring and reporting**

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process and part of the implementing partner’s responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the log frame matrix (for project modality) or the list of result indicators (for budget support). The report shall be laid out in such a way as to allow monitoring of the means envisaged and employed and of the budget details for the action. The final report, narrative and financial, will cover the entire period of the action implementation.

The Commission may undertake additional Action monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

**5.9 Evaluation**

Having regard to the importance and nature of the action, mid-term and final evaluations will be carried out for this action or its components via independent consultants and/or through a joint Commission – World Bank mission contracted and funded by the Commission.

The mid-term evaluation will be carried out for problem solving, learning purposes.

The final evaluation will be carried out for problem learning purposes, in particular with respect to the intention to launch a second phase of the action.

The Commission shall inform the implementing partner at least 3 months in advance of the dates foreseen for the evaluation missions. The implementing partner shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.

The evaluation reports shall be shared with the partner country and other key stakeholders. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner.
country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the Action.

Indicatively two contracts for evaluation services shall be concluded under a framework contract in 2018 and 2020.

From the World Bank side, mid-and-final term surveys will be undertaken by third parties to ensure measurement and follow-up of the indicators.

5.10 Audit

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audits or expenditure verification assignments for one or several contracts or agreements.

The World Bank shall provide to the EU via the World Bank’s Trust Fund Donor Center secure website, within six (6) months following the end of each Bank fiscal year, an annual single audit report, comprising (i) a management assertion together with an attestation from the Bank’s external auditors concerning the adequacy of internal control over cash-based financial reporting for all cash-based trust funds as a whole; and (ii) a combined financial statement for all cash-based trust funds together with the World Bank’s external auditor’s opinion thereon. The cost of the single audit shall be borne by the World Bank.

If the EU wishes to request, on an exceptional basis, a financial statement audit by the World Bank’s external auditors of the Trust Fund, the EU and the World Bank shall first consult as to whether such an external audit is necessary. The World Bank and the EU shall agree on the appropriate scope and terms of reference of such audit. Following agreement on the scope and terms of reference, the World Bank shall arrange for such external audit. The costs of any such audit, including the internal costs of the World Bank with respect to such audit, shall be borne by the EU.

Indicatively one contract for audit service shall be concluded at the end of the implementation of the Action through a framework contract.

5.11 Communication and visibility

Communication and visibility of the EU is a legal obligation for all external actions funded by the EU.

This action shall contain communication and visibility measures which shall be based on a specific Communication and Visibility Plan of the Action, to be elaborated at the start of implementation and supported with the budget indicated in section 5.6 above.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country, contractors, grant beneficiaries and/or entrusted entities. Appropriate contractual obligations shall be included in, respectively, the financing agreement, procurement and grant contracts, and delegation agreements.

The Communication and Visibility Manual for European Union External Action shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations.

Beyond the standard visibility requirements to be fulfilled by WB, the EU Delegation will launch an ad-hoc framework contract to cover and increase visibility of all EU funded projects in Uzbekistan.
## APPENDIX 1 - Indicative Logframe matrix

<table>
<thead>
<tr>
<th>Overall objective</th>
<th>Intervention logic</th>
<th>Indicators</th>
<th>Baselines (incl. reference year)</th>
<th>Targets (incl. reference year)</th>
<th>Sources and means of verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To contribute to sustainable and inclusive growth in the rural sector in Uzbekistan in the context of a changing climate</td>
<td>Welfare improvement in the rural areas measured by the percentage of population living below the national poverty line, 75% of whom live in rural areas</td>
<td>As of 2013, about 16% of people in Uzbekistan lived below the national poverty line, 75% of whom live in rural areas</td>
<td>Will be estimated during inception phase of the project</td>
<td>Budget households surveys, UNDP [1], WB [2] [1] [<a href="http://www.uz.undp.org/content/uzbekistan">www.uz.undp.org/content/uzbekistan</a>] [2] [data.worldbank.org/country/Uzbekistan]</td>
<td>Policy of diversification of agriculture still prevails</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific objective</th>
<th>Intervention logic</th>
<th>Indicators</th>
<th>Baselines (incl. reference year)</th>
<th>Targets (incl. reference year)</th>
<th>Sources and means of verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To improve the quality of irrigation and drainage service delivery to agricultural users and boost diversification of sustainable high productive agriculture within the project area</td>
<td>1: Water consumption per ha of cultivated land using improved mechanisms and innovative technologies 2: Agricultural production index 3: Food supply/capita in kcal/day</td>
<td>Will be estimated during inception phase of the project</td>
<td></td>
<td></td>
<td>Support from the Government of Uzbekistan to irrigated agriculture in Ferghana continues Support from Government of Uzbekistan to diversification of Agriculture still continues</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity B1</th>
<th>Intervention logic</th>
<th>Indicators</th>
<th>Baselines (incl. reference year)</th>
<th>Targets (incl. reference year)</th>
<th>Sources and means of verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural intensification and diversification [EUR 4.9M]</td>
<td>1: Percentage of surface in orchards, vegetables and berries, fourrages and other, 2: Number of rural SMEs with loans or credit lines as a result of EU support</td>
<td>1: 30.00 2: will be estimated during inception phase of the project</td>
<td>1: 35:00 2: will be estimated during inception phase of the project</td>
<td>Project M&amp;E Gender disaggregated indicator</td>
<td>Support from Government of Uzbekistan to diversification of Agriculture still continues</td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Improved Water Management</td>
<td>Number of development plans and budgets drafted and implemented in rural areas with EU support</td>
<td>will be estimated during inception phase of the project</td>
<td>will be estimated during inception phase of the project</td>
<td>Project M&amp;E</td>
<td>Decentralisation policy of the management of the irrigation system to WCA still prevails</td>
</tr>
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</tr>
<tr>
<td>B2</td>
<td>1. Strengthening capacities of local water consumer associations [EUR 4.9M]</td>
<td>Number of development plans and budgets drafted and implemented in rural areas with EU support</td>
<td>will be estimated during inception phase of the project</td>
<td>will be estimated during inception phase of the project</td>
<td>Project M&amp;E</td>
<td>Decentralisation policy of the management of the irrigation system to WCA still prevails</td>
</tr>
<tr>
<td></td>
<td>2. Introduction of Volumetric Payment of O&amp;M fees [EUR 2.5M]</td>
<td>Number of farmers using volumetric payment under the project</td>
<td>will be estimated during inception phase of the project</td>
<td>will be estimated during inception phase of the project</td>
<td>Project M&amp;E</td>
<td>Support from the MAWR to pilot still prevails</td>
</tr>
<tr>
<td></td>
<td>3. Pilot on the Use of Solar Energy for Irrigation and Drainage Pumps [EUR 1.0M]</td>
<td>Number of solar pumps installed for Irrigation and Drainage</td>
<td>will be estimated during inception phase of the project</td>
<td>will be estimated during inception phase of the project</td>
<td>Project M&amp;E</td>
<td>Government supports use of renewable energy for irrigation sector.</td>
</tr>
<tr>
<td></td>
<td>Institutional strengthening [EUR 1.2M]</td>
<td>1. MAWR has developed an information system on key performance outputs and impact indicators through inter alia, baseline surveys; participatory assessments; mid-term reviews; and final evaluations.</td>
<td>Such information system does not yet exist</td>
<td>Information system is developed and functioning.</td>
<td>Evaluation of the Project Implementation Unit (RRA)</td>
<td>MAWR implements a results driven approach for irrigation</td>
</tr>
</tbody>
</table>

| [27] |