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Report No: PAD2287

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT PAPER

ON A

PROPOSED ADDITIONAL LOAN

IN THE AMOUNT OF EUR 23 MILLION
(US$26.8 MILLION EQUIVALENT)

TO THE

REPUBLIC OF ALBANIA

FOR A

WATER RESOURCES AND IRRIGATION PROJECT

January 31, 2018

Water Global Practice
EUROPE AND CENTRAL ASIA

CURRENCY EQUIVALENTS

(Exchange Rate Effective December 31, 2017)

Currency Unit	=	Albanian Lek
US$1	=	111 LEK
1 EURO	=	133 LEK

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADF	Albanian Development Fund
CAS	Country Assistance Strategy
CPF	Country Partnership Framework
DBs	Drainage Boards
ESFD	Environmental and Social Framework Document
ESMP	Environmental and Social Management Plan
EU	European Union
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IERR	Internal Economic Rate of Returns
IWRM	Integrated Water Resources Management
I&D	Irrigation and Drainage
LGU	Local Government Unit
MARD	Ministry of Agriculture and Rural Development
MOFE	Ministry of Finance and Economy
NSDI	National Strategy for Development and Integration
O&M	Operation and Maintenance
PDO	Project Development Objective
PMT	Project Management Team
RBMP	River Basin Management Plan
SIDA	Swedish International Development Cooperation Agency
WRIP	Water Resources and Irrigation Project
WUO	Water Users Organization

Vice President:	Cyril E. Muller
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REPUBLIC OF ALBANIA

WATER RESOURCES AND IRRIGATION PROJECT ADDITIONAL FINANCING

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ADDITIONAL FINANCING DATA SHEET

Albania

Water Resources and Irrigation Project Additional Financing (P162786)

EUROPE AND CENTRAL ASIA

Basic Information – Parent			
Parent Project ID:	P121186	Original EA Category:	B - Partial Assessment
Current Closing Date:	31-May-2018		

Basic Information – Additional Financing (AF)			
Project ID:	P162786	Additional Financing Type (from AUS):	Restructuring, Scale Up
Regional Vice President:	Cyril E Muller	Proposed EA Category:	
Country Director:	Linda Van Gelder	Expected Effectiveness Date:	30-Apr -2018
Senior Global Practice Director:	Guang Zhe Chen	Expected Closing Date:	31-May-2020
Practice Manager/Manager:	David Michaud	Report No:	PAD2287
Team Leader(s):	Pieter Waalewijn		

Borrower				
Organization Name	Contact	Title	Telephone	Email
Government of Albania	Arben Ahmetaj	Minister of Finance	355-4-222-8405	Arben.Ahmetaj@financa.gov.al

Project Financing Data - Parent (Water Resources and Irrigation Project-P121186) (in USD Million)

Key Dates

Project	Ln/Cr/TF	Status	Approval Date	Signing Date	Effectiveness Date	Original Closing Date	Revised Closing Date
P121186	IBRD-82110	Effective	29-Nov-2012	14-Dec-2012	13-May-2013	31-May-2018	31-May-2018
P121186	TF-14255	Effective	30-May-2013	12-Jul-2013	23-Aug-2013	31-May-2018	31-May-2018

Disbursements

Project	Ln/Cr/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P121186	IBRD-82110	Effective	USD	40.00	40.00	0.00	21.21	16.08	53.01
P121186	TF-14255	Effective	USD	4.68	3.88	0.80	2.44	1.44	62.87

Project Financing Data - Additional Financing Albania Water Resources and Irrigation Project Additional Financing (P162786)(in USD Million)

[X] Loan [ ] Grant [ ] IDA Grant
[ ] Credit [ ] Guarantee [ ] Other

Total Project Cost:	26.75	Total Bank Financing:	26.75
Financing Gap:	0.00		

Financing Source – Additional Financing (AF)	Amount
International Bank for Reconstruction and Development	26.75
Total	26.75

Policy Waivers

Does the project depart from the CAS in content or in other significant respects?	No
Explanation	
Does the project require any policy waiver(s)?	No
Explanation	

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Pieter Waalewijn	Team Leader (ADM Responsible)	Sr Water Resources Mgmt. Spec.	Sr. WRM Specialist	GWA09
Manjola Malo	Procurement Specialist (ADM Responsible)	Procurement Specialist	Proc. Specialist	GGO03

Jonida Myftiu	Financial Management Specialist	Financial Management Specialist	FM Specialist	GGO21
Bekim Imeri	Social Safeguards Specialist	Senior Social Development Specialist	Sr. Social Development Specialist	GSU03
Christine Heumesser	Team Member	Economist	Economist	GFAGE
Drite Dade	Team Member	Sr Natural Resources Mgmt. Spec.	Sr. NRM Specialist	GEN03
Kozeta Diamanti	Team Member	Program Assistant	Program Assistant	ECCAL
Luis M. Schwarz	Team Member	Senior Finance Officer	Sr. Finance Officer	WFALN
Luz Meza-Bartrina	Counsel	Senior Counsel	Country Lawyer	LEGLE
Nikola Ille	Environmental Safeguards Specialist	Senior Environmental Specialist	Sr. Environmental Specialist	GEN03
Ntombie Z. Siwale	Team Member	Operations Analyst	Operations Analyst	GWA03

Extended Team

Name	Title	Location

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Albania	Qarku i Beratit	Qarku i Beratit	X	X	
Albania	Qarku i Korces	Qarku i Korces	X	X	
Albania	Qarku i Kukesit	Qarku i Kukesit	X	X	
Albania	Qarku i Fierit	Qarku i Fierit	X	X	
Albania	Qarku i Shkodres	Qarku i Shkodres	X	X	
Albania	Qarku i Vlores	Qarku i Vlores	X	X	

Institutional Data

Parent (Water Resources and Irrigation Project-P121186)

Practice Area (Lead)

Water

Contributing Practice Areas

Additional Financing Albania Water Resources and Irrigation Project Additional Financing (P162786)
Practice Area (Lead)
Water
Contributing Practice Areas
Agriculture, Environment & Natural Resources
Consultants (Will be disclosed in the Monthly Operational Summary)
Consultants Required? Consultants will be required

I. Introduction

1. This Project Paper seeks the approval of the Executive Directors to provide an Additional Loan in the amount of 23 million Euro (US$26.8 million equivalent) to the Albania Water Resources and Irrigation Project (WRIP) [Project ID P121186, IBRD-82110].

2. The proposed Additional Financing (AF) would provide support to scale up the WRIP and include additional investments and activities to increase the impact of the original Project. The proposed AF would finance the costs associated with the scaling up of investments in irrigation rehabilitation, and providing targeted support to municipalities and where relevant to water user organizations (WUOs) on scheme management. These investments would substantially enhance the Project's impact by nearly doubling the currently envisaged target area for new and improved irrigation service provision, while addressing immediate challenges to institutional and financial sustainability and quality of irrigation service delivery under the new regulatory and institutional framework for irrigation that was recently adopted in Albania. Support to sector planning would bring forward a pipeline of investments and policy measures to improve sector performance.

3. The proposed AF would comprise: (i) the scale up rehabilitation and modernization of irrigation schemes under Component 1; (ii) the scale up of capacity strengthening activities under Component 2; (iii) the revision of the PDO; as well as indicator targets and the introduction of four new indicators on grievance redress, gender disaggregated citizen engagement, capacity building and Water Users provided with new/improved Irrigation and Drainage (I&D) services; (iv) reallocation between Disbursement Categories; (v) changes to component costs; and (vi) a two year extension of the original Closing Date from May 31, 2018 to May 31, 2020 to allow sufficient time for the completion of activities under the additional financing.

II. Background and Rationale for Additional Financing in the amount of US$26.8 million

A. Country Context

4. Albania transitioned from being one of the poorest countries in Europe in the 1990s to gaining middle-income status in 2008. Albania was granted EU candidate status in June 2014. In the aftermath of the global financial crisis, Albania's growth decelerated, with growth rates as low as 1.9 percent in recent years. However, growth strengthened to 3.4 percent in 2016 and is projected to average 3.5 percent during 2017-2019. Continued growth, and job creation are expected to sustain poverty reduction in the coming years. GDP per capita was 4,078 US$ in 2016, and the poverty rate was 7.7 percent, while 39.1 percent of population lives below the upper middle-income poverty rate of US$5.5 (2012 figures). All figures show a steady decline in poverty rates. Growth has been supported by robust domestic demand. Services were the main driver for growth, followed by construction and agriculture. Average annual inflation has fallen to 1.3 percent in 2016. However, higher food prices lifted inflation to 2.2 percent in the first half of 2017. The National Strategy for Development and Integration (NSDI) 2015–2020 was approved in May 2016. The NSDI rests on four pillars: (a) ensuring fiscal, macroeconomic and financial stability, (b) enhancing competitiveness, (c) making public services transparent and accountable, and (d) promoting efficient use of natural resources. The operation therefore remains relevant in this context and supports the NSDI pillars. Recent elections in 2017 did not change direction and the Government continues its strong commitment to the sector.

B. Sector Background

5. Albanian rural areas are highly dependent on agriculture. Agriculture is a vital sector of Albania's economy as it provides employment for almost 50 per cent of the population in rural areas and is an important safety net, enhancing the standard of living and poverty alleviation. Agriculture sector growth has fallen behind other sectors and is currently below one percent, although the World Bank's macro poverty outlook (2017) forecasts a strengthening of sectoral growth in coming years. Despite slow progress, agriculture sector growth exhibited a positive trend. Exports in various agri-food sectors have increased, including fresh fruit and vegetables due largely to increased investments and Albania's comparative advantage vis-a-vis regional competitors given favorable weather conditions which enable an early production season. Both yields and areas under production are on the increase for most vegetables and there is a steady growth in areas under greenhouse production. Fruit, olive and citrus trees, as well as vineyards have significantly increased in recent years. This has resulted in a stabilization and slight increase in the share of agriculture in GDP, after the major drop in the share of agriculture in GDP from the 1990s until about 2007, when agriculture GDP fell below 20 percent (as of 2015 it is at 22 percent). This is different from other Western Balkan countries where the share of agriculture is significantly lower (around or less than 10 percent) and declining.

6. Irrigation is key to a more productive agriculture sector. Dysfunctional irrigation and drainage infrastructure exposes the agricultural sector to severe weather risks and climate change effects. The most irrigated crops in Albania are vegetables, forage and maize as the low summer precipitation means rain fed maize and horticulture crops cannot be profitably cultivated. Emerging changes needed in cropping patterns and irrigation technologies, as well as climate change, require modernization of structures and improved management and financing procedures to sustainably increase water productivity. In the future, this will need to be accompanied by investments in land and transportation.

7. Albania's irrigation and drainage (I&D) potential far exceeds the scope of the WRIP. While Albania receives an average rainfall of 1,485 mm/annum, an estimated 20 percent falls during summer, making irrigation indispensable for agriculture, particularly in the productive lowland zones along the Adriatic Sea. Total cultivated area is roughly 696,000 hectares. Out of an estimated 337,000 hectares (ha) that were equipped for irrigation in the early 1990s, the irrigated area dwindled to roughly 80,000 ha in the early 2000s, but due to investments in recent years the area is now close to 200.000 ha (MARD, 2017). The demand for restoration of irrigation is strong and economically justified. The WRIP program is and will increasingly be integrated within the Inter-sectoral Strategy for Agriculture and Rural Development (ISARD 2014-2020) that supports complementary investments in agriculture productivity and focus on investments and competitive sectors. Albania's recently installed Government expressed its continued commitment to the irrigated agriculture support and sector reforms.

8. The ISARD outlines the strategic interventions for the development of Albanian agriculture and rural areas to meet the challenges of the EU single market requirements and adapt the Albanian agricultural and rural development policies to the Common Agriculture Policy (CAP). The strategy provides the necessary framework and investment planning for the sector to achieve further growth and labor productivity. The WRIP investments complement these objectives by restoring productive value of the land and improve irrigation performance. The Original WRIP has

supported the development of the national Irrigation and Drainage Strategy, now under final review. It identifies main strengths, weaknesses, and opportunities to irrigation, drainage, dams and reservoirs and flood protection and supports a number of measures to ensure productive and sustainable management of I&D systems, improving water use efficiency and equitable distribution for the next decade. A new Law on Irrigation and Drainage has been recently adopted by Parliament. The law reflects the new institutional changes as regards irrigation and drainage management and defines responsibilities of all actors like municipalities, Ministry of Agriculture and Rural Development (MARD) and Water User Organizations (WUOs) and is fully aligned with the I&D strategy.

9. A major change in the sector has been the decentralization of I&D functions to municipalities and the reorganization of Regional Drainage Boards. Following the territorial and administrative reform and consolidation of local government units, a new Law on Local Governments entered into force on January 31, 2016 and new municipal structures were introduced in the 61 municipalities. As part of the implementation of this significant reform, the Government decided to decentralize irrigation management to municipalities and recognize it as a key self-function alongside with fire protection and forestry management. Six hundred irrigation dams, all secondary and tertiary irrigation channels and some primary channels (belonging to one municipality only) were transferred to the ownership of municipalities. Staffing, infrastructure and office equipment of the Drainage Boards were also transferred to the municipalities. In December 2015, 4 new Regional Drainage Boards (RDBs) were established in Lezha, Korça, Fier and Durrës by the Council of Ministers´ Decree, replacing the original 13 Drainage Boards. The new RDBs will be responsible for management of 20 primary channels serving more than one municipality and 7 big reservoirs.

10. To support the implementation of the territorial and administrative reform, Government allocated considerable funding to the municipalities in 2016, to support rehabilitation of irrigation infrastructure, cover part of the operation and maintenance costs, purchase excavators and hire the appropriate municipal staff responsible for irrigation management. Most of the municipalities have already established and staffed Irrigation and Drainage Units that will be responsible for the management of the large and medium irrigation systems. Management of small irrigation systems may revert to different institutional models. While this is a positive trend that provides new opportunities and challenges to support a more sustainable irrigation sector, it is anticipated that the decentralization of irrigation management will have effects on the short term as new systems and mechanisms must be established for all irrigation management functions. Currently, there are no functional WUOs in the country, and no immediate plans to revive them, although that is expected to evolve. Over time, it is expected that cost recovery will improve with closer oversight and stronger institutions and that improved performance benchmarking and monitoring will be possible, as well as investment planning at local government level. However, in the interim, this also presents challenges to support a more sustainable irrigation sector, with high needs for capacity enhancement, and institutional strengthening.

C. Current Status of the Water Resources and Irrigation Project

11. The *Albania Water Resources and Irrigation Project* was approved on November 29, 2012, became effective on May 13, 2013 and has a closing date of May 31, 2018. The Project is funded

by a 31 million Euro IBRD Loan and a US$3.88 million grant co-financed by the Swedish International Development Agency (Sida).

12. The Project Development Objective (PDO) is to: (i) establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins; and (ii) improve, in a sustainable manner, the performance of Selected Irrigation Systems. On December 23, 2015, a Second Order Restructuring was approved to: (i) reflect the transfer of the water resources management mandate from the Ministry of Environment to the Ministry of Agriculture and Rural Development; (ii) update the Results Framework; and (iii) effect a limited reallocation amongst the disbursement categories. The restructuring became effective on July 20, 2016.

13. **Overall Project Status.** The proposed AF is fully compliant with the Bank Policy for Investment Project Financing, and the accompanying Bank Procedure for Additional Financing which requires satisfactory implementation of the Project over the most recent 12 months. The WRIP is on track, as all current project activities can be completed by the original closing date. The PDO and Implementation Progress (IP) ratings are respectively rated Moderately Satisfactory and Satisfactory as per the most recent Implementation Status and Results Report (ISR) approved on 14 October 2017. IP had been rated Moderately Satisfactory in previous ISRs and the rating improvement reflects the rapid increase in disbursement in the past 6 months. Current disbursements of the IBRD loan amount to EUR 18.54 million (around 59.8 percent of the original financing amount) and US$2.4 million of the SIDA Grant (around 62.9 percent). Since irrigation contracts were signed in late December 2016, total disbursements and commitments have reached roughly US$28 million, thus exceeding 80 percent of the Loan. With anticipated progress on major rehabilitation contracts, the total estimated disbursements for calendar year 2017 are, respectively, 26.1 million Euro for IBRD Loan, 3.0 million Euro for Sida Grant and 6.0 million Euro for government funding, thus totaling 85 percent of all project costs. The Mid Term Review (MTR) was undertaken from January 23 to February 3, 2017 and included a pre-appraisal for the proposed AF. Appraisal was concluded in November 2017. There are no outstanding fiduciary, environmental, social or safeguard issues. Progress by component is summarized as follows:

- **Component 1**: **Dam and Irrigation and Drainage System Rehabilitation.** *This component has the objective to rehabilitate and where possible modernize I&D systems and dam infrastructure (current allocation 29.38 M Euro)* - all planned rehabilitation works for 11 dams have been completed within schedule and on time. Rehabilitation and modernization works of following five associated irrigation and drainage schemes is ongoing: Murriz Thana (Krutje & Terbuf branches), Kurjan-Strum (gravity), Koshnica (gravity) and Divjaka. Actual costs for dam and I&D design have been higher than estimated at appraisal due to a variety of factors, including the further deterioration of the schemes, a decision for more encompassing modernization, and general cost increases in construction, which only allowed 5 schemes to be constructed, covering about 50 percent of the planned area, which was reflected when the project was restructured. Efficient procurement of civil works and consultancies on the other hand generated remarkable savings of approximately 3.9 million Euro against engineering estimates at feasibility - 13 percent of the total allocated budget of the component. It was agreed that such savings would be used to support additional works that were already designed (detailed design), namely Muriz Thana V1 & V2 extremities. For these works, contracts will

be tendered shortly and for the others, contractors have made substantial progress in scheme rehabilitation and works are expected to be completed in a satisfactory manner and on schedule. When works are completed, the end target of an area of 20,000 ha to be provided with improved irrigation and drainage services will have been over achieved. From the remaining schemes, which were designed (at feasibility level), appraised and for which environmental and social impact assessments are being carried out, but for which rehabilitation works were not included under the current financing, a prioritization to carry out the detailed designs was made for those that will be considered under additional financing. Progress is "Satisfactory".

- **Component 2: Institutional Support for Irrigation and Drainage.** *The objective of this component to improve the performance of organizations that provide irrigation services (current allocation Euro 0.87 million)* – The planned irrigation and drainage strategy was developed. The I&D strategy is under final review by MARD and relevant institutions for comments. After that the strategy will be submitted for Government and National Water Council (NWC) approval. The area served with I&D service, where sustainable cost-sharing and O&M arrangements are introduced is still much below target, however, and this component is undergoing substantial changes to adapt to the current realities with the decentralized responsibilities and the role of the Local Government Units (LGUs). Capacity strengthening activities targeted at irrigation managers has been undertaken with a reported satisfactory implementation of the first year of works which included a study tour to Spain (Valle del Ebro) and 5 modules of training. Progress is "Moderately Satisfactory".

- **Component 3: Institutional Support for Integrated Water Resources Management.** *The objective of this component is to establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins (current allocation US$3.88 million co-financed by a Sida grant)* - Preparation of the planned Integrated Water Resources Management (IWRM) strategy is nearing completion and the preparation of river basin management plans (RBMPs) is ongoing. The establishment of Water Cadaster consultancy was finalized and has produced an excellent portal for managing a wide range of water resources data and information. The system is web-based and can run on multiple devices including mobile, and supports open access to critical data and information by relevant institutions and the public at large. Institutions need to be further strengthened and institutional mandates clarified to deliver on their mandates. Progress is "Moderately Satisfactory".

- **Component 4: Implementation Support** *The objective of this component is to manage project resources in accordance with the project's objectives and procedures as outlined in the Project Operational Manual (current allocation Euro 0.68 million)* - the Project Management Team (PMT) led by the Project Manager has actively followed up on all the agreed actions and strengthened project implementation monitoring of project. The Project is fully mainstreamed in the activities of several departments in MARD that are supporting project implementation oversight. The PMT has established very good coordination with other government agencies like the Delivery Unit (DU) and Technical Water Secretariat (TWS) in the Prime Minister's office, mayors and staff of beneficiary municipalities. Progress is "Satisfactory". Financial management and procurement performance is "Satisfactory".

D. Rationale for Additional Financing

14. The general context and justification for the original project remain unchanged. The need for irrigation rehabilitation in Albania far surpasses the level of funding available under the ongoing Project. The operation remains relevant and continues to support the NSDI pillars and remains fully aligned with the Country Partnership Framework (CPF) for Albania FY15-FY19[1] objective of contributing to increased agricultural productivity and sustainability of land use, in the focus area on creating conditions for accelerated private sector growth. Through its technical assistance, it continues to support strengthening of public sector service delivery, with respect to irrigation management.

15. In line with the NSDI and CPF, irrigation remains a high Government priority to support agricultural growth and rural development. The WRIP has continued to serve as an important delivery mechanism for irrigation rehabilitation and modernization and has furthermore provided a ready pipeline of investments that could be financed by the proposed AF. Additional support, beyond scheme rehabilitation and modernization, will likewise be required to address the emerging needs on the institutional front. Although irrigation scheme management has undergone several changes in the last decade, it remains problematic in both operation, as well as maintenance. Cost recovery remains low and government subsidizes irrigation management. The institutional reforms require additional support to make them successful. While the project is on track towards meeting its objectives in IWRM, the institutional framework for the operational and governance functions of water resources management requires significant further elaboration, and empowerment of its institutions to deliver on mandates, including its citizen engagement. It will be important to strengthen the implementation capacity and framework for effective practical management of water resources. The Sida grant that supported these activities will be fully disbursed and closed by the original project closing date.

16. The Government of Albania (GoA) requested Additional Financing in the amount of 23 million Euro (IBRD Loan) to scale up the scope of ongoing activities and address the evolving challenges in the I&D sector. The Project is now performing well and the Government views this as an important vehicle to stimulate agricultural growth.

17. *Support to rehabilitate/modernize additional I&D schemes*. The proposed AF would include additional investments and activities to increase Project impacts on the irrigation rehabilitation front, where the need to restore productive assets throughout the country remains high. Under WRIP (Component 1) a Feasibility Study was undertaken on 13 country-wide I&D schemes, serving 40,000+ ha. Available funding under the WRIP has enabled financing of civil works for rehabilitating and improving 5 out of those 13 schemes, targeting only 20,000 ha: Terbuf canal and Krutje canal in Murriz-Thana, Kurjan Strum, Divjaka, and Koshnica, and shortly Murriz -Thana Irrigation - Krutja (V1 & V2 extremities). When completed, the improved irrigation area would reach about 24,000 ha.

18. The proposed AF would enable financing of works for those additional areas in the aforementioned 13 schemes which exhibited good Internal Economic Rate of Returns (IERRs) and environmental and social screening. Based on the Detailed Design, additional schemes serving

[1] Report No. 94636

approximately 16,500 ha (including contingencies and dam investments, costing roughly 22 million Euro) are expected to yield acceptable IERRs, and these include, inter alia, as priority schemes: Muriz-Thana Cukas and Lushnje branches (only upstream section of Lushnje), Tregtan 2 and 3, Sllanica, Leminoti, and the Janjari (Xara) system. Since the schemes proposed for additional financing were already included in the original appraisal, and have subsequently been designed and assessed for environmental and social impacts, the investments are ready for commencement as soon as financing would be available. The Janjari scheme is the larger scheme of which the originally appraised Xara/Bufi scheme is one section. During design and appraisal, it was recognized that stand-alone investments would not be technically and economically prudent and it has been decided to widen the scope to include the wider Janjari system. This increases the irrigated area and addresses better the water balance and conveyance dilemmas in this scheme. Detailed design for the additional irrigated area and feeder canal of Janjari is included in the AF.

19. All in all, this will increase the currently envisaged target area for new and improved irrigation service provision to about 40,000 ha. Similar to the original project, investments will focus on modernization and improvement of water control and operability, and will include flow measurement devices to allow more precise water management where relevant. Before commencing investments, the Project shall seek formal commitment from municipalities and farmers on the schemes' management, operation and maintenance arrangements, where not already obtained. Depending on discussions with farmers and municipalities, the project may revive pilots on private sector participation in investments and management for highly profitable schemes and where there is broad support.

20. *Dam safety.* In coordination with national dam safety initiatives, the project will continue to support dam safety for the dams included under this project. This includes the supply and installation of dam safety instrumentation, with associated training and the extension of the dam safety panel, as well as analytical work and diagnostics. Since the Janjari/Xara system is dependent on the Janjari and Mursi dams, dam safety review was undertaken by the Panel of Experts and reviewed by the Bank and remedial investments have been included in the Project, similar to the original set of dam safety measures.

21. *Continued and expanded institutional support to irrigation and drainage.* As described above, since January 31, 2016, the government decided to decentralize irrigation management to municipalities, thereby dramatically accelerating a process of decentralization. Essentially in each municipality a new Irrigation and Drainage Unit (IDU) has been established, that is being progressively staffed. Besides being responsible for the irrigation systems they are also responsible for the management and surveillance of dams, and most of the drainage systems. While the law provides for WUOs in irrigation management, the decentralization process has effectively abolished all WUOs and scheme managers have been hired by the IDUs. Thirteen drainage boards have been merged into 4 Directorates of Irrigation and Drainage (DIDs) established in Lezha, Korça, Fier and Durrës. About 350 staff out of the 600 working previously in the former 13 Drainage Boards were transferred to the DIDs. Their roles have been redefined. All this has created a new reality on the ground. The Project's MTR highlighted these changes and supported a review of the institutional challenges and opportunities and recommended additional investments to support institutional and financial sustainability of the investments and adequate irrigation performance in this change process and beyond. The ongoing technical assistance is being redirected and further support is proposed to address immediate challenges to institutional and

financial sustainability and quality of irrigation service delivery. The Ministry of Agriculture and Rural Development is putting together all the training material used in the Irrigation training courses and consolidating a sort of Operational Manual that will be provided to the Municipalities for their use. Similarly, guidelines for setting the water tariffs are being prepared. The general consensus about the performance of the Municipalities in the management of irrigation systems is that they perform their work with enthusiasm and dedication but often are limited in their task by the means of work (transportation and available maintenance machinery) but also technical tools that allow them to improve their performance. The additional financing would include the following support delivered through hands-on training in the Municipalities:

(i) Development of an M&E system in all the Municipalities supported by the Project. This will allow them to assess the progress made in the achievement of the targets that annually they will establish themselves and provide the Ministry of Agriculture and Rural Development with updated information of the progress made. The system should be simple, useful for management, as well as sector monitoring and benchmarking. External technical assistance in collaboration with local staff will be needed to develop the system.

(ii) Implementation of an Integrated Irrigation Information Management System in interested municipalities. The system would provide for an integrated management of all the information needed to properly manage the irrigation systems. As such systems are already available in other countries, the Bank recommends the Ministry select one and adapt it to the local conditions of the irrigation in Albania.

(iii) Transportation is still a problem for some of the staff of the Irrigation Departments Units (IDUs) of the Municipalities, particularly for the water masters. Resources available under the original project will be topped up to provide adequate transportation for effective scheme management.

(iv) Under the new legislation, Municipalities play a major role in the operation of the irrigation facilities. However most of the planning of the investment works to be done are prepared outside the Municipality. Municipalities should take a major role in planning the development activities that concern their territories. Hence, it will be useful that some planning exercises are initiated in some municipalities with guidance from the concerned ministries and technical assistance. This will be tried out in the municipalities where the Project is operating within a national framework for sector planning and if found appropriate extended nationally. This planning exercise should be framed within the government annual financial allocations and maximize private sector finance that is reasonable to expect in the future.

22. *Municipal sector planning and maximizing finance for development.* In most areas in Albania irrigation is a necessity for irrigated agriculture, while the farming system needs a further boost for maximizing returns on investments. Irrigated agriculture has important social and external benefits and multipliers, but the conditions are not usually present for private investments in common infrastructure. The WRIP addresses this conundrum by investing in catalytic upstream infrastructure. Experience show that investments in backbone infrastructure increase both the service delivery to farmers as well as catalyze private investments in on-farm irrigation and agriculture. There are areas in the country and in the project area where commercial farming is already generating significant private investment on-farm and the Project will support the

Government, through the above activities, in improving diagnostics and planning and financing tools to better inform, facilitate and test different models of private investment. This will take primarily the form of cost-sharing on critical Management, Operation and Maintenance functions, but also in facilitating investments in downstream agricultural production and eventually in infrastructure investment financing to further enhance service delivery. Further support to private investment in irrigation will be a phased approach once reliable service is reasonably restored and other constraints in agriculture development are addressed. Sustainable cost sharing arrangements and attracting private financing for management, operation and maintenance are targets under the project which will be reinforced with the additional financing.

23. *Institutional support for Integrated Water Resources Management.* On the one hand, the project is on track towards meeting its objectives in IWRM and important building blocks for an integrated approach to water resources management are in place. The coordination functions of the broader water sector are currently being reorganized with the water administration and policy functions no longer in MARD. The TWS continues to be the central coordinating water institution in the country. The institutional framework for the operational and governance functions of water resources management requirements is much less clear now and requires significant further elaboration, and empowerment of its institutions to deliver on mandates. This relates to the functions of water allocation, river basin planning, pollution control, monitoring, implementing the data management chain for decision making; and finally inspection/ monitoring and responding to infringement of laws and regulations. It will be important to strengthen the implementation capacity and framework for effective practical management of water resources. The Sida grant that supported these activities will be fully disbursed and closed by original project closure and limited ongoing support will be required for operationalization of policy and plans; and for further support in the sector.

E. Consistency with Country Partnership Framework (CPF)

24. The proposed AF is aligned with the World Bank Group's CPF for Albania that focuses on reducing poverty and promoting shared prosperity. The proposed AF is fully aligned with the CPF's focus areas of creating conditions for accelerated private sector growth; and strengthening public sector management and service delivery. It does so through its contribution to increased agricultural productivity and sustainability of land use.

F. Potential Risks and Mitigation

25. The overall risk rating for the proposed AF is **Substantial** as reflected in the Systematic Operations Risk-rating Tool (SORT) due to potential risks that may arise on the following fronts: (i) fiduciary (increased procurement workload); (ii) governance (e.g. contract management for the ongoing and new civil works); and (iii) the post-construction sustainability of the irrigation investments. This risk assessment is consistent with the assessment that was undertaken during the FY16 restructuring to reflect the current operational realities and project changes. The main risks and associated risk management measures can be summarized as follows:

- *The Governance and the Institutional Capacity for Implementation and Sustainability risk,* are both rated as **Substantial**. Political changes may shift the attention of implementing agencies away from implementation, thus holding up key reforms. The Bank has demonstrated willingness to help the Government build political consensus with political parties and

stakeholders. The cooperation established with the European Union (EU) Delegation for policy support could help maintain momentum on key sector reforms. At the same time, there are key sustainability risks associated with the institutional capacity at municipal level since decentralization. The project is addressing these through targeted support at this level under component 2.

- *The Fiduciary risk* is rated as **Substantial**. An increase in the procurement workload for MARD is anticipated. It is worth noting that current procurement processes have largely been completed and the envisaged procurement activities would be similar in nature to those undertaken under the ongoing Project. Contract management would be supported through the hiring of additional technical staff under the PMT. PMT and MARD staff would be further trained on contract management.

- *The Environment and Social risk* is rated as **Moderate**. Land rights in Albania are sometimes uncertain and citizen engagement has been weak and unevenly applied in the past. This risk is mitigated by: (i) training the PMT staff and contractors on safeguards; (ii) inclusion of *contractors'* safeguards obligations in the contracts; and (iii) monitoring of their compliance by the PMT and supervision consultants. Social safeguards risks are deemed lower than during preparation of the original Project as a result of capacity building provided within the context of the WRIP. The PMT has a full-time staff in charge of monitoring compliance with social and environmental safeguards instruments.

- *Stakeholders risk* is rated as **Substantial**. Key risks in the I&D sector include: (i) weak organization of water users with poor O&M cost recovery; (ii) the inability of farmers to provide a sufficient level of financial contribution for O&M; (iii) inadequate level of capacity of participating Drainage Boards to maintain an effective O&M system; and (iv) limited capacity of municipalities to provide I&D services to the schemes which have been recently transferred to them. The AF will add institutional support under Component 2 as stated above to address this risk.

26. Furthermore, there is a strong commitment on the part of MARD to address and manage these risks.

III. Proposed Changes

Summary of Proposed Changes	
The proposed changes associated with the Additional Financing comprise: (i) scaling up of ongoing activities under components 1, 2 and 4; (ii) revision of the PDO; as well as modifications to the Results Framework (RF); (iii) reallocation between Disbursement Categories: (iv) changes to component costs; and (v) a two-year extension of the Closing Date.	
Change in Implementing Agency	Yes [ ] No [X]
Change in Project's Development Objectives	Yes [X] No [ ]
Change in Results Framework	Yes [X] No [ ]

Change in Safeguard Policies Triggered	Yes [ ] No [X]
Change of EA category	Yes [ ] No [X]
Other Changes to Safeguards	Yes [ ] No [X]
Change in Legal Covenants	Yes [ ] No [X]
Change in Loan Closing Date(s)	Yes [X] No [ ]
Cancellations Proposed	Yes [ ] No [X]
Change in Disbursement Arrangements	Yes [ ] No [X]
Reallocation between Disbursement Categories	Yes [X] No [ ]
Change in Disbursement Estimates	Yes [X] No [ ]
Change to Components and Cost	Yes [X] No [ ]
Change in Institutional Arrangements	Yes [ ] No [X]
Change in Financial Management	Yes [ ] No [X]
Change in Procurement	Yes [X] No [ ]
Change in Implementation Schedule	Yes [X] No [ ]
Other Change(s)	Yes [ ] No [X]

Development Objective/Results

Project's Development Objectives

Original PDO

The Project Development Objective (PDO) is to: (i) establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins and (ii) improving, in a sustainable manner, the performance of Selected Irrigation Systems.

Change in Project's Development Objectives

Explanation:

The PDO wording is rephrased to align better to actual indicators. Sustainability is a higher-level objective to which the PDO contributes, but cannot claim attribution. The revised PDO aspect of 'improved irrigation service delivery' would be measured by the water users provided with improved irrigation & drainage services. The program will continue to address irrigation service delivery improvement with a view towards technical, institutional and financial sustainability. First and foremost, this is achieved through technically sound modernization that goes beyond repairs and improves low-cost manageability where relevant; and support to the institutions to improve service delivery in terms of management and maintenance. It aims to achieve financial and institutional sustainability through setting up financially sustainable cost-sharing mechanisms, strengthening scheme management skills and by addressing scheme rehabilitation needs with modernization, targeted at improved operability, water use efficiency; and thus with a view of longer-term preservation of satisfactory performance with limited need for external financing under normal circumstances. While the building blocks and the institutional capacities should be in place by project completion, it would be premature to claim longer term sustainability achievements.

Proposed New PDO - Additional Financing (AF)

The Revised Project Development Objective (PDO) is to: (i) establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins; and (ii) improve irrigation service delivery in Selected Irrigation Systems.

Change in Results Framework

Explanation:

The RF will be updated to reflect the impact of the AF and findings at the Mid-Term review mission. Some target values will be revised due to the scale up of activities and in line with the extension of the closing date by two years. Some Intermediate Results Indicators will be revised, defined and simplified. Additional indicators related to citizen engagement have also been added. The following are the details:

PDO Indicators:

The target value of the PDO indicator, "Direct project beneficiaries", has been increased from 40,000 to 80,000 to reflect the anticipated additional beneficiaries from the additional schemes to be financed under the AF. Direct beneficiaries are understood as farmers benefitting from the irrigation scheme and their spouses and children in the household; as well as beneficiaries from activities under components 2 and 3, and people benefiting from reservoir rehabilitation beyond irrigation users, where relevant. The results will be confirmed by a survey to be conducted on the additional irrigation schemes, similar to the one carried out for the original schemes. The results of the survey and the methodology will be captured in the project's M&E system.

Introduction of one new PDO Indicator:

"Number of Water Users provided with new/improved irrigation and drainage services", disaggregated by sex. This indicator identifies water users from the overall list of beneficiaries. Water users will be identified from billing records by municipalities.

Intermediate Results Indicators:

The target value of "Area provided with irrigation and drainage services (ha)", has been increased from 20,000 ha (target value after last restructuring) to 40,000 ha.

The target value of the sub-indicator "Area provided with irrigation and drainage services - improved (ha)", has increased from 20,000 ha to 40,000 ha. All area provided with irrigation and drainage services under the project was already equipped in the past and improvement refers to the rehabilitation and modernization of these schemes.

Since there is no new irrigation development, the sub-indicator: "Area provided with irrigation and drainage services - new (ha)" is irrelevant and would have a target value of 0 ha.

Expanded definition and measurement of "share of area served with I&D service, where sustainable cost-sharing and O&M arrangements are introduced". The formulation of the previous indicator was not very precise or measurable and the revision now includes intermediate steps that would constitute success.

Introduction of two new Intermediate Indicators:

"% of project-supported RBMPs and investments informed by citizen feedback through consultations (records disaggregated by gender, % female participation)".

"% of grievances responded and/or resolved in relation to the delivery of project benefits"

These are indicators that have already been in use by the implementing agency and are now included in the project's results framework to underscore the importance of citizen engagement, particularly during processes of institutional change. A public consultation plan has been part of project implementation and will continue to be part of the Additional Financing.

Compliance

Covenants - Additional Financing (Albania Water Resources and Irrigation Project Additional Financing - P162786)

Source of Funds	Finance Agreement Reference	Description of Covenants	Date Due	Recurrent	Frequency	Action
IBRD	Schedule 2. Section I.A.1	The Borrower shall maintain, for purposes of carrying out the Project, the following organizations throughout the period of implementation of the Project: (a) The Project Steering Committee, (b) The Project Management Team, established within MARD		☒	Continuous	New
IBRD	Schedule 2. Section I.C.1 (and further)	Carry out the following actions: (a) implementation of the ESFD; (b) preparation and furnishing to the Bank for approval of, site-specific ESMPs in accordance with the ESFD; and (c) implementation of said site-specific ESMPs that have been approved by the Bank, all in a manner satisfactory to the Bank.		☒	Continuous	New
IBRD	Schedule 2. Section I.C.3	Take all necessary actions to minimize (...) any involuntary loss by persons of shelter, productive assets or access to productive assets or income or means of livelihood (...); and whenever implementation of the Project (...) gives rise to Displaced Persons, andprior to commencement of any works related to such implementation (...) provide to the Bank a site-specific resettlement action plan.		☒	Monthly	New
IBRD	Schedule 2. Section I.C.6a	To ensure the safety of the dams to be rehabilitated under the Project and/or included in the Selected Irrigation Systems, the Borrower, through MARD, shall maintain the Panel of Dam Safety Experts, with qualifications, resources and experience, satisfactory to the Bank and which Panel of Dam Safety Experts is responsible for advising MARD on matters related to safety of said dams (...)		☒	Continuous	New

IBRD	Schedule 2. Section I.C.6b	Prior to commencement of tendering for works to be carried out under the Project: (i) prepare (...) detailed and time-bound plans, relating to said dams, for: (A) construction supervision and quality assurance; (B) instrumentation; (C) operation and maintenance; and (D) emergency preparedness; and (ii) finalize said plans (...). Thereafter, implement such plans.		☒	Semi Annual	New
IBRD	Schedule 2. Section I.C.6c	After completion of construction works at said dams, have independent qualified professionals carry out periodic safety inspections of said dams.		☒	Yearly	New
IBRD	Schedule 2. Section II.	The Borrower, through MARD, shall furnish to the Bank each Project Report not later than forty five days after the end of each calendar semester, covering the calendar semester		☒	Semi Annual	New

Conditions

Source Of Fund	Name	Type
IBRD	Article IV-4.01	Effectiveness

Description of Condition

The Additional Condition of Effectiveness consists of the following, namely that the Borrower has updated and adopted the Project Operational Manual prepared in a manner satisfactory to the Bank.

Source Of Fund	Name	Type
IBRD	Schedule 2. Section III.B1.	Disbursement

Description of Condition

No withdrawal shall be made: (a) for payments made prior to the Signature Date; (b)until the amounts allocated to Category 1(b) of the table under Article IV.A. 2 of the Original Loan Agreement shall have been fully disbursed; (c) in respect of the followingPartsof the Original Project: (i) activities under Part 3 of the Project; and Part 2(a)(i) of the Project.

Risk

Risk Category	Rating (H, S, M, L)
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial

6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	
OVERALL	Substantial

Finance

Loan Closing Date - Additional Financing (Albania Water Resources and Irrigation Project Additional Financing - P162786)

Source of Funds	Proposed Additional Financing Loan Closing Date
International Bank for Reconstruction and Development	31-May-2020

Loan Closing Date(s) - Parent (Water Resources and Irrigation Project - P121186)

Explanation:

The AF will entail extending the WRIP closing date by around two years to enable the completion of the envisaged civil works on the additional irrigation schemes.

Ln/Cr/TF	Status	Original Closing Date	Current Closing Date	Proposed Closing Date	Previous Closing Date(s)
IBRD-82110	Effective	31-May-2018	31-May-2018	31-May-2020	
TF-14255	Effective	31-May-2018	31-May-2018	31-May-2018	31-May-2018

Change in Disbursement Estimates (including all sources of Financing)

Explanation:

The disbursement estimates have been revised to reflect the additional funding.

Expected Disbursements (in USD Million) (including all Sources of Financing)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual	13.00	19.00	19.00	15.74	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative	13.00	32.00	51.00	66.74	0.00	0.00	0.00	0.00	0.00	0.00

Allocations - Additional Financing (Albania Water Resources and Irrigation Project Additional Financing - P162786)

Source of Fund	Currency	Category of Expenditure	Allocation	Disbursement %(Type Total)
			Proposed	Proposed

IBRD	USD	(1) Goods, works, non-consulting services, consultants' services and Training	26.75	100.00
IBRD	USD	(2) Incremental Operating Costs	0.00	100.00
		Total:	26.75	

Reallocation between Disbursement Categories

Explanation:

A reallocation is proposed under the disbursement categories of the original loan. 130,000 EUR will be reallocated from category 2 (incremental operating costs) to category 1b (Goods, works, non-consulting services, consultants' services and training for parts 1,2 and 4 of the project). This is a minor adjustment based on expenditure projections. It does not entail any change in scope or nature of project activities, implementation arrangements or other amendment.

Ln/Cr/TF	Currency	Current Category of Expenditure	Allocation		Disbursement %(Type Total)	
			Current	Proposed	Current	Proposed
TF-14255	USD	GD(exc. P. 3(c)), CS,TR,TS, IOC	3,536,000.00	3,536,000.00	100.00	100.00
TF-14255		GOODS - Part 3(c)	339,000.00	339,000.00	55.00	55.00
TF-14255		Designated Account	0.00	0.00	0.00	0.00
		Total:	3,875,000.00	3,875,000.00		
IBRD-82110	EUR	GO(exc.3(C),CW,Non-CS,CS, TR-Part 3	48,411.00	48,411.00	100.00	100.00
IBRD-82110		GO, CW,Non-CS,CS,TR - Parts 1,2,4	30,006,527.00	30,136,527.00	100.00	100.00
IBRD-82110		GOODS - Part 3(C)	240,000.00	240,000.00	45.00	45.00
IBRD-82110		INCREMENTAL OPERATING COSTS	220,000.00	90,000.00	100.00	100.00
IBRD-82110		REFUND OF PREPARATION ADVANCE	407,562.00	407,562.00	0.00	0.00
IBRD-82110		Designated Account	0.00	0.00	0.00	0.00
IBRD-82110		Designated Account	0.00	0.00	0.00	0.00
IBRD-82110		Designated Account	0.00	0.00	0.00	0.00

IBRD-82110		FRONT END FEE	77,500.00	77,500.00	0.00	0.00
		Total:	31,000,000.00	31,000,000.00		

Components

Change to Components and Cost

Explanation:

Components 1, 2 and 4 will receive additional financing to scale up the investments under the project and enhance project outcomes. The closing date for grant financing for component 3 will not be extended, and there will be no additional financing to component 3. The name of component 1 is corrected in World Bank systems from Rehabilitation and Improvement of Dams, Irrigation, Drainage and Flood Control Systems to Dam and Irrigation and Drainage System Rehabilitation. This is the correct name as per loan agreement and PAD and this is therefore no substantive change.

Component 1 Additional Funds will finance: i) Rehabilitation of additional I&D schemes; ii) supply and installation of dam safety instrumentation, with associated training; iii) Construction supervisory services; iv) local consultancies to support technical oversight by the Ministry and safeguards compliance; v) dam safety panel extension; and vi) strategic engineering studies for pipeline investments. The table below presents the irrigation schemes:

Schemes considered for rehabilitation under AF	**River Basin**	**Municipality**	**Hectares for rehabilitation**
Tregtan 3	Drin-Buna	Has	160
Tregtan 2	Drin-Buna	Has	28
Sllanica	Semani	Kucove	260
Leminoti	Semani	Maliq	400
MTH Lushnje (upstream)	Semani	Lushnje	1,940
MTH Cukas	Semani	Lushnje	9,760
Janjari System (including Xara)	Vjosa	Konispol	4,000
Total			**16,548**

Areas for rehabilitation are based on the Final Detailed Design and are based on economic returns, priority for gravity schemes, resizing based on water availability and current yields of reservoirs.

Other schemes from original appraisal, subject to the same selection criteria, may be considered, in the course of implementation.

Component 2 Additional Funds will finance: i) Technical Assistance to Monitoring and Evaluation of irrigation performance and benchmarking; ii) Technical assistance for sustainable and performance based management improvements at IDUs, financing and investment planning at municipal level; and iii) limited targeted specialized and just-in-time support to operationalization of the law on irrigation and drainage at national level and in support of institutional performance strengthening at scheme and

municipal level, such as irrigation service fee setting mechanisms, private participation in financing of irrigation in pilot irrigation schemes (e.g. Xara); and support to WUO strengthening as required. In consultation with stakeholders, the project will continue to promote minimum levels of women participation in scheme management decisions. This will be fully harmonized with ongoing support in the original project.

Component 3 No additional funds will be allocated to this component at this time, but support will be continued to the operationalization of the water cadaster and its integration into the multi-sector cadaster under development; and ongoing dialogue on institutional strengthening in the water resources sector with a view towards supporting the national sector program in a longer-term engagement.

Component 4 Additional Funds will finance ongoing implementation support consultants in the PMT, including Environmental & Social Safeguard and Monitoring & Evaluation Consultant; training and associated costs for the period of extension. In addition, the AF will finance consultancy services for Monitoring & Evaluation (M&E) end Project survey for the Component 1, 2 & 4, for which an Interim Evaluation is carried out under the current Project. Some minor modifications to the fiduciary arrangements are required. These are detailed in Annex 2.

Since the IBRD loan is expressed in euro, the US$ table below also incorporates exchange rate updates since the last restructuring, and component amounts have been restated to show the current US$ equivalents. The euro table below shows changes in euro to better reflect the amount of additional financing in same currency, consistent with the loan agreements:

(component changes expressed in euro, loan currency)

Current Component Name	**Proposed Component Name**	**Current Cost (M Euro)**	**Proposed Cost (M Euro)**	**Action**
Rehabilitation and Improvement of Dams, Irrigation, Drainage and Flood Control Systems	Dam and Irrigation and Drainage System Rehabilitation	29.29	51.52	IBRD AF of 22.229 M Euro
Institutional Support for Irrigation and Drainage	Institutional Support for Irrigation and Drainage	0.87	1.47	IBRD AF of 0.600 M Euro
Institutional Support for Integrated Water Resources Management	Institutional Support for Integrated Water Resources Management	3.97	3.97	No AF for IBRD or Sida (Grant in US$)
Implementation Support	Implementation Support	0.68	0.85	IBRD AF of 0.171 M Euro
	Total:	34.81	57.81	**23.00 M Euro AF**

(component changes expressed in US$, system currency)

Current Component Name	**Proposed Component Name**	**Current Cost (US$M)**	**Proposed Cost (US$M)**	**Action**

Rehabilitation and Improvement of Dams, Irrigation, Drainage and Flood Control Systems	Dam and Irrigation and Drainage System Rehabilitation	37.40	60.02	Revised
Institutional Support for Irrigation and Drainage	Institutional Support for Irrigation and Drainage	1.12	1.71	Revised
Institutional Support for Integrated Water Resources Management	Institutional Support for Integrated Water Resources Management	4.85	4.02	Revised
Implementation Support	Implementation Support	0.73	0.99	Revised
	Total:	44.10	66.74	

Other Change(s)

Implementing Agency Name	Type	Action
Ministry of Agriculture and Rural Development	Implementing Agency	No Change

Change in Procurement

Explanation:

The Additional Financing will follow the new procurement regulations. A PPSD has been developed. Responsibilities remain with the same implementing agency and PMT.

Change in Implementation Schedule

Explanation:

Due to the extension of the Closing Date to May 31, 2020, the implementation schedule is being aligned accordingly to enable completion of the new activities under the AF. Current activities of the Project are expected to be completed as scheduled on May 31. 2018, except works on Krutje V1 & V2 and related supervisory services.

Appraisal Summary

Economic and Financial Analysis

Explanation:

The average cost of modernization is just over 1,405 USD/ha, which is very cost effective. Most of the schemes have a traditional farming system with a mix of forage, vegetables and commodity crops. Fruit trees are present in some schemes. Some schemes have a more commercial farming system, most notably Xara. For prioritization of schemes, the economic and financial analysis at scheme level, were updated, and will be further refined once detailed design costs are available. The economic fundamentals for the project are sound. With better information becoming available, continued dilapidation and general cost increases and a focus on incremental modernization to improve post-construction operability, the average anticipated cost for these schemes is about 40-50 percent higher than at appraisal. With conservative estimates on yield increases and commercialization the project is still economically viable and it is expected that financial benefits to farmers in the irrigation scheme can accrue under the AF as expected under the original project. The NPV as well as ERR are positive for all schemes, except Tregtan 2, and demonstrate a relatively high rate of return between 13 percent and 43 percent. The results show that investment in the schemes is largely favorable from an economic point of view, with a potential to yield sizable returns in particular from vegetable and forage crop production, thus justifying the investment. For the overall project, at a discount rate of 6 percent and 30 years implementation, the resulting economic NPV is US$192 million and ERR 31 percent, showing low sensitivity to increases in investment cost, hence the similarity of values as obtained for the original project.

Land use patterns are changing due to the fact that farmers are responding to market demands. Farmers in Fier and Berat have increased the areas planted with olive groves and vineyards. In Korçë, farmers have increased the production of apples, potatoes and vegetables. In Berat, Fier and Korçë districts, farmers are expected to increase production of grain, forages, vegetables and also olives and grapes after rehabilitation. Fier and Berat districts have recently witnessed a massive spread of greenhouses for the cultivation of 'early vegetables'. These earn a considerable amount of money to the farmers. It is expected that farming households continue to diversify towards higher value crops, and allocate a portion of their current farming areas to it. Without investments in public infrastructure, these developments will, however, be expensive and eventually unsustainable as they rely on groundwater or drainage pumping. Public investments in irrigation provides the solid base to facilitate private investments in commercialization and modernization of the agricultural system. Annex 3 provides the detailed economic and financial analysis and the underlying assumptions and sensitivity analysis. It also integrates GHG accounting as presented in Annex 4.

Technical Analysis

Explanation:

The schemes selected for rehabilitation and modernization under the Additional Financing had been selected under the original project's feasibility study. The feasibility study provides the current status of the area and the infrastructure, the demand for irrigation, the technical parameters and options for rehabilitation. Specific options were selected with associated investment levels. Preliminary designs opt for incremental modernization of schemes to allow better operation (e.g. introduction of duckbill weirs, selective lining, re-shaping, etc). Gravity fed areas have been prioritized over pump schemes given the better economics, as well as past performance. Schemes where lifespan of the reservoir is short due to high siltation have been selected for spot-repairs only. About 70 percent of the rehabilitation area under AF is completing the modernization of Muriz-Thana complex (Lushnje and Cukas branches); and the ongoing detailed design follows similar principles to those agreed during the review period of the schemes under original financing. Modernization will enable better service delivery, higher water productivity through better operational efficiency, and better maintenance. It will be important that the institutional changes are supported well so that scheme water management, operation and maintenance are well addressed and well financed.

In all schemes, important crops grown are wheat, maize, and alfalfa. For Kurjani, Strumi and Murriz Thana, vegetables, grapes and olive trees are the dominant crops. Vegetables (potatoes, tomatoes, cucumber, cabbage, carrots, and onions), and fruit trees (apples, cherry, plum, pear, fig, olive trees, oranges and vineyards) are generally grown in Fier, Berat and Korçë with irrigation. These areas are also the main areas for greenhouse production, which helps farmers supply markets all year round. In the low lying areas which include Fier and Berat Districts, the total planted surface is dominated by forages (42-45 percent), with Lucerne accounting for more than 90 percent of this. Vegetables, maize, olive trees, vineyards and fruit trees are also cultivated in these areas. Cropping intensities are in a number of cases well above 100 percent, confirming the high value agriculture that is being practiced. Agricultural production is generally of distinctly lower value in Kukës. In fact, farmers grow agricultural products for family consumption, with only a few of them taking the products to markets. This is the result of, among others, a current lack of investment in I&D infrastructure.

Crops	Trees	Forage	Veg.	Maize	Wheat	Other	Total
Tregtan 3		39	15	62	44	-	160
Tregtan 2		6	4	8	10	-	28
Sllanica	42	127	34	22	35	-	260
Leminoti	24	139	86	51	100	-	400
MT Lushnje (upstream)	220	726	343	247	90	314	1,940
MTH Cukas	1,107	3,651	1,727	1,244	452	1,579	9,760
Janjari (including Xara)	1,800	400	1,100	700	-	-	4,000
Total	3,193	5,087	3,310	2,335	731	1,893	16,550
% of total	19%	31%	20%	14%	4%	11%	100%

Social Analysis

Explanation:

The project activities for the additional finance will be of the same nature of the investments in the original loan. Nature of civil works are the same and thus, OP/BP 4.12 on Involuntary Resettlement will stay as triggered. Key project features which may necessitate permanent land acquisition are the same as in the original loan: temporary or permanent access roads to sub-project sites, to borrow pits/quarries and disposal areas; land needed to source borrow or quarry materials (although the arrangement of willing buyer-willing seller will be the best option in this case), and land needed for modifications to the layout of the irrigation system or reservoirs. One area of special concern is encroachment over and around primary conveyance canals. This issue may be resolved by re-routing or other engineering options; however, necessitates remedies which are in accord with OP 4.12. The RPF and ESFD disclosed in August 2012 will stay as overall guiding documents for preparing social related safeguard documents. The ESFD has been updated and redisclosed in October 2017 to reflect new institutional responsibilities. During the implementation of the original loan the designs avoided any interference in the private land both for the dam rehabilitation and scheme rehabilitation works. Transfer of the irrigation assets to Local Governments will not affect compliance of Social Safeguards given that the project will still be implemented by the PMT within MARD. The decentralization of assets could improve the stakeholder engagements and public outreach related to the plans for rehabilitation and the proposed works. Local Government could help to strengthen the process whereby the needs of beneficiaries are better incorporated in the technical designs.

Environmental Analysis

Explanation:

The proposed activities will not trigger any new safeguard policies. The environmental categorization "B" of the Water Resources and Irrigation Project, continues to apply. The Project specific

Environmental and Social Framework Document, prepared and disclosed in 2012 remains as overall guiding document for preparation of safeguards-related instruments. Site-specific ESMPs for rehabilitation of irrigation schemes covered under the Additional Financing are prepared and disclosed following the same process already established for rehabilitation of irrigation schemes under the original Project. MARD will continue to follow the same management and reporting arrangement as already established under the Project. The PMT will be strengthened by additional junior environmental and social safeguards specialist, to cover the increased physical scope of the Project activities. The quality of the safeguards implementation, monitoring and reporting under the original Project is assessed as satisfactory, with the primary concern being the delays in reporting on ESMPs implementation.
Risk
Explanation:
The overall risk rating of the proposed AF is commensurate with the overall risk to implementation of the parent project and is assessed "Substantial".

27. **Grievance mechanism.** The implementing agency, MARD, has a robust mechanism in place with a hotline for affected parties to call and register complaints. In addition, it has an indicator - "Barriers constructed to diminish noises during the construction phase (Yes/No)" for monitoring purposes at construction sites. To date there aren't any complaints due to the proactive management by the PMT. In addition, the PMT received reports from supervisors at the site that barriers to diminish noises for construction works were constructed by contractors, therefore no complaints have been recorded relevant to noises caused by construction works. As indicated, the Project will be introducing two new indicators, one of which will be on grievance redress, in order to monitor and capture what is already being undertaken in the project and the additional schemes.

28. **Citizen Engagement.** The project incorporates measures for citizen engagement and public involvement. Identification of specific project-financed activities is normally driven by local and municipal-level demand and will be subject to public consultations and stakeholder feedback.

29. **Gender.** INSTAT Census combined with Survey data, carried out for the areas covered by the 5 selected priority irrigation schemes indicate that female population living in the Project area is at about an average of 48 percent of the total population, split by specific zones as in the following: (i) Divjaka 47 percent; (ii) Murriz – Thana (Lushnje) 48 percent; (iii) Kurjan – Strum (Roskovec) 52 percent; and (iv) Koshnica (Devoll) 47 percent. Thus, the target beneficiary population (including adults and children (from 0 to 14 years old), is estimated at around 80,000 farmer population, whereas target female beneficiary population is estimated at 50 percent of the habitants. Because of the generally conservative environment in rural Albania, the project under the Additional Financing will continue to address the gap between men and women's participation and representation through social mobilization activities under Component 2 and 3. The project will continue recording gender-segregated beneficiary numbers and will also record female participation in consultations on project activities. Strategies adopted under the original project to target and include women in consultations on the project will be continued under AF. During implementation, the project will carry out further gender analysis and monitor gender-sensitive indicators.

30. **Riparian Notification.** OP 7.50 was triggered for the parent project and on August 10, 2012 an exception to the requirement of notifying other riparian countries under OP 7.50 was approved by the Regional Vice President. This exception was granted on the basis that: (i) relevant project activities involved rehabilitation of the already existing dams and reservoirs (irrigation canals and pipes were not included during the first year of project implementation); and (ii) the project activities did not involve works and activities that would increase the original command area, or change the original scheme's nature. Consequently, the determination was made that the exception set forth in paragraph 7 (a) of OP 7.50 was justifiable since the project (i) would not adversely affect the quality or quantity of water flows to the other riparians; and (ii) it will not be adversely affected by other riparians' water use. The additional financing will cover sites with impacts that were already included in the original design. While the targets for rehabilitation have increased from 35,975 ha to 40,000 ha, the rationale for the exception still applies as the scope and location of activities is not changed. It is therefore still anticipated that in the schemes benefiting from rehabilitation and modernization water abstraction will decrease. No investments in new irrigation schemes or expansion of existing schemes will be allowed beyond their original footprint.

31. **Climate co-benefits.** Analysis of recent climate data confirms that temperatures are increasing in Albania, with average warming over the next 40 years of about 1.5 ºC. Forecast precipitation declines are greatest in the key May-to-September period, when precipitation is already lowest, particularly in the southern and northern mountains. Floods are especially problematic in the spring period, when flooding can delay or prevent planting of summer crops, with climate change potentially increasing the frequency and magnitude of flooding. Due to Albania's vulnerability to climate change and its impact on water resources, the Additional Financing will continue to support its response to safety concerns, by addressing dam safety which will allow the reservoirs rehabilitated under component 1 to play a better role in reducing floods and providing water for irrigation. Modernizing irrigation itself is a key adaptation activity in addressing the largest weather and climate risk of precipitation and avoids crop failure. Components 1 and 2 are fully geared towards sustainable modernization of irrigated agriculture.

32. **GHG Analysis**. The net emissions of the project are -306,586 tCO_2-eq over the 22-year life of the project, as assessed at feasibility level. Gross **emissions** are expected to be -351,960 tCO_2-eq. These gross emissions are negative due to an improved ability of croplands to absorb carbon compared to a business-as-usual scenario. These gross emissions also include the emissions savings of -45,374 tCO_2-eq from existing perennial crops that would exist with or without the project. Net annual average emissions are expected to be -15,998 tCO_2-eq. The largest contributor to emissions savings would be from improved land management and improved carbon management in soils due to land use changes enabled by reintroducing efficient and intensive irrigation, which would contribute to net emissions savings of -412,771 tCO_2-eq compared to the baseline scenario. This project demonstrates how improved land use can help improve the ability of cropland to absorb existing GHGs in the atmosphere. Two activities would be emissive: switching currently fallow land to annual cropland (105,100 tCO_2-eq) and constructing a new irrigation system (1,085 tCO_2-eq).

33. The reason improved agronomic practices and water management result in negative emissions is due to improvements to soil carbon sequestration through such activities. According

to the EX-ACT analysis, the project's LUCs and improved agricultural practices would improve soil CO_2 sequestration potential in the project area by -308,117 tCO_2-eq. (N_2O emissions due to these activities would go up by the equivalent of 446 tCO_2-eq.)"

IV. World Bank Grievance Redress

34. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

ANNEX 1: Results Framework

Project Name:	Albania Water Resources and Irrigation Project Additional Financing (P162786)		Project Stage:	Additional Financing	Status: DRAFT
Team Leader(s):	Pieter Waalewijn	Requesting Unit:	ECCWB	Created by:	Ntombie Z. Siwale on 13-Jan-2017
Product Line:	IBRD/IDA	Responsible Unit:	GWA03	Modified by:	Pieter Waalewijn on 16-Dec-2017
Country:	Albania	Approval FY:	2018		
Region:	EUROPE AND CENTRAL ASIA	Financing Instrument:	Investment Project Financing		
Parent Project ID:	P121186	Parent Project Name:	Water Resources and Irrigation Project (P121186)		

Project Development Objectives

Original Project Development Objective - Parent:

The Project Development Objective (PDO) is to: (i) establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins and (ii) improving, in a sustainable manner, the performance of Selected Irrigation Systems.

Proposed Project Development Objective - Additional Financing (AF):

The Revised Project Development Objective (PDO) is to: (i) establish the strategic framework to manage water resources at the national level and at the level of the Drin-Buna and Semani River basins; and (ii) improve irrigation service delivery in Selected Irrigation Systems.

Results

Core sector indicators are considered: Yes

Results reporting level: Project Level

Project Development Objective Indicators

Status	Indicator Name	Corporate	Unit of Measure		Baseline	Actual(Current)	End Target

No Change	Preparation of an agreed IWRM strategy	☐	Yes/No	Value	No	No	Yes
				Date	27-Nov-2012	05-Dec-2017	31-May-2018
				Comment			
New	Water Users provided with new/improved irrigation and drainage services	☐	Number	Value	0.00	0.00	35000.00
				Date		05-Dec-2017	31-May-2020
				Comment			
New	Water Users provided with irrigation and drainage services - Female	☐	Number Sub Type Supplemental	Value	0.00	0.00	4000.00
Revised	Preparation of two agreed RBM plans for the Drin-Buna and Semani basins	☐	Yes/No	Value	No	No	Yes
				Date	27-Nov-2012	05-Dec-2017	31-May-2018
				Comment			
Revised	Direct project beneficiaries	☐	Number	Value	0.00	0.00	80000.00
				Date	27-Nov-2012	05-Dec-2017	31-May-2020
				Comment			
No Change	Female beneficiaries	☐	Percentage Sub Type Supplemental	Value	0.00	50.00	50.00

Intermediate Results Indicators

Status	Indicator Name	Corporate	Unit of Measure		Baseline	Actual(Current)	End Target
Revised	Number of dams rehabilitated in compliance with international dam safety standards	☐	Number	Value	0.00	11.00	13.00
				Date	27-Nov-2012	05-Dec-2017	31-May-2020
				Comment			
New			Number	Value		0.00	15.00

	Project-supported RBMPs and investments informed by citizen feedback through consultations	☐		Date		05-Dec-2017	31-May-2020
				Comment			
New	Grievances responded to and resolved in relation to the delivery of project benefits	☐	Percentage	Value	0.00	0.00	80.00
				Date		05-Dec-2017	31-May-2020
				Comment			
New	Records disaggregated by gender, % of female participation	☐	Percentage	Value		0.00	40.00
				Date		05-Dec-2017	31-May-2020
				Comment			
Revised	Area provided with new/improved irrigation or drainage services	☒	Hectare(Ha)	Value	0.00	0.00	40000.00
				Date	27-Nov-2012	05-Dec-2017	31-May-2020
				Comment			
Revised	Area provided with new irrigation or drainage services	☒	Hectare(Ha)	Value	0.00	0.00	0.00
			Sub Type	Date	27-Nov-2012	05-Dec-2017	31-May-2020
			Breakdown	Comment			
New	Area provided with improved irrigation or drainage services	☐	Hectare(Ha)	Value		0.00	40000.00
			Sub Type	Date		05-Dec-2017	31-May-2020
			Breakdown	Comment			
Revised	Preparation of an agreed irrigation strategy	☐	Yes/No	Value	No	No	Yes
				Date	27-Nov-2012	05-Dec-2017	31-May-2020
				Comment			
No Change	Establishment of a functional Water resources database	☐	Yes/No	Value	No	No	Yes
				Date	27-Nov-2012	05-Dec-2017	31-May-2018
				Comment			

Revised	Share of area served with I&D service, where sustainable cost-sharing and O&M arrangements are introduced	☐	Percentage	Value	0.00	0.00	80.00
				Date	05-Mar-2015	05-Dec-2017	31-May-2020
				Comment			

ANNEX 2: Revised Implementation Arrangements

ALBANIA: Water Resources and Irrigation Project Additional Financing (P162786)

Overall legal and institutional changes

1. Legal and institutional changes in the sector were mostly already reflected in the recent restructuring. An update on ongoing reform is provided here, and this confirms the direction of reforms, as well as the opportunities and challenges this represents. An in-depth analysis was conducted on the current status, practices and effectiveness of current institutional setup in Albania in light of these changes. The main conclusions of this participatory assessment at Ministry and municipality level are that while the reform certainly has potential for improvements in the sector there is a strong need for guidance, technical assistance and clarification on mandates, roles and financing in the current set-up. A number of recommendations were drawn up and have been adopted in the proposed AF under Component 2.

2. At the institutional level, during appraisal of the original project, management was shared between MARD and MOE. However, since January 15, 2016, MARD (then called Ministry of Agriculture, Rural Development and Water Administration, since September 2017 just Ministry of Agriculture and Rural Development as Water Administration functions were moved out) has been the sole lead agency for the implementation of WRIP. According to the CMD Nr. 91, dated February 04, 2015, the PMT at MARD has absorbed all responsibilities of former PMT at MOE. The PSC is chaired only by the Minister of MARD, whereas the composition with regard to other members of PSC remains the same, consisting of representatives of technical departments of MARD and Ministry of Finance and Economy (MOFE), representatives of the DBs, RBCs, WUA and LGs involved in project implementation. This was reflected in the 2016 restructuring and no further changes are implemented. Greater emphasis will be placed on capacity strengthening and therefore involvement in project decision making by LGs.

3. At the central level with a new decree[2] of Council of Ministers, MARD has undergone a major reform of the I & D subordinated centralized structures. The new decree has established 4 Regional Drainage Boards (RDB) based in Lezha, Korca, Fier and Durres. The new RDBs have absorbed the previous 13 region (qark) based Irrigation and Drainage Boards.

4. At local level, a Territorial and Administrative Reform which took place in 2014 and became effective with the local elections of 2015 has reduced the number of LG units from 373 to 61 and new responsibilities including extended authorities over irrigation and drainage was assigned to the LG units with the new law 139/2015 "on local self – government".

5. Integrated Water Management. Since July 2014, the TWS was established in the Prime Minister's Office under the NWC to strengthen the coordination among agencies dealing with water management, which became one of the six priorities of the current Government in September 2013. In February 04, 2015, the responsibilities of the integrated water resources management were shifted from the Ministry of Environment to MARD; the latter became the sole implementing

[2] DCM no. 1107, date 30.12.2015 "On the establishment of the Regional Drainage Boards of Lezhe, Durres, Korçe, and Fier".

agency for the Project and the Department of Water Policy became the focal point for IWRM related activities. An Integrated Planning and Management Group (IPMG) on Water and its 4 sub-thematic groups – Water for People, Water for Food, Water for Industry and Water for Environment - comprising of government institutions and donor agencies, have convened regularly in the last year. Under the leadership of the TWS and based on the outcome of the sub-thematic groups, the first draft of a National Sector Program (NSP) has been prepared. The future harmonization of the NSP with the IWRM strategy will be an important task in ensuring a consistent approach to the country's critical water resources management issues. With the recently incoming government, the water administration functions are to be moved to a new water institution, and will no longer be with MARD. Since the Project is in its final stage with regards to the outputs in Water Resources Management, it has been agreed the MARD will continue to be the implementing agency and continue to coordinate with TWS and the new institution to be established on quality control and coordination.

6. **Irrigation.** Following the territorial and administrative reform and consolidation of local government units, a new Law on Local Governments entered into force on January 31, 2016 and new municipal structures were introduced in the 61 municipalities. As part of the implementation of this significant reform, the Government decided to decentralize irrigation management to municipalities and recognize it as a key self-function alongside with fire protection and forestry management. In December 2015, 4 Regional Drainage Boards were established out of 13 Drainage Boards. Six hundred irrigation dams, all secondary and tertiary irrigation channels and some primary channels (belonging to one municipality only) were transferred to the ownership of municipalities. Staffing, infrastructure and office equipment of the former 13 Drainage Boards were also transferred to the municipalities. The new RDBs will be responsible for management of 20 primary channels serving more than one municipality and 7 big reservoirs.

7. To support the implementation of the territorial and administrative reform, Government allocated considerable funding to the municipalities in 2016, to support rehabilitation of irrigation infrastructure, cover part of the operation and maintenance costs, purchase excavators and hire the appropriate municipal staff responsible for irrigation management. Most of the municipalities have already established and staffed Irrigation and Drainage Units that will be responsible for the management of the large and medium irrigation systems. Management of small irrigation system may revert to different institutional models. A new Law on Irrigation and Drainage has been adopted. The new law reflects the new institutional changes as regards irrigation and drainage management and defines responsibilities of all actors like municipalities, MARD and Water User Organizations (WUOs); and is fully aligned with the I&D strategy. It is expected that the decentralization of irrigation management will have effect on the beneficiaries and sustainability of WRIP final results, but also on the patterns and extent to which municipalities will be able to take over the central government role, as well as the responsibilities that may be vested in WUOs; hence the proposed additional support at this level.

8. **Donor Coordination.** The Technical Water Secretariat and IPMG have been actively coordinating the sector programs in the process of developing the country's first national sector program for water, expected in the first half of 2017. Under the Additional Financing, discussions will continue with the EU Delegation, Austrian Development Agency, GIZ, Dutch Embassy,

regarding harmonization and alignment with government policy, supporting EU water directive preparation, and alignment with the proposed sector program.

Project management arrangements for additional financing

9. **Project management.** The PMT led by the Project Manager has actively followed on all the agreed actions and strengthened the monitoring of the implementation of project activities. The Project is fully mainstreamed in the activities of several departments in MARD that are supporting project implementation oversight. PMT has established very good coordination with other government agencies like the DU and TWS in the Prime Minister's office, mayors and staff of beneficiary municipalities. Considerable progress that has been achieved in Project implementation and the satisfactory performance of both procurement and financial management. Once the irrigation contracts are executed as per the agreed schedule and there is clarity on the strategic framework for IWRM, this project will be on a satisfactory trajectory to meeting its objectives. Given the expected increase of workload and need for close supervision of contracts implementation, it was agreed that PMT would hire two local engineers and one full time environmental and social safeguards and Monitoring & Evaluation specialist.

Financial Management and Disbursement Arrangements

10. Current Financial management performance is Satisfactory. As for the original financing, MARD will have primary responsibility for overseeing all aspects of the implementation of AF activities including fiduciary aspects. MARD has adequate capacity to maintain adequate FM systems in compliance with World Bank policies. The same financial management arrangements will be maintained for the AF. The Interim Financial Report and Annual Project financial statements would present both sources of financing (the loan and additional financing) and the respective project expenditures. The accounting system is able to capture project expenditures by source of funds.

11. **Financial management staff.** MARD is responsible for the project financial management arrangements, as lead Implementing Agency, and will continue to act as such for the operation of the additional financing. Within MARD, this function is covered by the Secretary General, the Finance Directorate and assisted by the PMT, consisting of a team of MARD employees (civil servants) and external consultants for fiduciary. There is an excellent track record and high observed compliance in disbursement and reporting with respect to the existing Bank project. No additional staff would be required as a result of the proposed additional financing.

12. **Budgeting.** The operation is relying on country public budget and planning systems. The MARD is responsible for the preparation of the Project medium term forecasts and annual budgets, in line with the approved implementation plans and procurement plans. The project annual budget requests are based on the forecasts and technical inputs, provided by the assigned technical staff, procurement specialist as well as agencies involved in the Project. In this process MARD is supported by the PMT. The Project annual budgets, as part of the MARD annual budget documents, are finally approved by MoFE and submitted for parliament review, scrutiny and endorsement. Project budget will include investment spending forecast to be financed by the loan, grant and additional financing proceeds as well as counterpart funds. The investment spending

forecast for the additional financing, prepared in accordance with its Implementation Plan, as agreed, should be included in the Medium Term Plan (2018 – 2020), and the Budget for Y 2017.

13. **Accounting and maintenance of accounting records.** MARD has in use an acceptable financial management software, which is adequate for maintaining and producing financial information for project management use. The Project loan and grant proceeds receipts, government financing, and payment for the project eligible expenditure are accounted separately, and financial transactions captured by source of financing, expenditure category and project activity, defined in the Project chart of accounts. The additional financing would be accounted as a separate source of financing, and new activities will be introduced. Accounting records for all project expenditure will be maintained by category and by component. The financial records will be maintained on the cash receipts and disbursements basis of accounting. Periodic reconciliation will be performed between general ledger and Project bank accounts and WB disbursement data.

14. **Periodic financial reporting.** Quarterly Interim Financial Reports (IFRs), containing: (i) statement of sources and uses of funds (with expenditure classified by category and component), and (ii) contract monitoring, are submitted to the Bank within 45 days of the end of each quarter. The format and content of IFRs is agreed with the Bank and defined in POM. The annual Project Financial Statements (PFS) are prepared in accordance with International Public Sector Accounting Standards on a cash basis. The financial reports are prepared in EUR. The operations of the additional financing, starting from the year the first withdrawal will occur, will be consolidated in the IFRs and annual PFS.

15. **Internal controls.** The Project operation manual is a comprehensive internal control framework for approval and selection of the applications, authorization of the payments, and execution of the payments, accounting and reporting as well as information security. It defines the institutional and implementation arrangements and fiduciary requirements. The manual would need to be updated to reflect the additional financing operations, disbursement and funds flow arrangements. The same control activities and authorized signatories will be applied to additional financing.

16. **Annual audit.** The project financial statements, as described above, will continue to be audited annually by independent auditors acceptable to the Bank. The existing audit arrangements will be followed whereas the Ministry of Finance and Economy (MoFE) appoints the audit firm on an annual basis as part of an overall agreement for the audit of the non-revenue earning Bank-financed and assisted projects in Albania. The annual audit fee is covered by the MoFE. The audit terms of reference are used for the projects covered by this agreement and are cleared annually by the Bank. Despite the MoFE's arrangements, MARD is responsible for delivering to the Bank, within six months of the closing of each fiscal year and also at the closing of the project, the audited financial statements. Pursuant to World Bank Policy on Access to Information (July 2010), the MARD will have to disclose the audit reports within two months of their receipt from the auditors, by posting the reports on their website. Following formal receipt of these reports, the World Bank will make them publicly available as well. There are no overdue project audits from MARD.

17. **Funds flow and disbursements**. The operation is disbursing on the basis of standard Bank disbursement methods for investment projects. Project funds, from either the loan and additional

financing accounts, flow from the Bank, either (i) via the pooled DA, through advances on the basis of documentation specified in the Disbursement Letter, or (ii) by using the direct payment method or the Special Commitment. For both the original loan and additional financing a pooled designated account will be used. The use of a pooled Designated Account from the two sources of funds requires the sequencing in the use of funds by financing instrument, IBRD # 8211 for category (1-b) first and additional financing subsequently for category (1), while category 2 under the original loan will cover incremental operating expenditure over the entire project period. Once the additional financing will become effective, eligible expenditure incurred under either original loan category (1-b) or AF category (1), will be applied for documentation of the pooled DA balance advanced on the sequence established above. Once the loan and additional financing proceeds are deposited in the pooled DA, the Treasury Department at MoFE, at MARD request, will transfer the funds from DA to the respective project bank accounts that are maintained in a commercial bank, acceptable to the MoFE. From there MARD is able to make Project expenditure payments to third parties i.e. consultants, contractors and suppliers. These bank accounts (one denominated in EUR and one Albanian Leke) are managed by MARD.

18. The additional financing will disburse on the basis of advances, direct payments and special commitments; and the same disbursement arrangements will be followed. Use of advances will be documented through Statements of Expenditures, while records will be used for direct payments. Further details on the project disbursement arrangements will be provided in the AF Disbursement Letter.

Table 1: Expenditure Categories (EUR)

Category	**Amount to be financed by the Loan (in EUR)**	**Percentage of expenditures to be financed (exclusive of taxes)**
(1) Goods, works, non-consulting services, consulting services and Training under the Project with the exception of Part 3.	22,942,500	100%
(2) Front End Fee	57,500	
Total	23,000,000	**100 %**

Procurement

19. Current procurement performance is satisfactory. Procurement under the AF will be carried out in accordance with the World Bank Procurement Regulation for IPF Borrowers dated July 2016. The responsibility for the project implementation will remain unchanged. It will continue to be with MARD through the PMT, including procurement, project coordination, day-to-day project management, and fiduciary function. The procurement function will be covered by a procurement officer in the PMT. While the procurement officer has experience under the Bank Guidelines, she needs to gain more experience on the Bank's New Procurement Policy Framework. The procurement risk assessment is assessed through PRAMS and is expected to be high. To mitigate this risk, the Bank team will continue to provide support and training. The AF will be processed through STEP system for which training and hands on support will be provided to the PMT.

20. **PPSD:** A Project Procurement Strategy for Development (PPSD) was developed in order to plan procurement packages, describe the risks and mitigation measures and assess the client's procurement capacity. The PPSD was received and reviewed by the World Bank on October 24, 2017 and is part of the package.

21. **Procurement Plan.** A draft Procurement Plan (PP) for the AF was prepared as part of the PPSD and submitted to the Bank on October 24, 2017. The need to carefully and realistically schedule procurement and cost estimates was discussed. The Procurement Plan might be updated annually or as necessary to reflect the actual needs of the project and will be subject to the Bank's prior review.

Monitoring and Evaluation

22. The PMT with the support of the M&E consultants had prepared a Mid Term Review Report which was discussed during the MTR mission undertaken from January 23 to February 3, 2017. The report provided valuable information on the status of the program and the achievement of results. A number of issues in the results framework require further clarification to ensure consistent reporting. MARD has assigned three staff of its own, respectively, from the I & D Directorate and IT Department to operate the M&E system that is in place. A full project impact evaluation will be conducted towards the end of the original project period, specifically for Component 3 almost completed. For the Component 1, 2 & 4 still ongoing, an Interim Evaluation will be carried out and the Final one will be done under extended project planned along the AF, when these Components are finalized, by updating the Interim Evaluation with final measurements on the ground results.

ANNEX 3: Economic and Financial Analysis

ALBANIA: Water Resources and Irrigation Project Additional Financing (P162786)

Background

1. Improving irrigation and drainage infrastructure is of crucial importance to enhance revenues and contribute to agriculture sector growth. Improving the performance of I&D requires not only reducing irrigation costs and water losses of the existing irrigation systems and releasing water for tail end users, but also increasing the value of products per drop of water used for irrigation. Hence, improving I&D may entail two strategies: (i) rehabilitated and improved physical structures; and (ii) facilitated environment for increased production, productivity, recovered area for irrigation, and changed cropping patterns from low value grains (wheat and maize) and forages, to higher value crops (HVC), mostly fruits and vegetables. The first set of outputs would reduce irrigation water losses; while the second would further increase the productivity of land (value produced per hectare) and of water (net value produced per cubic meter of irrigation water).

2. The Economic and Financial Analysis (EFA) for this AF included (i) a review of a recent financial analysis to show that participation in the project is financially feasible from a household's point of view; (ii) an economic analysis of 9 targeted irrigation schemes to show the profitability (Economic Net Present Value, ENPV, and Economic Internal Rate of Return, ERR) of investing in each scheme; and (iii) an economic analysis of the entire projects to show the value of the project to society, accounting for the aggregated incremental net benefits of all irrigation schemes and the project's environmental benefits, expressed by valuing the project's net carbon balance (Annex 3) at a social value or carbon.

Financial analysis

3. It is expected that financial benefits to farmers in the irrigation scheme can accrue under the AF as expected under the original project. For the original project a detailed analysis was conducted taking into account changing crop rotations and increased productivity due to irrigation rehabilitation and changes in inputs and production costs for an average situation in the project area. Crop and livestock models were established for the "without project" (WOP) and "with project" (WP) scenario. In the WOP scenario, the most important crops are wheat, maize, and alfalfa, with alfalfa and other pastures used for feeding livestock (1 or 2 cows) owned by the farm family. Households' incomes were expected to increase as a result of increasing land and water productivity. Out of 16 crops and livestock systems, cultivated on one hectare (ha) land,[3] the average increase in net income was calculated at 146 percent and median increase 75 percent (vegetable with pressure irrigation and tomatoes). The minimum income increase was found to be 31 percent for fodder crops (alfalfa) and the maximum for 567 percent for summer grains (maize), which showed a high yield of 60 percent increase under irrigation and relatively low increase in cost of 20 percent.

[3] Winter grains (wheat), summer grains (maize), white beans, potatoes, vegetables, vegetables with pressure irrigation; fodder crops (alfalfa), vegetables (tomatoes), existing grapes, existing grapes with pressure irrigation, existing olives. Existing apples, new apples, new apples with pressure irrigation, livestock (dairy cows).

4. It is expected that farming households diversify towards higher value crops, and may decide to allocate approximately 11 percent of their current farming areas to it. As a consequence, an increase in household income was expected: at 38 percent for a 1.8 ha farm; 51 percent for a 1.2 ha farm; and 108 percent for a 0.8 ha farm. In addition, an increase in labor requirement was expected from about 69 - 133 days to about 94 - 152 days per farm per year, due to the enhanced agricultural activity. However, as this is below the working capacity of an average family (500 days) family members may still need to search for off-farm employment even with rehabilitation of irrigation schemes, because farm sizes are quite small.

Economic analysis for irrigation schemes.

5. The economic analysis of the AF is based on information from a feasibility study finalized in February 2016.[4] The analysis was conducted for several schemes and investment options (Tregtan 3, Tregtan 2, Sllanica, Leminoti, Murriz Thane Lushnje and Murriz Thane Cukas, and Janjari(Xara)). These will be covered in the presented analysis as sufficient information was available. The analysis is based on engineering and agronomic data, providing estimates of costs of constructing, operating and managing the facilities, cropping patterns for the WOP and WP scenario, resource usage and production costs. Most inputs were provided by the project engineers and agronomist and complemented with data from INSTAT and the irrigation and drainage boards. Product prices are based upon published information and discussion with farmers and assumed constant at 2014 values. A discount rate of 6 percent – as recommended by recent World Bank guidelines - is assumed and a time period of 30 years for the analysis, and an exchange rate of 1USD=115 LEK was used. Financial cost were converted into economic cost using conversion factors.[5]

6. Benefits from the WP scenario entail (i) increased yields (and hence, production) for crops in formerly poorly irrigated areas; (ii) often (but not for each scheme) increase in irrigated surface area; (iii) changes in cropping patterns, favoring crops with higher yields. It is expected that farmers will grow higher value crops as crop water requirements become more reliable. For instance, farmers had indicated that they would like to grow more maize and less wheat, which can also be grown without irrigation, as well as more vegetables, fruit trees and vineyards. The WP scenario assumes that construction works are done in year 1 and crop production starts from year 2 onwards; crop yields are expected to achieve full potential increase in Year 3 (Table 1). Production in the WOP scenario is assumed to remain constant. The calculation of the NPV and ERR is based on net incremental benefits, the difference between of net benefits between the without and with project scenario.

[4] MARD - Contract prot. N. 3909/1 – 29/08/14; Background and Feasibility Report-30.04.2015

[5] of maize 0.941, white beans 0.922, agricultural inputs 0.953 and investment 0.837 (20 percent removed from financial prices for VAT). Agricultural inputs include seeds, seedlings, chemicals (fertilizers, pesticides, herbicides).

Table 1. Coefficient of Yield Growth (from WOP to WP scenario)

	Tregtan 3	Tregtan 2	Slanice	Leminot	Murriz Th.	Janjari
Wheat	1.13	1.13	1.13	1.13	1.35	n/a
Maize	1.11	1.11	1.22	1.43	1.30	1.67
Potatoes	1.20	1.20	1.33	1.4	1.19	1.19
Beans	1.20	1.20	1.33	1.00	1.25	n/a
Vegetable	1.17	1.17	1.33	1.43	1.20	1.20
Forage	1.10	1.10	1.21	1.30	1.20	1.29
FruitTrees	n/a	n/a	1.25	1.39	1.24	n/a
Olives	n/a	n/a	1.23	n/a	1.17	1.06
Vineyards	n/a	n/a	1.13	n/a	1.13	1.13
Tobacco	n/a	n/a	n/a	n/a	n/a	n/a
Agrumes	n/a	n/a	n/a	n/a	n/a	1.33

7. Apart from the investment cost, which are part of project financing, a general cost of 7 percent of capital investment is assumed, contingencies of 2 percent of capital investment is assumed. In addition, the following costs are included in the analysis: (i) operation and maintenance cost; (ii) institutional support investment of 18 percent of capital investment cost; (iii) administrative costs of the water user association; (iv) production costs related to agricultural inputs and labor. No taxes, subsidies are or interest payments are included. Investment cost per scheme which is provided by the project, per hectare, total capital cost in year 1 and average annual variable cost, which include (i)-(iii) are presented in Table 2, as well as the current area under irrigation and the original and designated command area.

Table 2. – Command Areas per Option as well as cost per scheme

	Command area			**Investment cost (Year 1)**		**Capital cost [(b)] (Year 1)**	**Average annual variable cost (Year 2-30)**		
Scheme Name	**Original**	**Actual irrigated area [(a)]**	**Area under project (Gravity)**	**Total area**	**Per ha**		**O&M cost[(c)]; total area**	**Production cost[(d)]; total area**	**Total variable cost per ha**
	ha	**ha**	**ha**	**US$**	**US$/ ha**	**US$**	**US$**	**US$**	**US$/ha**
Tregtan 3	315	155	160	68,598	429	6,174	11,075	373,254	2,402
Tregtan 2	28	15	28	35,346	1,262	3,181	420	88,482	3,160
Sllanica	300	20	260	253,093	973	22,778	14,924	1,133,906	4,361
Leminoti	400	250	400	114,564	286	10,311	22,064	1,495,080	3,738
MT Lushje	29,700	13,000	11,700	15,968,898	1,365	1,437,201	631,800	62,274,337	5,323
MT Cukas									
Janjari (Xara)	2,500	1,000	4,000	6,809,703	1,702	612,873	88,000	15,166,381	3,792
Total	**33,243**	**14,440**	**16,548**	**23,250,202**	**1,405**	**2,092,518**	**1,479,645**	**73,741,407**	**3,950**

Note: (a) Agronomist estimates, reflecting the without project scenario; (b) Capital cost, year 1 including general cost and contingency cost but excluding investment cost; (c) Annual average operation and maintenance (O&M) cost (average year 2-30) including operation and maintenance cost, as well as institutional support cost, administrative costs of WUA; (d) Annual average production cost (average year 2-30) including production cost related to seeds, services, labor and fertilizer/chemical inputs.

8. The results of the economic analysis per scheme are presented in Table 3. The NPV as well as ERR are positive for all schemes, except Tregtan 2 (which will be analyzed further to improve ERR before any investment decisions are made), and demonstrate a relatively high rate

of return between 11 percent and 43 percent. The results show that investment in the schemes is largely favorable from an economic point of view, with a potential to yield sizable returns in particular from vegetable and forage crop production, thus justifying the investment. The economic analysis of the original project reports similar values, between ERRs between 11 percent and 31 percent.

Table 3- Results of the economic analysis per scheme.

Scheme Name	Option No.	NPV (USD)	ERR	Benefit -Cost ratio
Tregtan 3	1	433,994	13%	1.45
Tregtan 2	1	-53,420	0%	1.14
Slanice	1	4,671,996	33%	1.39
Leminot	2	1,834,607	15%	1.29
MT Lushje MT Cukas	2	61,711,575	16%	1.28
Xare	2	119,701,911	43%	1.99

Economic analysis for overall project.

9. An economic analysis is conducted for the entire project, which takes into account two benefit streams: the aggregated incremental net benefits per scheme – for six irrigation schemes for which sufficiently information was available – and an approximation of the project's potential to achieve public goods, by reducing greenhouse gas emissions and enhancing carbon sequestration. The analysis of project's net carbon balance is presented in Annex 4 and shows an average annual net carbon balance of -15,998 tCO2-e emission achieved on approximately 21,600 ha, thus -0.74 tCO2e/ha. The project covers 16,548 ha, which translates in approximately -12,262 tCO2e/year. Valued at a social value of carbon of US$30/tCO2e emission (which is assumed constant over the project's lifetime) results in additional benefits of US$367,875 per year.[6] It is assumed that project investment of US$26.8 million takes place in year 1 and year 2.

10. At a discount rate of 6 percent and 30 years implementation, the resulting economic NPV is US$192 million and ERR 31 percent. Sensitivity analyses (Table 4) show that results robust to changes in: (i) decreased area under irrigation of 90 percent, 80 percent and 70 percent; (ii) increase in investment cost by 10 percent, 20 percent and 30 percent; and (iii) decreasing the social value of carbon to zero.

Table 4- Results of the project's sensitivity analysis.

Changes	Baseline values		Decreasing area under irrigation		Increasing investment cost		Reducing social value of carbon	
	NPV (US$)	ERR (%)	NPV (US$)	ERR (%)	NPV (US$)	ERR (%)	NPV (US$)	ERR (%)
	209 mio	30	-	-	-	-	-	-

[6] The shadow price of carbon, or social cost of carbon (SCC), presents the marginal damage cost of carbon emission. It is estimated as the present value of the stream of future economic damages of increased GHG emissions. For 2015, the World Bank proposes using an SCC of US$30/t in the economic analysis. World Bank (2014): "Technical guidance note on the social value of carbon" or:
http://www.worldbank.org/en/topic/climatechange/brief/integrating-climate-change-world-bank (Accessed January 2016).

10%	-	-	191 mio	30.9	189	29.5%	-	-
20%	-	-	190 mio	30.9	187	28.2	-	-
30%	-	-	189 mio	30.8	184	27.1	-	-
Reducing SCC to zero	-	-	-	-	-	-	192 mio	31

ANNEX 4: Greenhouse Gas Accounting Analysis

ALBANIA: Water Resources and Irrigation Project Additional Financing (P162786)

Introduction

EMISSIONS ESTIMATE AND DISCUSSION

Activity Type	Description	Timeline	Net Emissions Estimate (tCO_2-eq)
Land Use Change	Changes to land use and vegetation types in project area	22 years	-307,671
Irrigation	Switching to gravity-fed irrigation and installing new gravity-fed capacity	22 years	1,085
Total			**-306,586**

Please note that net emissions refers to the difference between the gross emissions (the project emissions) and the baseline emissions (emissions from a counterfactual scenario). This analysis refers to the selection of schemes at feasibility level. The ecofin analysis has already used pro-rata figures from GHG analysis for the currently selected list.

Relevant Components

1. The proposed AF would include additional investments and activities to increase Project impacts in irrigation rehabilitation, where the need to restore productive assets throughout the country, remains high. Under WRIP (Component 1) a Feasibility Study was undertaken on 13 country-wide I&D schemes, serving 40,000+ ha. Available funding under the WRIP has enabled financing of civil works for rehabilitating and improving 5 out of those 13 schemes, targeting only 20,000 ha: Terbuf canal and Krutje canal in Murriz-Thana, Kurjan Strum, Divjaka, and Koshnica. The proposed AF would enable financing of works for those additional areas in the aforementioned 13 schemes which exhibited good Internal Economic Rate of Returns (IERRs) and environmental and social screening. Based on the Feasibility Study, additional schemes serving approximately 20,000 ha (costing roughly 22 million Euro) are expected to yield acceptable IERRs, which may include: Muriz-Thana Cukas and Lushnje branches, Xarra, Tregtan 2 and 3, Vranisht 2, Duhanas, Belesova, Sllanica, Leminoti, and Zharreza. As for the original project, investments will focus on modernization and improvement of water control, operability and will include flow measurement devices to allow more precise water management where relevant. Depending on discussions with farmers and municipalities, the project may revive pilots on private sector participation in investments and management for highly profitable schemes and where there is broad support.

Explaining Net and Gross Emissions

2. **Gross emissions** are the emissions project activities cause over its economic lifetime. These are compared to a baseline scenario.[7] The difference between the gross emissions and the baseline emissions are the project's **net emissions**.

Assumptions and Calculations

Assumptions:

- 14,619 ha of land would remain annual crop land under the project and baseline scenarios
- An additional 3,485 ha of land would switch from fallow land to annual crop land under the project
- This combined 18,104 ha of annual crop land would see improved agricultural practices under the project scenario, but not the baseline scenario
- New gravity-fed irrigation systems would be built on the 3,485 ha of newly converted annual cropland under the project scenario
- 3,241 ha of land would remain perennial tree crops under both the project and baseline scenarios
- Irrigation on all project lands will be accomplished through zero-emission gravity-fed systems that do not use electricity under both the baseline and project scenarios

Project Scenario:

Land Use Changes:

3. This analysis used the FAO's EX-ACT tool to measure the emissions due to Land Use Changes (LUCs). The Agriculture GP has used the EX-ACT tool for GHG accounting purposes since July 1, 2014.

4. There are three main LUCs that take place through this project. One is improving agricultural practices on 14,619 ha of annual cropland.[8] The improved practices on these 14,619 ha of annual crops was analyzed using the "Annual systems remaining annual systems" module. Consistent with other World Bank projects that have switched to low-input agriculture to intensive agriculture, for the project scenario, this change was denoted by checking "Yes" under "Improved agronomic practices." Since water management will also be used, this box was also checked. This change resulted in both gross and net emissions of -333,313tCO_2-eq.

[7] There are three primary approaches to defining a baseline counterfactual; the No Change Scenario assumes the status-quo maintains, the Use of Past Trends approach extrapolates data from the recent past into the near future, and the Use of Future Trends approach uses advanced modeling to make projections about the future. Elements from any combination of these approaches may be used when defining a counterfactual.

[8] Out of a total project area of 21,345 ha to be irrigated, 34% of the land will be dedicated to forage crops, 18% to vegetables, 14% to maize, 6% to wheat and 12% to other crops. Another 15% will be dedicated to tree crops (olives, oranges and other tree fruits). Since the EX-ACT tool currently lacks a functionality for forage, these lands were assessed as annual crops in the interest of conservativism since annual crops tend to have a lower mitigation potential than perennial crops. The analysis used a breakdown of 85% annual cropland and 15% perennial cropland.

5. The second LUC was switching an estimated 3,485 ha from fallow land to annual cropland. Since irrigation is currently impossible on this land without the project, this land usually sits fallow, with occasional cultivation of winter wheat. This change was measured with the "Other land use changes" module. The land for annual crops contributed gross and net emissions of 105,100 tCO_2-eq. The third LUC was applying the same improved agricultural practices (improved agronomic practices and water management) to this 3,485 ha as on the other 14,619 ha mentioned above. This was performed using the "Annual systems from other LU or converted to other LU" module. These practices resulted in net emissions of -79,458 tCO_2-eq as well.

6. In addition, 3,241 ha of land in the project area is currently devoted to perennial crops and will remain so under the project as well. This land was assessed using the "Perennial systems remaining perennial systems" module. The perennial cropland would contribute emissions savings of -45,374 tCO_2-eq under both the project and baseline scenario, so the gross emissions are -45,374 tCO_2-eq, while the net emissions are 0 tCO_2-eq.

7. Overall, the project's land use changes, including improved agronomic practices and water management, would yield net and gross emissions of -307,671 tCO_2-eq.

Irrigation:

8. Under the project, 17,860 ha of cropland will remain under gravity-fed irrigation, which will be upgraded. This will include areas that are currently not functional, on a further 3,485 ha.

9. Since the project is expected to use zero-emissions gravity-fed systems that do not use energy for pumping, it was assumed the water to be used for irrigation purposes would not use energy. Since no electricity would be used in the project scenario, this would yield 0 tCO_2-eq in gross emissions from the actual use of the upgraded or new irrigation systems.

10. The EX-ACT tool allows for estimating the construction of new irrigation systems. 3,485 ha was entered into the "Irrigation systems" module. This resulted in gross and net emissions of 1,085 tCO_2-eq.

Baseline Scenario:

11. The baseline scenario assumes a business-as-usual scenario.

Land Use Changes:

12. Under the baseline scenario, it was assumed that 14,619 ha of annual cropland would not benefit from the improved practices to be carried out through the project. This would result in 0 tCO_2-eq of gross emissions. However, this would result in missing out on -333,313 tCO_2-eq of emissions savings under the project scenario for annual cropland. In addition, leaving 3,485 ha of land fallow instead of using it for annual cropland would also result in gross emissions of 0 tCO_2-eq, but also avoid an additional emissions 105,100 tCO_2-eq. This land would also not benefit from improved practices and the resulting emissions savings of -79,458 tCO_2-eq.

13. Under both the project and baseline scenarios, 3,241 ha of land will remain under tree crop cultivation, which is assessed as a perennial crop. Since there are expected to be no changes to the land use of this 3,241 ha, the net emissions would be 0 tCO_2-eq, while baseline emissions would be -45,374 tCO_2-eq.

Irrigation:

14. Under the baseline scenario, 17,860 ha of cropland continue using gravity-fed irrigation, which will be upgraded. There would be no new gravity-fed systems to be installed on an additional 3,485 ha since irrigation would not be possible there without the project.

15. Since the project is expected to use zero-emissions gravity-fed systems that do not use energy for pumping, it was assumed the water to be used for irrigation purposes would not use energy. Since no electricity would be used in the project scenario, this would yield 0 tCO_2-eq in gross emissions from the actual use of the existing irrigation systems.

Results and Conclusion

16. The net emissions of the project are **-306,586 tCO_2-eq** over the 22-year life of the project. Gross emissions are expected to be **-351,960 tCO2-eq**. These gross emissions are negative due to an improved ability of croplands to absorb carbon compared to a business-as-usual scenario. These gross emissions also include the emissions savings of -45,374 tCO_2-eq from existing perennial crops that would exist with or without the project. Net annual average emissions are expected to be **-15,998 tCO2-eq**.

17. The largest contributor to emissions savings would be from improved land use due to land use changes, which would contribute to net emissions savings of -412,771 tCO_2-eq compared to the baseline scenario. This project demonstrates how improved land use can help improve the ability of cropland to absorb existing GHGs in the atmosphere. Two activities would be emissive: switching currently fallow land to annual cropland (105,100 tCO_2-eq) and constructing a new irrigation system (1,085 tCO_2-eq).

18. The reason improved agronomic practices and water management result in negative emissions is due to improvements to soil carbon sequestration through such activities. According to the EX-ACT analysis, the project's LUCs and improved agricultural practices would improve soil CO_2 sequestration potential in the project area by -308,117 tCO2-eq. (N_2O emissions due to these activities would go up by the equivalent of 446 tCO_2-eq.).