

Document of
The World Bank

Report No: PAD601

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF US\$ 38.0 MILLION

TO THE

KYRGYZ REPUBLIC

FOR A

AGRICULTURAL PRODUCTIVITY AND NUTRITION IMPROVEMENT PROJECT

December 3, 2015

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CURRENCY EQUIVALENTS
(Exchange Rate Effective October 1, 2015)

Currency Unit = KGS
KGS 69 = US\$1

BANK FISCAL YEAR
July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AADP	Agriculture Area Development Project	ISF	Irrigation Service Fee
AA	Ayil Aimak (village)	IYCF	Infant and Young Child Feeding
AO	Ayil Okmotu (local governance administration)	KAP	Knowledge, Attitude and Practice
ADB	Asian Development Bank	KGS	Kyrgyz Republic Som
AF	Additional Financing	M&E	Monitoring and Evaluation
AISP	Agriculture Investments and Services Project	MCH	Maternal Child Health
APAP	Agricultural Productivity Assistance Project	MoALI	Ministry of Agriculture and Land Improvement
APNIP	Agricultural Productivity and Nutrition Improvement Project	MoF	Ministry of Finance
AVHC	Association of Village Health Committees	MoH	Ministry of Health
CAHP	Community Action for Health Programme	MoSD	Ministry of Social Development
CMU	Country Management Unit	MOM	Management, Operation and Maintenance
CSB	Community Seed Bank	NCB	National Competitive Bidding
DA	Designated Account	NGO	Non-Government Organization
DWRLI	Department of Water Resources and Land Improvement	NWRMP	National Water Resources Management Project
EMP	Environmental Management Plan	O&M	Operation and Maintenance
ENPV	Economic Net Present Value	OIP-1	First On-farm Irrigation Project
ERR	Economic Rate of Return	OIP-2	Second On-farm Irrigation Project
FAO	Food and Agriculture Organization	SORT	Systematic Operations Risk-rating Tool
FAP	Feldsher-Accoucher Point (PHC facility)	PAP	Project Affected People
FCS	Food Consumption Score	PDO	Project Development Objective
FGP	Family Group Practices	PHC	Primary Health Care
FM	Financial Management	PIM	Project Implementation Manual
FMR	Financial Monitoring Report	PIU	Project Implementation Unit
FMS	Financial Management	PRA	Participatory Rapid Assessment

	Specialist		
FNPV	Financial Net Present Value	RAP	Resettlement Action Plan
FRR	Financial Rate of Return	RETF	Recipient Executed Trust Fund
FSC	Food Security Council	RFP	Resettlement Framework Policy
FWUA	Federation of WUA	RVK	Raion Irrigation Department (“Rayvodkhoz”)
GAfsp	Global Agriculture and Food Security Program	SDC	Swiss Agency for Development and Cooperation
GDP	Gross Domestic Product	SHG	Self-Help Group
GoK	Government of the Kyrgyz Republic	SOE	Statement of Expenditure
GRM	Grievance Redress Mechanism	SU	(WUA) Support Units
HPC	Health Promotion Centre	SRC	Swiss Red Cross
I&D	Irrigation and Drainage	SWAP	Sector Wide Approach Project
ICR	Implementation Completion Report	TF	Trust Fund
IDA	International Development Association	TOR	Terms of Reference
IEC	Information, Education and Communication	UNICEF	United Nations Children's Fund
IFAC	International Federation of Accountants	USAID	United States Agency for International Development
IFAD	International Fund for Agricultural Development	VAT	Value Added Tax
IFR	Interim Financial Report	VHCs	Village Health Committees
IFRS	International Financial Reporting Standards	WFP	World Food Programme
IMF	International Monetary Fund	WMIP	Water Management Improvement Project
IPF	Investment Project Financing	WSHG	Women’s Self-Help Group
IPM	Integrated Pest Management	WUA	Water Users Association
ISA	International Standards on Audit		

Regional Vice President:	Cyril Muller
Country Director:	Saroj Kumar Jha
Senior Global Practice Director:	Junaid Kamal Ahmad
Practice Manager:	Dina Umali-Deininger
Task Team Leader:	Pieter David Meerbach

KYRGYZ REPUBLIC
Agricultural Productivity and Nutrition Improvement Project

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PAD DATA SHEET*Kyrgyz Republic**AGRICULTURE PRODUCTIVITY AND NUTRITION IMPROVEMENT PROJECT (P132754)***PROJECT APPRAISAL DOCUMENT***EUROPE AND CENTRAL ASIA**0000009392*

Report No.: PAD601

Basic Information			
Project ID P132754	EA Category B - Partial Assessment	Team Leader(s) Pieter David Meerbach, Kunduz Masyllkanova	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints []		
	Financial Intermediaries []		
	Series of Projects []		
Project Implementation Start Date 01-Jun-2016	Project Implementation End Date 30-Jun-2022		
Expected Effectiveness Date 01-Jun-2016	Expected Closing Date 30-Jun-2022		
Joint IFC No			
Practice Manager/Manager Dina Umali-Deiningering	Senior Global Practice Director Junaid Kamal Ahmad	Country Director Saroj Kumar Jha	Regional Vice President Cyril E Muller
Approval Authority			
Approval Authority RVP Decision please explain The proposed project is financed through a Trust Fund of the Global Agriculture and Food Security Program and is not subject to Board approval.			
Borrower: KYRGYZ REPUBLIC			
Responsible Agency: Department of Water Resources and Land Improvement			
Contact: Telephone No.:	Koshmatov Barataly Turanovich 996312549110	Title: Email:	Project Director onfarmir@elcat.kg

Project Financing Data(in USD Million)										
<input type="checkbox"/>	Loan	<input type="checkbox"/>	IDA Grant	<input type="checkbox"/>	Guarantee					
<input type="checkbox"/>	Credit	<input checked="" type="checkbox"/>	Grant	<input type="checkbox"/>	Other					
Total Project Cost:		38.00			Total Bank Financing:		0.00			
Financing Gap:		0.00								
Financing Source						Amount				
Borrower						0.00				
Global Agriculture and Food Security Program						38.00				
Total						38.00				
Expected Disbursements (in USD Million)										
Fiscal Year	2016	2017	2018	2019	2020	2021	2022			
Annual	0.20	5.80	8.00	8.00	8.00	6.00	2.00			
Cumulative	0.20	6.00	14.00	22.00	30.00	36.00	38.00			
Institutional Data										
Practice Area (Lead)										
Water										
Contributing Practice Areas										
Agriculture, Health, Nutrition & Population										
Cross Cutting Topics										
<input checked="" type="checkbox"/>	Climate Change									
<input type="checkbox"/>	Fragile, Conflict & Violence									
<input type="checkbox"/>	Gender									
<input checked="" type="checkbox"/>	Jobs									
<input type="checkbox"/>	Public Private Partnership									
Sectors / Climate Change										
Sector (Maximum 5 and total % must equal 100)										
Major Sector				Sector		%	Adaptation Co-benefits %		Mitigation Co-benefits %	
Agriculture, fishing, and forestry				Irrigation and drainage		60	60			
Agriculture, fishing, and forestry				Agricultural extension and research		20	20			
Health and other social services				Health		20				
Total						100				
<input type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information										

applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Rural development	Rural services and infrastructure	40
Human development	Nutrition and food security	30
Environment and natural resources management	Water resource management	30
Total		100

Proposed Development Objective(s)

The proposed project development objective is to increase agricultural productivity and food and nutrition security of rural households in selected areas nationwide.

Components

Component Name	Cost (USD Millions)
Rehabilitation and Modernization of Irrigation and Drainage Infrastructure	28.00
Agricultural Advisory Services	3.50
Nutrition Improvements	4.60
Project Management	1.90

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

Compliance

Policy

Does the project depart from the CAS in content or in other significant Yes [] No [X]

respects?			
Does the project require any waivers of Bank policies?		Yes []	No [X]
Have these been approved by Bank management?		Yes []	No [X]
Is approval for any policy waiver sought from the Board?		Yes []	No [X]
Does the project meet the Regional criteria for readiness for implementation?		Yes [X]	No []
Safeguard Policies Triggered by the Project		Yes	No
Environmental Assessment OP/BP 4.01		X	
Natural Habitats OP/BP 4.04			X
Forests OP/BP 4.36			X
Pest Management OP 4.09		X	
Physical Cultural Resources OP/BP 4.11			X
Indigenous Peoples OP/BP 4.10			X
Involuntary Resettlement OP/BP 4.12		X	
Safety of Dams OP/BP 4.37		X	
Projects on International Waterways OP/BP 7.50		X	
Projects in Disputed Areas OP/BP 7.60			X
Legal Covenants			
Name	Recurrent	Due Date	Frequency
Schedule 2, Section E.1 (a)	X		CONTINUOUS
Description of Covenant			
The Recipient shall ensure that the Project is carried out in accordance with the EMP, the Guidelines for Dealing with Irrigation, Dams and Water Storage Reservoirs (Guidelines), site-specific EMPs, the Resettlement Policy Framework (RPF), as well as with any site-specific Resettlement Action Plans (RAPs), as the case may be.			
Name	Recurrent	Due Date	Frequency
Schedule 2, Section E.1 (b)	X		CONTINUOUS
Description of Covenant			
Except as the World Bank shall otherwise agree in writing, the Recipient shall not assign, amend, abrogate, waive or fail to enforce the EMP, site specific EMPs, the Guidelines for Dealing with Irrigation, Dams and Water Storage Reservoirs, RPFs, RAPs, site specific RAPs or any of their provision.			
Name	Recurrent	Due Date	Frequency
Schedule 2, Section E.3	X		CONTINUOUS
Description of Covenant			
The Recipient shall ensure that no activities are carried out in connection with the Project that may adversely change the quality or quantity of water flows to other riparians of international waterways or			

the tributaries of any such international waterways, as determined by the World Bank.

Name	Recurrent	Due Date	Frequency
Schedule 2, Section F	X		CONTINUOUS

Description of Covenant

The Recipient shall prepare and furnish to the World Bank not later than October 31 of each Fiscal Year during the implementation of the Project, a Work Plan and Budget.

Name	Recurrent	Due Date	Frequency
Schedule 2, Section V		01-Feb-2016	

Description of Covenant

Within thirty days from the Effective Date, the Recipient, shall install an automated accounting system acceptable to the World Bank, with capacity to, inter alia, generate IFRs, statement of expenditures and annual financial statements, in a manner acceptable to the World Bank.

Conditions

Source Of Fund	Name	Type
GAFS	Article V Section 5.01	Effectiveness

Description of Condition

The Recipient has updated and adopted the Project Implementation Manual (PIM) in form and substance acceptable to the World Bank.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Pieter David Meerbach	Team Leader (ADM Responsible)	Sr Water Resources Spec.		GWADR
Kunduz Masykanova	Team Leader	Senior Agriculture Economist		GFADR
Irina Goncharova	Procurement Specialist	Procurement Specialist		GGODR
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Ama Esson	Team Member	Program Assistant		GFADR
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Asli Gurkan	Safeguards	Social		GSURR

	Specialist	Development Specialist		
Janelle Plummer	Safeguards Specialist	Senior Social Development Specialist		GSURR
Jasna Mestnik	Team Member	Finance Officer		WFALA
Ju Young Lee	Team Member			GWADR
Lidia Hvan	Team Member	Team Assistant		ECCKG
Nightingale Rukuba-Ngaiza	Counsel	Senior Counsel		LEGLE
Peter Goodman	Team Member	Sr Agricultural Spec.		GFADR
Talaibek Torokulovich Koshmatov	Team Member	Senior Rural Development Specialist		GFADR

Extended Team

Name	Title	Office Phone	Location
Alisher Khamidov	Social Development Specialist		Osh
David Lugg	Agricultural Specialist	441367718893	Faringdon
Samvel Ghazaryan	Irrigation Engineer	390657053293	Rome
Steven Visser	Water Resources Management Specialist	31621296760	Bemmel

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. With an estimated per capita Gross National Income (GNI) of US\$ 1,250 in 2014, the Kyrgyz Republic is one of the poorest economies in the Europe and Central Asia region. Real GDP growth has fluctuated substantially in recent years and is projected to average 5.4 percent in 2013-2015. In 2014, about 31 percent of the population lived below the poverty line, while 1.2 percent lived in extreme poverty. The incidence of poverty in rural areas (around 40 percent) was higher than in urban areas (around 28 percent). Poverty varies significantly amongst the regions. The Kyrgyz Republic is geographically divided into the north and south. The three southern *Oblasts* (regions) in the Fergana Valley (Batken, Jalalabad and Osh) have a distinct regional identity vis-à-vis the north (Chui, Issyk Kul, Naryn and Talas). The southern region is characterized by smaller land holdings, lower per capita income, higher unemployment, lower human development indices and more limited access to services. Over the last 5 years the country has seen some dramatic developments. In April 2010, the government was overthrown. This was followed by an outbreak of violence in June 2010 in the southern region. Following parliamentary elections in October 2010 and presidential elections in the fall of 2012, the government is working towards a more politically stable and improved governance environment. The next parliamentary elections are scheduled in October 2015.

B. Sectoral and Institutional Context

2. *Agriculture.* The agricultural sector generated about one fifth of the country's GDP in 2014 and one-third of employment¹. Around two-thirds of the rural population are employed in agriculture. The agriculture sector is driven by small-scale irrigated agriculture (82 percent of 1.3 million ha) and pasture-based livestock production (9 million ha). Average farm size is less than one ha and most livestock are owned by small-scale farmers. The Kyrgyz Republic was an early reformer in Central Asia in terms of land reform, irrigation reform, development of rural financial markets, and privatization and liberalization of input and output markets and trade. This resulted in rapid growth between 1996 and 2002. Since then growth has fluctuated and at times stagnated. Agriculture continues to face major production and marketing constraints: insufficient access to reliable irrigation, low usage of quality seed, very low rates of machinery replacement, and high levels of animal disease and degradation of pastures. Poor compliance with sanitary standards and a poor business environment impede trade. The Government of the Kyrgyz Republic (GoK) has made a number of landmark reforms in natural resource management, including the Water Code (2005) and the Pasture Law (2009). The government remains committed to community based management of the natural resources governed by this legislation. With the establishment of the Eurasian Economic Union (EEU) on January 1, 2015 and the membership of the Kyrgyz Republic in the Custom Union in the same year, significant changes to the food safety policy of the country are expected. These will include improved food safety legislations for the phyto-sanitary, horticulture, meat and dairy sectors, capacity building for farmers and agro-processors to meet increased food safety and quality requirements for export, and regional information sharing, collaboration and harmonization to better position the country as a trading partner within the Eurasian Customs Union and with the rest of the world.

¹ World Bank Group, Kyrgyz Republic Partnership Program Snapshot, April 2015

3. *Irrigation.* Low and variable average rainfall between 200-600 mm in the north and 350-700 mm in the south makes irrigation critical to agricultural production. Major reforms have been implemented in the irrigation sector in the last 15 years. Water User Association (WUA) development was initiated in 1997 and the Law of the Kyrgyz Republic on Unions (Associations) of Water Users passed in 2002. The Bank's investments have rehabilitated on-farm and off-farm irrigation and drainage (I&D) systems, established independent WUAs and WUA Support Units (SUs) under the Department of Water Resources and Land Improvement (DWRLI), and provided agricultural advisory services. There has been a severe lack of maintenance since the 1990s and a consequent deterioration of I&D systems due to inadequate government finance. Rehabilitation projects financed by the World Bank, Asian Development Bank (ADB) and the Government have covered an area serving only 336,300 ha (44 percent) of all off-farm I&D systems, and 223,651 ha (21 percent) of all on-farm I&D systems. The Project Implementation Unit (PIU) of the Second On-farm Irrigation Project (OIP-2) received requests for rehabilitation from 97 WUAs covering an area of 184,000 ha, of which approximately 68 WUAs, covering 130,000 ha, meet the selection criteria. A key challenge is to ensure effective operation and maintenance (O&M) of the on-farm rehabilitated systems, and under the OIP-2, through O&M and infrastructure replacement planning, the level of WUA irrigation service fees (ISF) is being increased to eventually cover the full O&M requirements of the on-farm systems. The contribution of water users to maintenance costs has increased significantly. A core component of the Bank's investments has been the establishment and capacity building of 481 WUAs and the strengthening of the support services provided by SUs in the DWRLI. The role of WUAs in irrigation management has evolved during the last eight years with the establishment of Federations of WUAs (FWUAs) that assume management of some off-farm systems. In addition each WUA employs around 9 staff, hence generating around 4,000 permanent jobs throughout the country.

4. Crop yields have remained stagnant on average in recent years. However, the potential productivity benefits from improved irrigation can be increased with improved on-farm water delivery, better soil management and agronomic practices and improved access to markets. Data from the first On-farm Irrigation Project (OIP-1) indicates that crop yields of farms with access to rehabilitated irrigation systems are between 10 and 20 percent higher than those without improved irrigation². Under the ADB Agriculture Area Development Project (AADP), farmers trained through advisory services exceeded the average yields of all farmers across seven crops by an average 62 percent³. The provision of agricultural advisory services can provide a substantial increase in irrigated crop yields.

5. *Food Insecurity and Under-nutrition.* Irrigated agriculture has a major influence on rural household incomes and consequently on food security in the country. Majority of the rural households are dependent on crop and livestock sales, from which they earn more than a third of their income⁴. The World Food Program (WFP) assessments show the incidence of food insecurity as 27 percent (August 2010), 46 percent (March 2011), 18 percent (August 2011), 18 percent (March 2012), 25 percent (September 2012), 14 percent (September 2013) and around 10 percent in 2014.⁵ Household food insecurity is high, fluctuates substantially and varies both

² Independent Impact Assessment Surveys for OIP-1, OIP-2 and WMIP WUAs

³ ADB June 2011. *KGZ: Agriculture Area Development Project: Project Completion Report*. Manila.

⁴ World Bank, 2007. *Poverty Assessment*. Washington. D.C.

⁵ World Food Programme, *Kyrgyz Republic Food Security Assessments: 2012, 2013 and 2014*.

seasonally and regionally (e.g., around 6-10% in the north and 10-20% in the south). Food insecurity is more prevalent in rural areas, especially in the southern regions. Most food insecure households rely on a single income, have small household plot sizes (average 0.16 ha) and limited livestock. Food insecurity is one of the main determinants (together with care-taking and access to health services and water and sanitation) of growth faltering among young children resulting in high levels of chronic under-nutrition or stunting.

6. Under-nutrition is an important public health problem with stunting, wasting, low birth weight, and vitamin and mineral deficiencies causing estimated annual losses of US\$32 million⁶. Under-nutrition is more prevalent in rural areas, in poorer households and less-well educated mothers. The associated rates of infant, child and maternal mortality are high. Action to sustainably reduce under-nutrition will require a multi-sectoral approach involving coordination across sectors, including those not currently involved in nutrition activities. Participation from other sectors requires a long-term strategic approach with strong coordination at the national level for food and nutrition security.

C. Higher Level Objectives to which the Project Contributes

7. The proposed Agricultural Productivity and Nutrition Improvement Project (APNIP) contributes to the implementation of the Country Partnership Strategy 2013-2017 which recognizes the important role of both water resources management and irrigation for the country as a whole and agricultural productivity in particular, and maternal and child health care for improving the livelihoods of women and children. The project also contributes to the goals of the World Bank to reduce extreme poverty and promote shared prosperity. The rehabilitation of I&D systems and the provision of agricultural advisory services will result in improved agricultural production and marketing of higher value crops and increased seasonal employment thus increasing incomes of the rural population, of which around 40 percent are poor. Provision of agricultural advisory services and educational campaigns for increased production and utilization of nutritious food and targeted provision of micronutrients and vitamins will improve nutrition and food security of rural poor in general and vulnerable groups in particular. Improved coordination of food and nutrition security at the national level, which the project will contribute to, will benefit the vulnerable population which are food and nutrition insecure.

8. APNIP is financed through a trust fund (TF) provided by the Global Agriculture and Food Security Program (GAFSP). The GoK's initial project proposal to GAFSP for US\$43.5 million was approved for US\$16.5 million in May 2012. A subsequent proposal to GAFSP for additional financing of US\$23.5 million was approved in September 2013 for US\$21.5 million. A total of US\$38.0 million, which were approved under above two separate proposals to fund the proposed APNIP, has been approved by GAFSP. The initial project proposal comprised five components, including a component on further strengthening of the capacity of the water sector in general and WUAs in particular. As GAFSP approved only US\$16.5 million, this component is being implemented under the National Water Resource Management Project-Phase 1 (NWRMP-1), financed through a separate TF by the Swiss Agency for Development and Cooperation (SDC). SDC committed financing to the first phase of the NWRMP, with the intention to finance the second phase, which would continue until end-2020. The second phase

⁶ UNICEF and World Bank, June 2011. *Situational Analysis: Improving economic outcomes by expanding nutrition programming in the Kyrgyz Republic.*

of investments and financing will be considered during the last year of NWRMP-1. NWRMP is a comprehensive water sector capacity building project, and as such the NWRMP, OIP-2 and its Additional Financing (AF) and APNIP are complementary projects: investments in the rehabilitation of on-farm and critical off-farm I&D infrastructure and equipment are financed under the on-going OIP-2 AF and APNIP; and technical assistance to improve management, operation and maintenance (MOM) for both on- and off-farm I&D infrastructure and WUA capacity is financed under NWRMP. APNIP also includes agricultural advisory services and nutrition improvements.

9. APNIP's components are based on successfully completed and on-going projects. The Rehabilitation and Modernization of I&D Infrastructure component continues the program under OIP-1, OIP-2 and its AF. The Agriculture Advisory Services component builds on a long-term program of the Bank and other development partners for the establishment of a nationwide network of financially independent rural advisory services, including the Bank-funded Agricultural Investments and Services Project (AISP). The Nutrition Improvement component adopts an increasing global approach of addressing the complex nutritional and food security problems through multi-sectoral interventions⁷. The nutrition campaign builds on existing campaigns and interventions delivered through the Community Action for Health Programme (CAHP) and the country-wide partnership between the health system and Village Health Committees (VHCs). The domestic gardening and dietary diversification program adopts some of the practices under the Bank-funded Agricultural Productivity Assistance Project (APAP), including Community Seed Banks (CSBs) and the establishment and training of women's self-help groups (SHGs). The support to improve national level coordination of food and nutrition security will build on early support provided by the Food and Agriculture Organization (FAO), World Food Program (WFP) and United Nations Children's Fund (UNICEF). More details of the projects in both the water/agriculture and health/nutrition sectors are provided in Annex 6.

10. The scope of the project also addresses major issues that were identified during an extensive dual-level two-phased consultation process (part of the GAFSP proposal preparation) involving over 500 people representing government and non-government organizations (NGOs), international agencies, and potential beneficiaries at raion (district) level.

11. The project is consistent with the Government's various policies and strategies for agriculture, and food and nutrition security⁸. The agriculture sector is a key priority for economic development and the adoption of a comprehensive approach to addressing current problems is expected to help reduce social tensions and provide solutions to rural development in general. A key medium-term policy is 'ensuring food safety through increases in domestic production and productivity in agriculture and through creating reserves.' In food and nutrition security, the Government aims to provide all citizens with permanent access to sufficient

⁷ Flour and food fortification, provision of micronutrient supplements, social protection awareness, national school feeding program, and other related nutrition interventions are also being financed by other development partners: e.g. United Nations Children's Fund (UNICEF), Swiss Agency for Development Cooperation (SDC), Swiss Red Cross (SRC) and World Food Programme (WFP), and a jointly financed Sector Wide Approach (SWAP) in the health sector. The Government allocates US\$10 million annually for the national school meals program, which will also provide nutrition awareness training for communities, teachers and primary school students.

⁸ These policies and strategies are reflected in the National Sustainable Development Strategy 2013-2017 (approved 2013), The Concept of Food Security of the Kyrgyz Republic for 2009-2019, and the Food Security and Nutrition Program 2014-2017 (under review).

amounts of food in all regions and households. The national level Food Security Council (FSC), responsible for coordinating food security issues, is headed by the First Vice-Prime Minister. The Government has established an Inter-Agency Committee comprising the Ministry of Agriculture and Land Improvement (MoALI), the Ministry of Health (MoH), the Ministry of Social Development (MoSD), Ministry of Economy, Ministry of Finance (MoF), Ministry of Emergency Services and the National Statistics Committee to develop Kyrgyz Republic National Food Security and Nutrition Program 2014-2017, with support from FAO, WFP and UNICEF. The Program has been developed and is currently being reviewed by the Government.

II. PROJECT DEVELOPMENT OBJECTIVE

A. PDO

12. The project development objective (PDO) is to increase agricultural productivity and food and nutrition security of rural households in selected areas nationwide.

B. Project Beneficiaries

13. The project will benefit the population and WUAs in 60 Ayil Aimak (AA – local government⁹). About 60,000 ha of on-farm I&D systems managed by 30 WUAs and Federations of WUAs (FWUAs) located in 30 AA will be rehabilitated and managed more efficiently. Around 36,000 smallholder farm families, comprising about 162,000 people will benefit directly from I&D rehabilitation. In addition to these 30 AA, 30 more AA will be selected based on poverty, health and nutrition status for agricultural advisory services and nutrition improvement activities. Agricultural advisory services for improved irrigated crop production and marketing and improved on-farm water management will cover around 50,400 members of WUAs and their households in the selected 60 AA. Similarly, the nutrition improvement program will benefit up to 425,000 people in these 60 AA, and specifically vulnerable families, women and children.

C. PDO Level Results Indicators

14. The PDO level results indicators for the project are: (i) average percentage increase in crop production for WUAs (with completed I&D and advisory services); (ii) proportion of beneficiary households with food consumption score (FCS) above 28.5 points; (iii) number of water users provided with improved irrigation and drainage services; and (iv) number of female water users provided with improved irrigation and drainage services.

III. PROJECT DESCRIPTION

A. Project Components

15. The PDO is to be achieved through four project components: (i) Rehabilitation and Modernization of I&D Infrastructure; (ii) Agricultural Advisory Services; (iii) Nutrition Improvements; and (iv) Project Management. The project will be implemented in selected areas nationwide over a period of 6 years. The geographical focus of the project will be 60 AA, 30 AA where the 30 WUAs selected for rehabilitation are located and another 30 adjacent AA that

⁹ Ayil Aimak refers to the administrative territory of the Ayil Okmotu, the local government. There is an average of one WUA per Ayil Aimak.

will be selected for agricultural services (except for provision of grants under subcomponent 2.1) and nutrition improvement activities. The project components are highly inter-connected and will require effective coordination to ensure that the multi-sectoral approach delivers the expected results of improving food and nutrition security. The components individually and collectively will influence productivity while components 2 and 3 influence more directly nutrition improvements.

Component 1: Rehabilitation and Modernization of Irrigation and Drainage Infrastructure (total cost US\$ 28.0 million). This component finances: (i) civil works for the rehabilitation and modernization of the existing command area of I&D systems on about 60,000 ha managed by approximately 30 WUAs and FWUAs; (ii) the provision of essential maintenance equipment to WUAs and FWUAs; (iii) off-farm irrigation infrastructure, and water measurement structures at the intakes of around 300 WUAs for measurement of water delivered; and (iv) limited rehabilitation works on critical off-farm structures managed by the DWRLI. Works to be carried out include the rehabilitation and construction of on-farm I&D canals, outlets, water measurement and other hydraulic structures; and some limited rehabilitation works on critical off-farm infrastructure to increase the capacity of six pilot Raion Irrigation Department (“Rayvodkhoz - RVKs”) to enhance their MOM capacity. From 481 WUAs nationwide, the 30 highest ranked, non-rehabilitated WUAs meeting the selection criteria will be eligible for rehabilitation and equipment. The procedures developed by the DWRLI for WUA selection, I&D rehabilitation design and construction supervision developed under OIP-1, OIP-2 and AF will be used. This includes WUA’s repaying part of the civil works for on-farm I&D rehabilitation and part of the maintenance equipment provide to special account at the Ministry of Finance designated for the development of the irrigation sector.

Component 2: Agricultural Advisory Services (total cost US\$ 3.5 million). This component will provide agriculture advisory services to WUA members within selected AAs to increase irrigated agricultural production and improve access to markets. The project will finance: (i) training and support for the 30 WUAs selected for rehabilitation of I&D systems to prepare and manage agricultural development plans, including to procure, contract and manage advisory services, goods and works required for implementation of the plans (ii) technical advisory services for the 30 WUAs selected for rehabilitation works and to WUA members in the 30 adjacent AA selected for Components 2, for the implementation of the agricultural development plans; (iii) provision of small grants up to US\$30,000 , managed by the 30 WUAs selected for rehabilitation, for the implementation of the agricultural development plans managed by the WUAs; (iv) additional advisory services for further knowledge dissemination to a wider group of beneficiaries; and (v) on-farm water management demonstrations. Initially, the 30 WUAs selected for rehabilitation of I&D systems will be trained by consultants in the preparation of terms of reference (TOR), the management of advisory services contracts and the procurement of goods and works for the implementation of agricultural development plans. At the same time, technical assistance consultants will assist WUAs in the preparation of agricultural development plans and in the facilitation of plan implementation. The WUAs will then receive a small grant to implement the agricultural development plans through contracting agricultural advisory services and procurement of goods and works for inputs, materials, equipment and infrastructure required for the training and demonstration aspects of the agricultural development plan. A grant agreement will be signed between the DWRLI and the WUA, specifying how grant funds are to be used for implementation of the agriculture development plan, and outlining the responsibilities of the WUA. The WUA will also commit to contribute around 10% of the total

estimated costs for the implementation of the plan, either in kind for materials, labor, goods and equipment for demonstrations, or by cash contribution. In addition, WUA members of selected adjacent AA will benefit from (i) participation in demonstrations carried out in command areas of rehabilitated WUAs and (ii) selected training on agricultural productivity improvement and marketing. They would also be exposed to the nutrition education and information campaign to increase their understanding of the links between agricultural decisions and nutrition outcomes. Small contracts for advisory service providers for dissemination of best agricultural practices will also be procured by the PIU. Demonstrations for on-farm water management started under the Water Management Improvement Project (WMIP) and under OIP-2, will be continued. All the WUAs in the selected 60 AA will benefit from the on-farm water management training.

Component 3: Nutrition Improvements (total cost US\$ 4.6 million). This component will improve productivity, food security and nutrition levels of beneficiaries, especially women, female adolescents and children, in the selected 60 AA. The targeted beneficiaries are the population of the 30 AA in which the WUAs selected for I&D are located and additional 30 adjacent AA that will be selected for selected activities of Component 2 and 3 based on poverty, health and nutrition indicators monitored by MoH. It will also improve the coordination of food and nutrition security at the national level. Three sub-components will be implemented in parallel.

Sub-component 3.1. Improved household nutrition through nutrition education will target women (18-49 years), children (0-5 years) and adolescent girls (12-17 years). A nutrition campaign will include: (i) nutrition education on exclusive breastfeeding and adequate young child complementary feeding; (ii) food preparation and preservation to increase the nutritional value of food consumed and ensure food safety; and (iii) promote enhanced learning opportunities for children. The campaign will also include exposure to nutrition education of farmers and producers.

Subcomponent 3.2: Provision of Micronutrient Supplements will provide folic acid and iron for pregnant women, women in reproductive age and adolescent girls and sprinkles for children of 6-24 months to improve vitamin and micronutrient uptake.

Sub-component 3.3. Improved household nutrition through domestic gardening will primarily target the most vulnerable to improve year-round household nutrition and dietary consumption from household gardens. The project will finance: (i) identification of the most vulnerable and interested households; (ii) participatory rapid assessment (PRA) of problems, needs and interests of households and options for household plot improvement; (iii) establishment of women's Self-Help Groups (SHGs) and Community Seed Bank (CSBs) where they do not exist; (iv) a detailed technical assessment of current agronomic and production practices on household plots, including soil testing; (v) technical advisory services for individual households, including development of household plot production guidelines and demonstration materials, and establishment of household demonstration plots; and (vi) financing for basic equipment.

Sub-component 3.4. Improved national coordination for food and nutrition security will finance support to the FSC to implement its mandate, which includes nutrition issues in addition to food security and social protection. The project finances the establishment of the secretariat of the FSC which will coordinate, monitor and provide oversight of the implementation of the national Food Security and Nutrition Program. The secretariat will receive technical oversight and assistance from FAO, WFP, UNICEF and through the Bank's implementation support.

Component 4: Project Management (total cost US\$ 1.9 million). This component will finance project management staff, training, equipment and operational costs for the management, administration, coordination, engineering, procurement, financial management (FM) and monitoring and evaluation (M&E), in line with World Bank and GAFSP requirements.

B. Project Financing

Lending Instrument

16. The project is structured as an Investment Project Financing (IPF) financed through a grant of US\$ 38.0 million, provided by GAFSP, a multi-donor TF. The grant is implemented as a Recipient-Executed Trust Fund (RETF).

Project Cost and Financing

17. The total project cost inclusive of taxes and duties is US\$ 38.0 million including US\$ 3.7 million of physical and prices contingencies, fully financed by the RETF. The project cost is expressed in 2014 constant prices. Physical contingencies at 10 percent are applied to civil works, while 5 percent contingencies are applied to all cost items except goods and salaries. Price contingencies are based on the projected annual local and foreign inflation rates and are applied to all cost items. The project cost summary by component is shown in Table 1.

Table 1 Project Cost by Component (US\$ million)

	GAFSP		Total
	Amount	%	%
Rehabilitation and Modernization of Irrigation and Drainage Infrastructure	28,0	100.0	73.7
Agricultural Advisory Services	3.5	100.0	9.2
Nutrition Improvements	4.6	100.0	12.0
Project Management	1.9	100.0	5.1
Total PROJECT COSTS	38.0	100.0	100.0

C. Lessons Learned and Reflected in the Project Design

18. The project does not introduce new interventions and approaches, but adopts and builds on activities in on-going and successfully completed projects. The Rehabilitation and Modernization of I&D Infrastructure Component adopts key lessons from OIP-1, OIP-2, and its AF and AADP, including: (i) preparing designs and procurement documents for the first batch of WUAs by project effectiveness; (ii) clear criteria and procedures for the selection of WUAs; (iii) increased emphasis on the provision of agriculture advisory services; (iv) the signing of WUA and FWUA repayment agreements prior to the commencement of rehabilitation works; and (v) repayments by WUAs of the cost of rehabilitation and equipment to a special MOF account designated to provide further support to the irrigation sector.

19. The Agricultural Advisory Services Component builds on experiences and lessons learned from rural advisory services projects supported by the World Bank, International Fund for Agricultural Development (IFAD) and SDC. The key lessons include: (i) direct investment support to farmer groups with rehabilitated I&D systems through a small grants, together with facilitation, training and demonstrations, can build capacity and provide significant financial benefits and indirect benefits to others through demonstration effects; (ii) farmer koshuuns (community groups), established in all AA under AISP, are an effective means to deliver advisory services but showed that substantial farmer contributions for advisory services cannot

be expected; and (iii) a number of good quality locally-based NGOs and advisory service providers exist that can provide relevant and quality services.

20. The Nutrition Improvements Component builds on a tested and satisfactory model of nutrition education campaigns and supplementary feeding carried out by MoH and UNICEF, and implemented through well-established VHCs. Dietary diversification through crop and livestock production on household plots draws on the on-going experience with CSB's and SHG's under APAP and the completed AISP. Evidence from elsewhere (Nepal) has shown that nutrition education for improved nutrition is less effective without agriculture-related interventions; and vice versa when increases in household income and productivity of nutritious foods occurs without increased knowledge about an adequate health diet, effects on nutrition security are limited.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

21. The project will be implemented by the DWRLI, currently under MoALI, through the PIU created in 2000 to implement OIP-1, OIP-2 and its AF. DWRLI has gained substantial experience in project implementation and management, shown satisfactory technical and working arrangements for the rehabilitation of I&D systems, and acquired the competence to manage core functions such as procurement, FM and M&E. Consequently, the project start-up can be accelerated with early identification of WUAs and AA, and preparation of designs and bidding documents for civil works and equipment ahead of project effectiveness. The PIU reports directly to the DWRLI General Director and will have direct responsibility for project management, administration and coordination. The PIU will also report to a Steering Committee consisting of MoF, MoH and MoALI and chaired by a representative of the DWRLI. This Committee supervised project preparation and will provide regular oversight during project implementation.

22. The PIU is well-staffed for project management and currently includes: a director; a deputy director, chief and regional engineers; an institutional coordinator; and communications, procurement, FM and M&E staff. The PIU will be strengthened with additional engineering staff for implementation of Component 1, and separate coordinators for Components 2 and 3. The PIU will continue to manage the AF of the OIP-2 until December 30, 2016 and the NWRMP until 2017. The engineering, procurement, FM and M&E units will work on all three projects and the additional staffing capacity for these core roles will be financed by the project. Overall, the PIU will be responsible for ensuring the effective integration of the three technical components and the coordination of the government agencies and development partners.

23. For Component 1, the PIU will be responsible for identification, design, procurement, construction supervision and contract management for civil works. The PIU will manage contracts for civil works and for specialized designs for more complicated structures to specialized institutes.

24. For Component 2, the PIU will be responsible for conducting information sessions with WUAs to ensure broad beneficiary participation, and for procurement and administration of consultants for the development of agricultural development plans, and training of WUAs in TOR and contract management, advisory services for knowledge dissemination and on-farm water management demonstrations. A Coordinator, with a support of short-term technical

assistance, will support the PIU with management and administration of the component, coordination with other components and supervision of contracts. All procurement of goods and services using grant funds will be undertaken through community procurement by individual WUA. The advisory service provider will be selected by the WUA, with a contract based on performance and output.

25. For Component 3, the PIU will be responsible for ensuring effective coordination within the component and with other components; procuring and supervising goods and services contracts financial management; and M&E activities. Sub-component 3.1 and 3.2 will be implemented by the PIU under the guidance of the MOH and UNICEF. Sub-component 3.3 will be implemented by the PIU through local NGOs and advisory service providers. Sub-component 3.4 will be managed by the PIU with technical oversight of the MOH and in coordination with FAO, WFP, UNICEF and the Bank. A full-time Coordinator in the PIU will be primarily responsible for overall management and administration.

B. Results Monitoring and Evaluation

26. The M&E system established by the PIU will gather data on the physical and financial progress of the project, the performance of the WUAs, the performance of contractors under all three components, and the project's achievements and results. The PIU's M&E Specialists will be responsible for undertaking regular M&E activities and contracting and supervising baseline, mid-term review and various evaluation studies. The PIU will contract external M&E consultants to carry out the baseline, mid-term review and evaluation studies at the end of the implementation period. The implementation of the M&E program will follow the guidelines set out in the GAFSP's M&E Plan and the requirements of the Bank.

27. The objectives of the M&E program are to: (i) monitor the performance of the project in relation to targets set for the PDO and intermediate results indicators as given in the Results Framework (see Annex 1), including gender-disaggregated results; (ii) provide regular reports to the government, the Bank and GAFSP; (iii) inform the government, the Bank and GAFSP of actual or potential problems arising during implementation to facilitate timely adjustments and improvements to project design and/or implementation arrangements; and (iv) determine whether the potential beneficiaries are responding to project activities as expected. The M&E unit will work closely with NWRMP to monitor and report on the WUA capacity building activities.

28. The progress of project implementation and the findings of M&E studies will be presented in the PIU's quarterly and annual (fourth quarter) progress reports and the implementation completion and results report (ICR). The fourth quarter (annual) report will provide information on the project's performance both cumulatively and during the past year as well as the annual work plan and budget for the following year. An ICR will be prepared at the end of the project. These reports will follow the reporting procedures developed under OIP-1, OIP-2 and AF and incorporate any additional requirements of GAFSP and the Bank, including the timing of reports.

C. Sustainability

29. Ownership and commitment to the project by MoF, MoH and MoALI is strong, as demonstrated by the inter-ministerial Steering Committee, which has been established in 2014 and has been guiding project preparation and implementation. Sustainability for Component 1 would be improved by number of measures including through (i) technical assistance to the sector financed by NWRMP with a greater focus on a long-term MOM and asset management

planning and (ii) use of funds accumulated in the special account of the MOF for the development of the irrigation sector, and building on the experience from OIP-1, OIP-2 and AF and further supported under the NWRMP. Remaining issues include: (i) the adequacy of financing of on-farm systems; (ii) the capacity for adequate MOM of the main off-farm systems; and (iii) the WUAs' capability to generate enough revenue through the ISFs. These issues are a long-term threat to the sustainability of the sector, but they are being addressed through technical assistance under NWRMP. WUAs have gradually improved and developed into sustainable organizations over the last 10 years, but attention will be given to long-term MOM planning under NWRMP.

30. The sustainability of the technical advice and agricultural practices provided under Component 2 will be enhanced through: (i) intensive participation of WUA members in the preparation of the agricultural development plan, which will include sustainable management practices; (ii) cost-sharing by members for the on-farm demonstrations; and (iii) building strong relationships between WUAs and advisory service providers through contractual arrangements.

31. Component 3 is part of the Food Security and Nutrition Program 2014-2017 and contributes to a more sustainable national solution for under-nutrition, also being supported through other government and development partners programs. Specifically, the education campaign and the household plot production and dietary diversification activities will enhance the skills of households to make a sustained improvement in their own food and nutrition security levels. The Secretariat to support the national FSC will be established and it will be supported by the project in coordination with FAO, WFP and UNICEF for 2 years, before gradual hand-over.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating (H, S, M or L)
1. Political and governance	Substantial
2. Macroeconomic	Moderate
3. Sector strategies and policies	Substantial
4. Technical design of project or program	Substantial
5. Institutional capacity for implementation and sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and social	Moderate
8. Stakeholders	Moderate
9. Other	N/A
Overall	Substantial

32. The overall risk rating of the project is substantial because of: (i) the complexity of the multi-sectoral and integrated approach in combining investments in I&D, agricultural advisory services and nutrition; (ii) the coordination required during implementation across Government and international agencies; (iii) the unstable political and institutional environment, which

increases the risk for political interference in the sector and for inadequate governance in project management; and (iv) the coordination with the technical assistance under NWRMP for WUA capacity development to ensure sustainability of investments in I&D rehabilitation.

33. At the country level, there is a substantial risk of delay in the project's effectiveness due to the requirement for three clearances by the Parliament: before negotiations, before signing and before effectiveness. There is substantial risk in the management, process and level of repayment by WUAs of part of the costs for rehabilitation and equipment. The dialogue with Government will continue and the Bank task team will closely monitor WUA repayments.

34. Mitigation measures under the APNIP include: (i) Steering Committee consisting all related line ministries has been established for internal coordination and to provide guidance to the project; (ii) the project will support the secretariat of the FSC in overseeing, coordinating and monitoring the Food Security and Nutrition Program; (iii) one PIU will manage the inter-linked APNIP, NWRMP, and OIP-2, with dedicated staff responsible for each project and coordinators responsible for each project component; (iv) the 30 WUAs and 60 AAs will be selected from both south and northern regions to maintain an equitable geographical coverage and ethnic balance in the selection on beneficiaries; (v) the project is planned for a period of 6 years, giving some flexibility to incorporate lessons learned from the first 2 years of implementation; and (vi) all components of APNIP have already been tested separately under previous projects.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

35. The costs of civil works are based on current unit rates recorded for latest civil works contracts for OIP-2 AF. Unit prices for equipment and goods are prices quoted by local suppliers. National staff salaries and international consultants fees are obtained from the latest consultancy contracts concluded under OIP-2 AF. The project is expected to generate agricultural and nutrition benefits for the population in 60 Ayil Aimak (AA). Main agricultural benefits will include: (i) increased irrigated crop productivity due to improved irrigation water supply and application of improved farm practices and technologies on around 60,000 ha operated by around 36,000 farm families; and (ii) increased agricultural profitability due to diversification towards higher value crops and increased marketed share of crops for around 50,600 farm families operating approximately 84,000 ha (inclusive of 60,000 ha mentioned under (i)). Key nutrition benefits from the nutrition interventions, which are expected to result in improved nutrition status of around 425,000 people, include: (i) improved availability (and consumption) of nutritious food; (ii) improved access to nutritious food by raising farm households' incomes; (iii) provision of micronutrient supplements and vitamins; and (iv) improved food utilization.

36. Quantified agricultural and nutrition benefits include (i) 15 percent yield increases for all field crops and 10 percent increase for orchards; (ii) incremental production on five percent of irrigated lands that are currently left unused due to lack of irrigated water supply; (iii) prevented workforce losses from nutrition-related mortality; and (iv) averted productivity and income losses to children who are under five at the project start. Nutrition benefits to pregnant women, women of reproductive age, and other adult project beneficiaries were not accounted in the analysis.

37. The project investments in rehabilitation of I&D systems and agricultural extension and marketing is expected to generate incremental agricultural net benefits at US\$ 2.3 million annually. Financial returns for representative farms located in the North and South, with respective average holding sizes of 3.63 ha and 1.25 ha are analysed. The respective incremental gross margins to the Southern and Northern farmers will be US\$ 380 and US\$ 682. The nutrition interventions are expected to generate incremental net benefits at US\$ 3.5 million annually. Financial and economic returns to the overall project are estimated at FRR of 24.8 percent and FNPV of US\$ 64.2 million and ERR of 26.3 percent and ENPV of US\$ 48.2 million.

38. Sensitivity analysis was undertaken to test the robustness of the project for four sensitivity variables: (i) an increase in the project cost, (ii) a benefits decline, (iii) a two-year delay in benefit accumulation and (iv) a simultaneous increase in the project cost and reduction in benefits. The project is moderately sensitive to changes in the all variables, but within 20% changes in the four variables, the EIRR remains higher than 20%, so the project is considered robust.

B. Technical

39. Under Component 1, the project will finance an expanded rehabilitation program of on-farm I&D systems and build on the successful implementation experience gained over the past decade under OIP-1, OIP-2 and AF. The same procedures for selection, approval, design and construction supervision of I&D rehabilitation sub-projects will be applied. All civil works contracts for rehabilitation will be administered by the PIU. Technical supervision by the Bank has shown that this system yields good results, with high quality rehabilitation design and works completed in accordance with the WUAs' requests. Based on the recent OIP-2 and AF contract prices, the estimated average per hectare rehabilitation costs have increased from US\$ 300 per ha to US\$ 350 per ha, including 10 percent for critical off-farm improvements, but excluding design and construction supervision, usually about 2 percent of civil works. Development of engineering designs for systems rehabilitation will be undertaken "in-house" by the PIU Oblast design teams and contracted out for more complex designs to specialized institutes. Supervision of works will be conducted through the licensed site-supervisors contracted by the PIU.

40. The approach of Component 2 is based on similar projects already satisfactorily implemented in the country, particularly AISP. WUAs selected for rehabilitation works will be trained in the preparation of TORs and management of contracts, will receive a technical assistance to develop and implement agricultural development plans, and will be provided with a grant to procure agricultural advisory services, goods and works to implement the development plans, including for inputs, materials, equipment and minor improvement in farm infrastructure required to implement the training and demonstration plots supported under the plans over a two year period. The project will continue the successful demonstration program for on-farm water management started under the WMIP that will benefit all WUAs in selected 60 AA.

41. Component 3 builds on existing experience within the country. The nutrition education campaign and supplementary feeding program will use the extensive experience and network of MoH and UNICEF in implementing similar programs. This component also draws on coordination and monitoring networks set-up under the Health SWAP. The sub-component on household plot production and diversification will draw on the demonstrated experience within the country with improving household plot production, including under APAP.

C. Financial Management

42. The PIU will be responsible for implementation of the FM function. The PIU's extensive experience in implementing OIP-1, OIP-2 and AF, includes a satisfactory FM system of budgeting, accounting, financial reporting, auditing, and internal controls. The PIU maintains proper FM requirements under these projects, including regular and timely submission of quarterly reports¹⁰ and satisfactory project audits. The PIU has experienced FM staff: a financial manager and two disbursement specialists. The FM system operated by the PIU can record all transactions and balances, and generate and submit financial statements to the Bank regularly and on time. Internal control systems and procedures established by the DWRLI ensure the reliability of accounting records and the safeguarding of project resources and assets. The PIU will ensure the accounting software currently used for on-going projects effectively supports accounting and reporting requirements for APNIP. The system will automatically generate reports for the GoK as well as Statement of Expenditures (SOEs) and Interim Financial Reports (IFRs) required for reporting to the Bank. The system will have security safeguards for reliable reporting and data integrity.

43. Disbursements from the Grant Account will follow the transaction-based method, i.e., traditional Bank procedures: including advances to the designated account, direct payments, Special Commitments and reimbursement (with full documentation and against SOEs). The FM arrangements will be regularly monitored during project supervision and adjustments made to ensure fiduciary compliance. More details on FM arrangements are provided in Annexes 3 and 4.

D. Procurement

44. Procurement for APNIP will be carried out in accordance with Guidelines: Procurement of Goods, Works and Non-consulting Services under International Bank for Reconstruction and Development (IBRD) Loans and International Development Association (IDA) Credits and Grants by World Bank Borrowers" dated January 2011 (revised July 2014) and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 (revised July 2014); and the provisions in the legal agreement.

45. The procurements arrangements for APNIP are identical to the procurement arrangements for OIP-2 and AF. The PIU is responsible for procurement and is currently staffed with one senior procurement specialist and one procurement specialist who has attended Bank sponsored procurement training. Procurement performance under OIP-2 and AF is rated moderately satisfactory. Risk assessment is done through the Systematic Operations Risk-rating Tool (SORT). Identified risks and proposed mitigation measures are described in the section on Key Risks and Mitigation Measures. The main procurement related risk is that the PIU does not have enough capacity for implementation of the procurement plan which may cause potential delays. Another risk is the low level of international competition in procurement due to the high cost of doing business in the region and low capacity of local contractors. To mitigate the risks identified: (a) the project implementation manual (PIM) will include a procurement section detailing procurement arrangements, independent complaint handling mechanism, including a Grievance Redress Mechanism (GRM), and contract management; and (b) the Bank's procurement team will provide advice and assistance to the PIU on a regular basis. The Bank

¹⁰ With exception of IFRs for the IV quarter of 2013 and the I quarter of 2015 which were submitted late.

will closely monitor procurement capacity, and if required, the PIU will be strengthened with additional staff. The procurement risk is rated as moderate after mitigation.

46. *Procurement Plan* has been drafted and will be updated at least annually, or as required, reflecting the actual project implementation needs and improvements in institutional capacity. The procurement plan and detailed arrangements are presented in Annex 3.

E. Social (including Safeguards)

47. To align with ongoing efforts for inclusion, enhanced participation and conflict mitigation, the WUAs selected under the project will reflect demographic and geographic balance. This will ensure a balanced beneficiary population with equitable representation of various demographic groups. To ensure effective implementation and facilitate the tracking of (gender-disaggregated) beneficiary-level results, a baseline survey will be conducted at the start of the implementation period. Using survey-based data collection and appropriate qualitative methods, the project will monitor key baseline indicators on beneficiaries and results, and contribute to the ongoing gender, conflict awareness and social sustainability of the project.

48. Involuntary Resettlement OP 4.12 is triggered for site-specific works possibly requiring small-scale land acquisition. This is presently foreseen for one specific site for a sediment basin linked to the Shakaftar Headworks and Main Canal, Alabuka Raion, Jalalabad Oblast. The Resettlement Action Plan (RAP) on Shakaftar main canal was prepared, which identified one farmer losing 5 fruit trees. The project will restore the irrigation network that is needed for watering fruit trees as a preferred means of compensation for the Project Affected People (PAP) losses. The RAP was disclosed on April 16, 2014 at the Infoshop, the DWRLI web site, and at the raion and contractor level. Part of the works will require acquisition of a parcel of privately owned land. In addition to site-specific RAPs, a Resettlement Policy Framework (RPF) was prepared as a precautionary measure to provide the overall framework for handling OP 4.12 issues if and when they arise during project implementation. RPF was prepared in consultation with the project beneficiaries, finalized and disclosed on March 18, 2015. The PIU hired a safeguards specialist to be responsible for ensuring an effective implementation of safeguards measures in line with the national policies on land acquisition and resettlement and with World Bank policy- OP 4.12..

49. The project includes measures to ensure citizen engagement in project design and implementation. It will support intensive participation of WUAs and WUA members in the rehabilitation of their I&D systems, preparation of their agricultural development plans, and participatory rural appraisal (PRA) of problems, needs, interests and options for household plot improvement and strengthening the transparency and dispute resolution practices under WUAs. the PIU will contract NGO(s) to be responsible for conducting the PRA; carrying out the vulnerability assessments; mobilizing self-help groups and establishing the Community Seed Banks; and monitoring and reporting. A PIU Grievance Redress Mechanism will be available to the public to cover all issues related to project-funded activities. GRM procedures have been developed under OIP-2, which will also apply to APNIP. In addition, the PIU will hire a communications specialist to develop a communication strategy to ensure that information is accessible to beneficiaries and project stakeholders in a timely manner.

50. The project will particularly promote the engagement of women in project activities. Women are involved in irrigation on household plots and in some cases on farmlands when the male head of household is away. Irrigation water is used for domestic purposes including cleaning, washing, small and big livestock feeding, and in some cases cooking. Their knowledge

on irrigation, nutrition issues, as well as participation in WUAs, are limited. The project will promote women's empowerment in three ways: i) include women in WUA trainings under Component 2 in particular in topics where women themselves have shown interest, such as conflict resolution and audit roles, and accountant functions; ii) target women and children as the main beneficiary of component 3, and iii) collect gender-disaggregated data as part of the Results Framework to ensure that the results of the project on female beneficiaries are captured robustly.

51. The project is designed to mitigate unintended conflict related risks and social tensions that may result as a result of project activities. The 60 AA will be selected from both south and northern regions to maintain an equitable geographical coverage, as well as to ensure ethnic and cultural balance in the selection on beneficiaries. Component 1 of the project will support the strengthening of dispute Resolution and Audit committees within WUAs.

F. Environment (including Safeguards)

52. The project does not introduce new interventions, but builds on activities under on-going or satisfactorily completed projects. The project has been classified as Category 'B' for the purposes of OP 4.01 on Environmental Assessment because it is not expected to involve any large scale, significant or irreversible adverse environmental impacts, as experienced under OIP-1, OIP-2 and AF. Potential adverse environmental impacts are not expected to be significant and can be effectively prevented or minimized by the application of appropriate preventive actions and/or mitigation measures. These measures are identified in the Environmental Management Plan (EMP) that has been disclosed on April 16, 2014 in country and Feb 18, 2015 in the Infoshop, and which is subject to public consultation with participating WUAs during project implementation. The EMP is setting forth the modalities and guidelines/procedures for site-specific environmental screening and preparation of site-specific EMPs for the existing irrigation schemes that will be selected in line with the established criteria and procedures. These site-specific EMPs will be prepared by the design consultants for each WUA-managed irrigation system and will include the set of mitigation, monitoring, and institutional measures and procedures required under the Project, in order to eliminate adverse environmental impacts, offset them, or reduce them to acceptable levels, as well as actions needed to implement these mitigation measures.

53. *Climate Change.* The agriculture sector is projected to have to adapt to increasing temperatures, varying precipitation and reduced surface water resulting in increased aridity and desertification. A Climate and Disaster Risk Screening conducted for the project indicate that the project has a moderate impact and moderate risk pertaining to the impact on climate change on the I&D investments financed under the project, and a low impact and low risk pertaining to the agricultural advisory, nutrition and equipment investments financed under the project. The project will be cognizant of climate change impacts and will raise awareness of climate change adaptation practices. Climate change issues will be addressed within the framework of NWRMP-1, which include financing for improved water resource planning. The country is located in a highly seismic zone as such all infrastructure projects including APNIP are vulnerable to earthquakes. As a standard mitigation measure, infrastructure financed under APNIP will be designed and constructed in line with the relevant country's building codes.

G. Other Safeguards Policies Triggered

54. The following safeguard Policies will be triggered: (i) Pest Management OP 4.09, (ii) Safety of Dams OP/BP 4.37, and (iii) Projects on International Waterways OP/BP 7.50.

55. *Pest Management OP 4.09.* The training in integrated pest management (IPM) will be by qualified and experienced IPM trainers.

56. *Safety of Dams OP/BP 4.37.* As in OIP-2 and AF, the project will follow a program approach, with the WUA-managed irrigation systems eligible for rehabilitation being selected in the first year of implementation. Consequently, it is not known now if there are any systems with water storage reservoirs included in the project. The experience under OIP-1, OIP-2 and AF indicates that some systems may be selected that have small (less than 15 m in height) dams. If such schemes are selected, appropriate actions to ensure dam safety, including more detailed inspections and safety measures, will be taken. In the case of small-scale irrigation dams and night storage reservoirs that may be part of a selected irrigation system, special guidelines governing this situation will be prepared and included in the EMP.

57. *Projects on International Waterways OP/BP 7.50.* The project will finance minor rehabilitation or alterations of existing irrigation systems and some of these rely on water from the Naryn, Talas and Chui rivers. These rivers are international waterways or tributaries of international waterways shared with Kazakhstan, Tajikistan and Uzbekistan. Since the project will not finance the enlargement of existing irrigation systems or development of new irrigation areas, the interventions are not expected to lead to increased water abstraction from any of the mentioned international waterways or their tributaries. The project is therefore not expected to adversely affect the quality or quantity of water flows to other riparian states. Consequently, the project falls under the exception to the riparian notification requirement contained in paragraph 7(a) of OP 7.50, as approved by the Vice President for Europe and Central Asia Region on June 11, 2015.

H. World Bank Grievance Redress

58. 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 and Monitoring

Country: Kyrgyz Republic

Project Name: AGRICULTURE PRODUCTIVITY AND NUTRITION IMPROVEMENT PROJECT (P132754)

Results Framework

Project Development Objectives

PDO Statement

The proposed project development objective is to increase agricultural productivity and food and nutrition security of rural households in selected areas nationwide.

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values						End Target
		YR1	YR2	YR3	YR4	YR5	YR6	
Average % increase in crop production for WUAs (with completed I&D and advisory services) (Percentage)	0.00	0.00	0.00	10.00	10.00	10.00	10.00	10.00
Proportion of households with food consumption score (FCS) above 28.5 points (Percentage)					20.00		40.00	40.00
Water users provided with new/improved irrigation and drainage services (number) (Number) - (Core)	0.00	0.00	0.00	2400.00	14400.00	30000.00	36000.00	36600.00
Water users provided with irrigation and drainage services - female (number) (Number - Sub-Type: Breakdown) - (Core)	0.00	0.00	0.00	480.00	2880.00	6000.00	7200.00	7200.00

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Number of WUAs providing improved water delivery that closely matches crop irrigation water requirements (Number)	0.00	0.00	0.00	2.00	12.00	25.00	30.00	30.00
Area provided with irrigation and drainage services (ha) (Hectare(Ha)) - (Core)	0.00	0.00	0.00	2500.00	5000.00	20000.00	60000.00	60000.00
Area provided with irrigation and drainage services - Improved (ha) (Hectare(Ha) - Sub-Type: Breakdown) - (Core)	0.00	0.00	0.00	2500.00	5000.00	20000.00	60000.00	60000.00
Operational water user associations created and/or strengthened (number) (Number) - (Core)	0.00	0.00	0.00	2.00	12.00	25.00	30.00	30.00
Number of successfully rehabilitated systems (Number)	0.00	0.00	0.00	2.00	12.00	25.00	30.00	30.00
Number of development plans prepared and being implemented by WUAs (Number)	0.00	0.00	0.00	5.00	15.00	25.00	30.00	30.00
Proportion of WUA members with evidence of increased adoption of improved crop management practices (Percentage)	0.00	0.00	0.00	15.00	35.00	50.00	80.00	80.00
Client days of training provided (number) (Number) - (Core)	0.00	0.00	3600.00	7200.00	7200.00	7200.00	7200.00	7200.00

Client days of training provided - Female (number) (Number - Sub-Type: Breakdown) - (Core)	0.00	0.00	1800.00	3600.00	3600.00	3600.00	3600.00	3600.00
Proportion of target beneficiary participating in household nutrition campaigns (Percentage)	0.00	15.00	40.00	60.00	80.00	80.00	80.00	80.00
Proportion of households participating in component 3.2 (Percentage)	0.00	10.00	25.00	35.00	45.00	60.00	80.00	80.00
Proportion of households adopting methods to improve household nutrition (Percentage)	0.00	0.00	0.00	0.00	20.00	50.00	80.00	80.00
Grievances registered related to delivery of project benefits addressed (%) (Percentage) - (Core)	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00
Grievances related to delivery of project benefits that are addressed-(number) (Number - Sub-Type: Supplemental) - (Core)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	6.00

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Average % increase in crop production for WUAs (with completed I&D and advisory services)	This indicator measures average % increase in production (as a result of yield and area increases) for all irrigated crops in the first season following the rehabilitation completion and extension service delivery in rehabilitated WUAs.	Annually	PIU Annual Reports, WUA SU Annual Report, Impact Survey	PIU M&E, WUA SU, M&E Consultants
Proportion of households with food consumption score (FCS) above 28.5 points	Recommended food consumption threshold for Kyrgyzstan: 0-28 = poor food consumption; 28.5 to 42 = borderline food consumption; and above 42.5 = acceptable food consumption.	Mid term review and end of project evaluation	Mid Term Review Report, End of Project Evaluation Survey	PIU, M&E Consultants
Water users provided with new/improved irrigation and drainage services (number)	This indicator measures the number of water users who are provided with irrigation and drainage services under the project.	Annually	PIU Annual Reports, End of Project Evaluation Survey	PIU M&E, M&E Consultants
Water users provided with irrigation and drainage services - female (number)	No description provided.	Annually	PIU Annual Reports, WUA SU Annual Report, Impact Survey	PIU M&E, WUA SU, M&E Consultants

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Number of WUAs providing improved water delivery that closely matches crop irrigation water requirements	No description provided.	Annually	PIU Annual Reports, Impact Survey	PIU M&E, WUA SU, M&E Consultants
Area provided with irrigation and drainage services (ha)	This indicator measures the total area of land provided with irrigation and drainage services under the project, including in (i) the area	Quarterly	PIU Annual Reports	PIU M&E

	provided with new irrigation and drainage services, and (ii) the area provided with improved irrigation and drainage services, expressed in hectare (ha).			
Area provided with irrigation and drainage services - Improved (ha)	This indicator measures the area provided with improved irrigation and drainage services, expressed in hectare (ha).	Quarterly	PIU Annual Reports	PIU M&E
Operational water user associations created and/or strengthened (number)	This indicator measures the number of water user associations created and/or strengthened under the project that are operational.	Annually	PIU Annual Reports, Impact Survey	PIU M&E, M&E Consultants
Number of successfully rehabilitated systems	This indicator measures the number of I&D schemes that have been successfully rehabilitated.	Quarterly	PIU Quarterly & Annual Reports	PIU M&E
Number of development plans prepared and being implemented by WUAs	The indicator is self-explanatory.	Quarterly	PIU Quarterly & Annual Reports, Service Provider Reports	PIU M&E, Service Provider
Proportion of WUA members with evidence of increased adoption of improved crop management practices	This indicator measures the number of WUA members who have adopted an improved crop management practices promoted by the project such as on-farm planning and management, land leveling, deep ploughing, crop production, farm diversification, livestock husbandry, on-farm water management, efficient irrigation technologies (incl. drip and trickle irrigation and drainage improvement), soil fertility and protection, and IPM	Annually	PIU Quarterly & Annual Reports, Service Provider Reports, Impact Survey	PIU M&E, Service Provider, M&E Consultants
Client days of training provided (number)	This indicator measures the number of client days of training provided i.e. the number of clients who completed training multiplied by the duration of training expressed in days.	Annually	PIU Annual Reports	PIU M&E, M&E Consultants
Client days of training provided - Female (number)	This indicator measures the number of client days of training provided i.e. the number of female	Annually	PIU Annual Reports	PIU M&E, M&E Consultants

	clients who completed training multiplied by the duration of training expressed in days.			
Proportion of target beneficiary participating in household nutrition campaigns	This indicator measures numbers of project beneficiaries who have participated in campaigns promoting improved household nutrition.	Annually	PIU Annual Reports, Impact Survey	PIU M&E, M&E Consultants
Proportion of households participating in component 3.2	This indicator measures pregnant women, women in reproductive age and adolescent girls receiving folic acid and iron and children of 6-24 months receiving sprinkles for children of 6-24 months	Annually	Contractor Reports, Impact Survey	Contractor, M&E Consultants, UNICEF
Proportion of households adopting methods to improve household nutrition	This indicator measures the number of WUA members who have participated in training that promote improved household nutrition through increased crop production on household plots and food preservation by the project.	Annually	PIU Annual Reports, Baseline/KAP survey and Impact Survey, Regular Monitoring	PIU M&E, M&E consultants, MOH, PIU
Grievances registered related to delivery of project benefits addressed (%)	This indicator measures the transparency and accountability mechanisms established by the project so the target beneficiaries have trust in the process and are willing to participate, and feel that their grievances are attended to promptly. It is understood that local sensitivities and tensions will not allow grievance or redress mechanisms to be established in all projects.	Annually	PIU Annual Reports, WUA SU Annual Report, Mid-term Survey, Impact Survey	PIU M&E, M&E Consultants, WUA SU
Grievances related to delivery of project benefits that are addressed-(number)				

Annex 2: Detailed Project Description

KYRGYZ REPUBLIC: Agricultural Productivity and Nutrition Improvement Project

1. The project development objective is to increase agricultural productivity and food and nutrition security of rural households in selected areas nationwide. To meet this objective, the project has four components: (i) Rehabilitation and Modernization of I&D Infrastructure; (ii) Agricultural Advisory Services; (iii) Nutrition Improvements; and (iv) Project Management.

Component 1 - Rehabilitation and Modernization of Irrigation and Drainage Infrastructure (total cost US\$ 28.0 million)

2. *Contribution to PDO.* This component will contribute to increasing agricultural productivity by improving and modernizing I&D infrastructure to ensure improved and sustained access to adequate agriculture water resources.

3. This component finances: (i) civil works for the rehabilitation and modernization of the existing command area of I&D systems on about 60,000 ha managed by approximately 30 WUAs; (ii) the provision of essential maintenance equipment to WUAs and FWUAs; (iii) off-farm irrigation infrastructure, and water measurement structures at the intakes of around 300 WUAs for measurement of water delivered; and (iv) limited rehabilitation works on critical off-farm structures managed by the DWRLI.

4. *Civil Works.* Works to be carried out include the rehabilitation/reconstruction of on-farm I&D canals, the cleaning of on-farm drains and storage reservoirs of sediment, and rehabilitation/construction of outlets, water measurement and other hydraulic structures. Attention will be given to ensuring adequate water supply to household plots within the WUAs to support sub-component 3.2 on domestic gardening. Limited rehabilitation works on critical off-farm infrastructure aims to increase the capacity of six pilot RVKs to enhance their MOM capacity.

5. The project includes provisions for: hydrological and geological surveys, independent expertise technical review and environmental assessment of the proposed investments as per the requirements of the construction norms of the Kyrgyz Republic, site supervision for the duration of each rehabilitation contract to ensure full-time supervision of construction works (2 percent of civil works cost), and procurement of 30 units of maintenance equipment such as excavator or other minor equipment for WUAs selected for on-farm systems rehabilitation and 10 pieces of heavy maintenance equipment or set of smaller maintenance equipment for FWUAs (US\$44,000 per unit).

6. *WUA Selection.* From 481 WUAs nationwide, the 30 highest ranked WUAs meeting the selection criteria and not benefiting from previous rehabilitation programs will be eligible for rehabilitation and equipment. The procedures for WUA selection, I&D rehabilitation design and construction supervision developed under OIP-1, OIP-2 and AF will be used. The selection of WUAs is based on seven milestones,¹¹ with WUAs achieving milestone 4 eligible to enter into

¹¹ The seven milestones are: (i) formal establishment of the WUA, including legal registration; (ii) WUA staff hired, paid and training program started; (iii) WUA Council and management have made an O&M plan, including an ISF development plan that covers all costs. The proposals have to be approved by a general assembly meeting; (iv)

the design and planning process for rehabilitation. Under OIP-2 the selection criteria were upgraded to include an assessment of: (i) the condition of off-farm infrastructure; (ii) the ISF collection rate; (iii) the WUA annual budget, in comparison with the average for the Oblast; (iv) the expenditure on maintenance of the I&D system; and (v) the size of the irrigation command area. The selection of WUAs will be on a batch basis as follows: 5 (2016), 15 (2017) and 10 (2018).

7. *Review and Approval.* The current two-stage World Bank review process will be applied: (i) pre-design – approval of the provisional inclusion of the WUA and detailed design, and (ii) post-design - allow proposed rehabilitation works to be tendered. The review of proposals will be carried out by a small team headed by the chief engineer, the M&E specialist, local project engineers, raion SU staff, and WUA representatives. This assessment will establish the WUA’s readiness, willingness, and competence (financial, administrative and technical) to participate in the rehabilitation program. The assessment will include a ‘walk through’ reconnaissance of the system to determine preliminary feasibility and costs, and ensure compliance with selection criteria. RVK engineers will be consulted regarding necessary off-farm structures.¹² The assessment team will prepare an IDA form¹³ (under five pages) to provide justification for the WUA’s provisional inclusion in the program to be approved by the Bank. This form will include a summary description of rehabilitation proposals, a schematic map, and an economic assessment of the tentative costs and benefits. World Bank approval will signal the PIU to begin detailed engineering design.

8. *Engineering Design.* Development of engineering designs for systems rehabilitation will be undertaken “in-house” by the PIU Oblast design teams following the structure and arrangements applied under OIP-2 and AF. The team for design and construction supervision comprises the chief Engineer based in Bishkek, responsible for the rehabilitation component, supported by two regional engineers based in Osh for the Southern oblasts and Bishkek for the Northern oblasts. Five oblast level rehabilitation teams under the PIU were created under OIP-2 AF, one for the Southern oblasts and four for the Northern oblasts. Each rehabilitation team includes a number of professional staff, equipped with vehicles, computer sets, and field equipment. Provisions will be made under the project for additional staff, vehicles and equipment.

9. *Supervision.* Supervision of civil works will be carried out by the contracted on-site supervisors (one site supervisor per contract) under the direction of regional engineers. On-site supervisors will be responsible for the quantity and quality of works and materials used.

members have paid the agreed service fees, including payment to the DWRLI's raion offices during the period since WUA establishment; (v) WUA management, assisted by DWRLI oblast and rayon offices, develop alternatives for irrigation system rehabilitation, including the associated costs. Alternatives must be technically, economically (financial internal rate of return of at least 12 percent) and environmentally viable. The WUA members involved during formal and informal meetings to express their perceived rehabilitation needs; (vi) WUA members select an alternative for irrigation system rehabilitation; (vii) WUA membership votes to borrow funds for irrigation system improvement under the agreed upon repayment terms. The WUA Council would officially request the PIU to carry out the agreed rehabilitation works

¹² For instance, a sedimentation basin is likely to be constructed in Jalalabad Oblast, to help WUAs located in the Shakaftar irrigation system to reduce their siltation of canals.

¹³ International Development Association (IDA) form is a form developed for screening and selection of WUAs for the rehabilitation support.

Regional engineers will regularly visit sites during construction and be responsible for ensuring the quantity and quality of implemented works. The on-site supervisors, regional engineers and the chief engineer will verify the bill of completed quantities, cumulative bill of quantities, requests for interim payment, and the completion certificate prepared by the contractor. The regional engineers will ensure that all construction supervision procedures (testing, material certification, laboratory checking etc.) as per the legislation of the Kyrgyz Republic are fulfilled by the contractor. Following the completion, acceptance and hand-over of works, the rehabilitated/constructed on-farm and/or off-farm facility will constitute a fixed asset on the WUA and DWRLI balance sheet, respectively, as per the relevant legislation of the Kyrgyz Republic.

10. *Infrastructure Costs.* The average on-farm rehabilitation and modernization cost per hectare is estimated at US\$350, based on recent construction contracts under OIP-2 and AF. This estimated cost includes US\$315 per ha for on-farm rehabilitation and US\$35 per ha for rehabilitation of sections of the off-farm structures, including physical and price contingencies. This average per hectare cost is not a target or ceiling. Actual costs will vary, depending on technical needs, farmers' priorities and willingness to repay their share of construction costs, and the economic viability of the rehabilitation/construction.

11. *WUA Repayment.* The requirement under OIP-1, OIP-2 and AF for WUAs to repay 25 percent of the cost relating to their on-farm I&D rehabilitation and 50 percent maintenance equipment is to be adopted. Each WUA will consult its members to obtain individually signed agreements for repayment by at least two thirds of the membership before contracts are awarded. Repayments will be to a special account at the MOF, designated for future investments in the irrigation sector, including carrying out of urgent repairs and minor rehabilitation works on on- and off-farm I&D systems.

Component 2 - Agricultural Advisory Services (total cost US\$ 3.5 million)

12. *Contribution to PDO.* This component will contribute to both increasing irrigated agricultural productivity and food and nutrition security through the provision of technical advisory services to WUA members improve farm practices and technology and improve access to markets.

13. This component finances: (i) training and technical support for the 30 WUAs selected for rehabilitation of I&D systems to prepare and manage agricultural development plans, including to procure, contract and manage advisory services, goods and works required for implementation of the plans; (ii) technical advisory services for the 30 WUAs selected for rehabilitation works and to WUA members in the 30 adjacent AA for the implementation of the agricultural development plans; (iii) provision of small grants of up to US\$ 30,000 for the implementation of the agricultural development plans managed by the WUAs; (iv) additional advisory services for further knowledge dissemination for a wider group of beneficiaries; and (v) on-farm water management demonstrations, including drip irrigation. Members of the 30 WUAs selected for I&D system rehabilitation and WUAs in selected adjacent Ayil Aimak (AA) will be targeted.¹⁴ The WUA members of the adjacent AA will benefit from (i) participation in demonstrations

¹⁴ If there is more than 1 WUA in the Ayil Aimak where a WUA for I&D rehabilitation is selected then the additional WUA(s) will also benefit from the agricultural advisory services.

carried out in command areas of rehabilitated WUAs and (ii) selected training on agricultural productivity improvement and marketing.

14. *Activity 2.1a: Training and support for WUAs selected for rehabilitation program to prepare and manage agricultural development plans.* The 30 WUAs selected for rehabilitation of I&D systems will be trained by consultants in the preparation of terms of reference (TOR), the management of advisory services contracts and the procurement of goods and works for the implementation of agricultural development plans. At the same time, technical assistance consultants will assist WUAs in the preparation of agricultural development plans and in the facilitation of plan implementation as described in below.

15. *Activity 2.1b: Technical advisory services for WUAs selected for rehabilitation program and for WUA members in the 30 adjacent AA.* Technical advisory services will be contracted to: (i) undertake a PRA of WUA needs and priorities; (ii) assist the preparation of a WUA agricultural development plan; and (iii) facilitate the implementation of the agricultural development plan through technical advice and demonstrations. The contracted advisory service providers will conduct a PRA for each WUA following confirmation that the WUA has been selected for rehabilitation and modernization of its I&D infrastructure. The PRA will be the basis for the preparation of the agricultural development plan and will: (i) identify the problems and issues in crop and livestock production and marketing and other farm and non-farm constraints; (ii) identify training needs and approaches to address problems, issues and constraints; and (iii) collect baseline data to facilitate effective M&E for the component. Additionally, the members of WUAs in adjacent AA will receive selected training on improved irrigated farm practices and technologies and marketing.

16. The development plans will focus on improving farm productivity through the provision of technical advice and demonstrations on topics such as on-farm planning and management, land leveling, deep ploughing, crop production, farm diversification, livestock husbandry, on-farm water management, efficient irrigation technologies (including drip and trickle irrigation and drainage improvement), soil fertility and protection, and IPM. In addition, the development plans will facilitate the development of commercial relationships between farmers and financial institutions, input suppliers, service providers and buyers to exploit identified market opportunities, through advice on collective procurement and marketing, facilitation of contracts and provision of management and financial planning advice.

17. *Activity 2.1c: Small grants.* The project will finance small grants of up to approximately US\$30,000 per WUA selected for rehabilitation support to be utilized over a two year period.¹⁵ The grant may be used for: (i) contracting advisory service providers to assist WUAs in the facilitation of agricultural development plan implementation, including around 80 advisory days per WUA; and (ii) procurement of inputs, materials, cultivation equipment, soil and water testing equipment or other equipment, and minor improvement in farm infrastructure required for the training and demonstration aspects of the agricultural development plan. A grant agreement will be signed between the DWRLI and the WUA, specifying how grant funds are to be used for implementation of the agriculture development plan, and outlining the responsibilities of the WUA. The targeted beneficiaries will contribute an additional 10 percent of the grant as cash or in-kind for materials, labor, goods and equipment for demonstrations. If equipment is procured

¹⁵ On average there is one WUA per Ayil Aimak.

with grant funds, a detailed plan for operations and maintenance will be included in the development plan. All procurement of goods and services using grant funds will be undertaken through community procurement by the WUA.

18. *Contracting of advisory services.* Under the grant, the WUA may select advisory service providers with a contract based on performance and output. The contract would be on an annual basis with provision for a one-year extension depending on satisfactory performance. The WUA may also choose to use their own funds to pay for additional services. To promote continuity of contractual relationships between WUAs and advisory services after the completion of the grant period, the project will provide advice to the WUAs to further formulate TOR, establish contracts with advisory services, to build in the cost of advisory services into water charges and to build awareness amongst members on the costs and benefits of advisory services.

19. *Activity 2.1d: Additional advisory services for further knowledge dissemination.* Small contracts will be provided for advisory service providers for further knowledge dissemination. These advisory services will be contracted by the PIU. The services could include: organizing exchange visits by non-participating WUAs to view demonstrations, public awareness programs including publications and newspaper articles, and other studies that will be determined during the project implementation.

20. *Activity 2.1e: On-farm water management demonstrations.* Under WMIP on-farm water management demonstrations were commenced. The project will continue and expand these demonstrations for the WUAs selected for rehabilitation and for WUAs in the selected adjacent AA. Demonstrations are likely to include modern more efficient irrigation techniques like drip and sprinkler, possibly including also 1 or 2 pilot turn-key projects. If the WUAs in selected AA have received water management demonstration equipment under the WMIP, under APNIP these WUAs will receive only demonstrations. The project will also finance participation of members of WUAs of the selected adjacent AA in demonstrations carried out in command areas of rehabilitated WUAs.

Component 3 - Nutrition Improvements (total cost US\$ 4.6 million)

21. *Contribution to PDO.* This component will contribute to both improved productivity and food and nutrition security through nutrition education, provision of micronutrient supplements, and production diversity and yield growth of more nutritious crops on household plots. The targeted beneficiaries are the population of the 30 AA in which the WUA selected for I&D is located and additional 30 adjacent AA that will be selected for selected activities of Component 2 and 3 based on poverty, health and nutrition indicators monitored by MoH. In total around 425,000 people or 94,400 households, particularly the poor and vulnerable¹⁶, will benefit from the various nutrition improvement interventions.

22. There are three sub-components to be implemented in parallel: (i) a community level nutrition education program; (ii) dietary diversification through improved domestic gardening on household plots; and (iii) improved national coordination for food and nutrition security. These three interventions will address both short-term and medium- to long-term nutrition challenges.

¹⁶ Orphans will be a part of the targeted vulnerable groups to be supported by the project if present in the selected project areas.

In the target areas and nationally, these interventions will complement current efforts of the Government and development partners to address under-nutrition in the country.

Sub-component 3.1. Improved household nutrition through nutrition education

23. This sub-component includes community level education and the provision of micronutrient supplements.

24. *Community Level Nutrition Education Program.* Target population will include women (18-49 years), children (0-5 years) and adolescent girls (12-17 years) represent about 37 percent of the population of 60 AA. The total target population is approximately 425,000 people.

25. *Background.* All provincial and district centers in the Kyrgyz Republic have primary health care (PHC) clinics, namely Family Medical Centers (FMCs) which has several Family Group Practices (FGP) usually including a physician. FMCs are located at oblast and raion levels. Most of the 1,800 Ayil Aimaks (AA) have a PHC post, namely a Feldsher-Accoucher Point (FAP), usually with midwife or nurse but no physician. PHC providers (doctors, nurses and feldshers) are the main conduit through which mothers receive information and advice on nutrition. Village Health Centers (VHCs) are located in each AA and staffed by volunteers.

26. *Nutrition Education Program.* The education program, aimed at improving household nutrition will include: (i) early initiation and promotion of exclusive breastfeeding for the first 6 months of life, and breastfeeding until 2 years of age; (ii) timely and appropriate introduction of complementary feeding, with adequate micronutrient supplements; (iii) fortification of home food for children of 6-24 months of age with micronutrient supplements, sprinkles; (iv) nutrition for pregnant women and women in reproductive age (Folic Acid and Iron); (v) facilitating the provision of pregnant women with micronutrient supplements, taking into account their special needs; (vi) raising the awareness of pregnant mothers to pre-conception preparation for childbirth (including balanced nutrition, intake of micronutrient supplements, consumption of fortified food products, and treatment of anemia); (vii) the promotion of sanitary and hygiene practices (hand washing with soap practice and control over infectious and parasitic diseases); (viii) the promotion of dietary diversification, especially through home production on household plots; and (ix) communicating messages to encourage parents to enhance learning opportunities of young children.

27. The key activities to be financed by the project to deliver the nutrition education program include: (i) an information campaign on nutrition issues through health workers (at national, raion and district levels), VHCs and mass media (television, radio and print media) to reinforce the education program at AA level and reach a larger proportion of the population; (ii) collection of demographic data at AA medical centers to determine the target population and sample survey population; (iii) a knowledge, awareness and practice (KAP) baseline survey in each selected AA conducted by Public Health Department and National Centre for Maternal Child Health (MCH) in the MoH; (iv) development and printing of information, education and communication (IEC) materials to change individual behavior with respect to KAP in nutrition by the Public Health Department and National Centre for MCH in the MoH; (v) training health promotion unit staff of the MoH at raion level and VHC members to deliver the IEC materials and training. This will be done by the Health Promotion Centre (HPC) of the Family Medicine Center at the raion level guided by staff of the Republican HPC of the MoH; and (vii) monitor the implementation of the nutrition education program. This will include regular monitoring of the progress and the quality

and effectiveness of the training, and random ‘lot quality assurance sampling’ biannually by MoH staff; and an independent ‘end line’ survey to assess the overall impact.

Subcomponent 3.2: Provision of Micronutrient Supplements

28. Micronutrient supplements will be supplied to targeted women and children. Both folic acid and iron for pregnant women, women in reproductive age and adolescent girls and sprinkles for children 6-24 months will be provided. The targeted population includes 36,600 children under two years of age, 29,400 adolescent girls and 110,000 women.¹⁷

Sub-component 3.3. Improved household nutrition through domestic gardening

29. This sub-component will improve household nutrition and dietary consumption through a comprehensive approach to ensuring the availability of nutritious agricultural products at the household level year-round. The production and crop and livestock diversity on household plots of around 70 percent or about 50,400 households (out of 72,000 in the project area) will be targeted. The sub-component will be implemented in two phases. In the first phase, during the first two project years, around 24,000 of the most vulnerable households will be targeted, whereas in project years 3 to 6 the sub-component will be expanded to cover 50,400 households. This sub-component includes: (i) a baseline assessment of household plots; (ii) technical advisory services for household plots; and (iii) financing for basic equipment.

30. *Baseline assessment of household plots.* A service provider will be contracted to undertake the baseline assessment. This will include identification of the target households, PRA, and detailed technical assessment.

31. *Identification of target households.* The identification and targeting of vulnerable households, especially of female-headed households and families with young children will be done by the service provider in consultation with local representatives of the MoSD, Ayil Okmotu, and VHCs to ensure comprehensive coverage, transparency and efficiency.

32. *PRA.* The contracted service provider will undertake both PRA of household needs and options for household plot improvement and the detailed technical assessment. The PRA will: (i) identify the problems, issues and constraints on the household plots; (ii) identify options for household plot improvement and related training needs; and (iii) collect baseline data to facilitate effective M&E for the sub-component.

33. *Detailed technical assessment.* The PRA will be complemented with a detailed technical assessment of current agronomic and production practices, seed and crop status, and soil fertility, including soil testing on household plots. This assessment will verify the feasibility of options identified under the PRA and select 6 core areas for household plot production and diversification improvement in each AA. Specific attention will be given to the introduction of nutritious foods high in vitamin and micronutrient content, extension of the growing season by using simple plastic houses, soil fertility improvements through composting (including of animal manure) and fertilizer application, rearing of small livestock, and crop diversification.

¹⁷ Based on statistics of the National Statistics Committee the average population per Ayil Aimak is 7,925. On average, the proportion of children (0-2 years) is 7.7 percent, adolescent girls (12-17 years) is 6.2 percent and women (18-49 years) is 22.7 percent.

34. *Technical Advisory Services for Household Plots.* Advisory service providers, independent of the provider contracted for the PRA and technical assessment, will be contracted to develop household plot production guidelines and demonstration materials, establish 2 demonstration plots per AA, and provide technical advisory services for individual households. Training will be provided during the growing season, both at the demonstration plot as well as at the household plots of individual households. The training will be complemented with the provision of basic equipment.

35. *Self-Help Groups.* To facilitate the training and delivery of advisory services to households, the service provider will establish self-help groups (SHGs) comprising 5-7 members, 90% of which are expected to be women. The mobilization of SHGs will follow the procedures already operating under APAP which have proven to be appropriate and satisfactory.

36. The service provider will also establish links with the existing Community Seed Banks (CSBs) in order to improve the quality of seeds used in the household plots or establish additional CSBs where required following the procedures established under APAP.

37. Each growing season will be followed by an assessment of achievements and identification of lessons learned, which will be incorporated in revised demonstration and training packages for the next years growing season.

38. *Financing for Basic Equipment.* Financing for basic equipment will be provided. Equipment can be selected by each household from a list of possible tools and inputs.

39. *Phase 2.* In the second phase, after two full growing seasons of demonstration and training to the 24,000 most vulnerable households, the project will expand the target group to 72,000 households. Based on the experience gained during the first two growing seasons, additional demonstration plots will be established, and the training program will be modified to target the larger group of households. If funds are sufficient, this group will also be eligible to receive basic equipment to assist with improving household crop production.

Sub-component 3.4. Improved national coordination for food and nutrition security

40. This sub-component will finance support to the FSC to implement its mandate, which includes nutrition issues in addition to food security and social protection. The project finances the establishment of the secretariat of the FSC which will coordinate, monitor and provide oversight of the implementation of the national Food Security and Nutrition Program. Food security assessment is expected to be prepared on quarterly basis both at the national and regional levels. Measures and corrective action to address food security issues will be taken in the annual action plan following the comprehensive assessment at the end of each year. The secretariat will receive technical oversight and assistance from FAO, WFP, UNICEF and through the Bank's implementation support. Financing is for an initial period of two years and subsequently the Secretariat is to be integrated into the Government structure. The effectiveness and financing of the FSC will be evaluated after this 2-year period. The Government is expected to find budget resources to support the FSC after the two-year period. The project will finance local consultants and limited office expenditures.

Component 4. Project Management (total cost US\$1.9 million)

41. This component will finance project management staff, training, equipment and operational costs for the daily management, administration, coordination, procurement, FM and

M&E activities of the project, in line with World Bank and GAFSP requirements and procedures. The DWRLI has overall responsibility for project implementation. The PIU currently in place for the AF of the OIP-2 (closing December 31, 2016), will be responsible for the daily management, administration, and coordination of the project, including procurement and FM. To increase cost-effectiveness, use will be made of qualified existing staff within the PIU for the ongoing OIP-2 and AF, with the core team comprising a project manager, one engineer based in Bishkek, two regional engineers, an M&E team with two specialists, a financial manager, and a procurement specialist. The team will be expanded with coordinators for Components 2 and 3 and additional staff for M&E, procurement and FM.

Linkage with other World Bank Projects

42. The project is in line with a broader set of projects that aim to improve the sustainability of the MOM of investments in I&D infrastructure rehabilitation. Substantial investments in on-farm I&D infrastructure are financed under OIP-2, AF and this project.

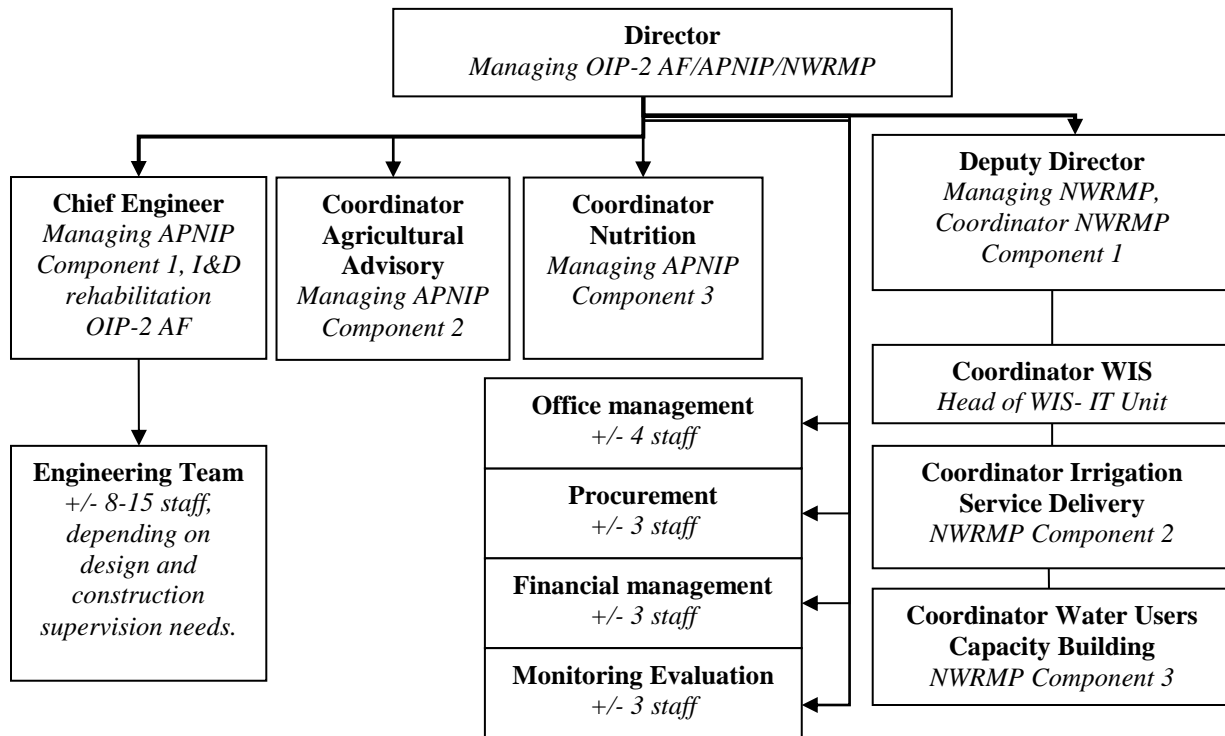
43. Technical assistance to improve MOM for both on- and off-farm I&D infrastructure is supported under NWRMP-1, financed by SDC, which covers the first phase (until 2017) of a comprehensive water sector capacity building project. The second phase of investments will be considered during the last year of the NWRMP-1. The NWRMP-1 has the following components: (i) strengthening national water management capacity, including the establishing of a Water Information System (WIS) and implementation of the Water Code; (ii) improving irrigation service delivery to WUAs; and (iii) improving WUA service delivery. Activities under (iii) will target the WUAs supported under this project to increase their capacity to manage the rehabilitated I&D systems.

Annex 3: Implementation Arrangements

Kyrgyz Republic: Agricultural Productivity and Nutrition Improvement Project

Project Institutional and Implementation Arrangements

1. The DWRLI under the MoALI will be the main implementing agency for the project. The PIU, established in the DWRLI for the OIP-1, OIP-2 and AF and working under the overall management of the DWRLI's General Director, will continue to be responsible for the daily management, administration, and coordination of the project, including procurement and FM. Under the project, the PIU will be strengthened with two staff to manage Components 2 and 3, respectively, and additional staff to strengthen the procurement, FM and M&E functions. The PIU will be responsible for this project, OIP-2, AF and NWRMP. An organizational chart of the PIU is provided below.



2. *Project administration mechanisms.* The PIU will be responsible for project administration, including: (i) updating the Project Implementation Manual (PIM) on a regular basis; (ii) ensuring that project activities are implemented according to the PIM; (iii) reporting on project progress to the government and World Bank; (iv) ensuring that procurement of works, goods, and services is done in a timely manner and in accordance with the World Bank guidelines; (v) managing project funds, maintaining accounts, getting the accounts audited, and ensuring adequate budget provisions for the project in the national budget; (vi) supervision of contractors and suppliers; and (vii) facilitating the work of consultants and reviewing consultant outputs and performance. The PIU will prepare a draft annual work plan and budget, by October 31 of each year, to be approved by the government and World Bank. For the project, the PIU will report to a Steering Committee, chaired by the DWRLI, with representatives from the MoF,

MoALI and MoH. The Committee was formerly established in November 2014. This Committee will provide oversight and coordination on integrating the three project components.

3. Overall, the PIU will be responsible for ensuring the effective integration of the three technical components and the coordination of the government agencies and development partners. At project commencement an integrated information session should be undertaken in each AA to explain the project and the necessary integration of the three components.

4. Management of Component 1 will be carried out by the PIU team working on OIP-2 AF. The well-functioning system for design and construction supervision established under the OIP-2 will be maintained: i.e. the PIU will be responsible for identification, design, procurement, construction supervision and contract management for civil works, while contracting out required specialized designs for more complicated structures to specialized institutes. Procurement of works, including bid announcement, evaluation, contract award and management would be carried out by the PIU in a centralized manner.

5. Component 2 will have a full time Component 2 (Agriculture) Coordinator based in the PIU who will be responsible for overall administration of the component. The procurement of services contracted for the implementation of the component will be carried out by the PIU in a centralized manner with the Coordinator responsible for monitoring and supervision. The PIU will be responsible for: (i) information sessions with WUAs to disseminate the component related information to ensure broader beneficiary participation and (ii) contracting one or more local consultants to train WUAs in the management of advisory services contracts and preparation of TORs. The advisory services providers will be required to submit quarterly, annual and final reports on their activities; (iii) providing small grant funds of up to US\$30,000 over two years for the preparation and implementation of the agricultural development plans for WUAs selected for rehabilitation works. Each small grant will be provided directly to the WUAs based on an agreement between the DWRLI and WUA and will be made in tranches based on achievement of the agreed milestones; (iv) reviewing TORs and contracts prepared by the WUAs for contracting advisory services to ensure compliance with project requirements; (v) contracting advisory service providers to carry out training on improved irrigated agricultural production and marketing for WUAs located in selected adjacent Ayil Aimak (AA), and (vi) contracting advisory service providers to carry out demonstrations of on-farm water management as done under WMIP. The Agriculture Coordinator will be responsible for: (i) ensuring effective coordination with other components; (ii) monitoring the performance of the WUAs and contracted advisory service providers; (iii) ensuring that the quarterly, annual and final reports of the advisory services experts are submitted in a timely way; (iv) coordinating the small grant agreements with the WUAs; (v) monitoring the achievement of the milestones and the quality of the work on a regular basis; and (vi) providing quarterly progress reports to the Director PIU. For this purpose, the Coordinator will travel extensively to the districts and AAs and proactively interact with the WUAs and advisory services experts. The PIU will prepare quarterly and annual reports on progress. Short-term international technical assistance will be provided to support the Coordinator.

6. Component 3 will have a full-time Component 3 (Nutrition) Coordinator based in the PIU, who will be responsible for supervising services for the implementation of the component and for overall monitoring of the performance of the service providers. The MoH will have oversight on the Component 3 through the project Steering Committee. The Nutrition Coordinator will also work with the existing health sector steering group consisting of MoH and

international agencies in the health sector. S/he will be responsible for (i) ensuring the TORs for advisory services provide the appropriate level of coverage and technical detail to ensure nutrition related technical advice and demonstrations provide appropriate levels of support; (ii) in close cooperation with the MoH, preparing selection criteria for the adjacent AA based on poverty, health and nutrition indicators; (iii) monitoring the performance of households and contracted advisory service providers in cooperation with the Agriculture Coordinator; (iv) ensuring that the quarterly, annual and final reports of the advisory services experts are submitted in a timely way; (v) monitoring the achievement of the milestones and the quality of the work on a regular basis; and (vi) providing quarterly progress reports to the Director PIU. Short-term international technical assistance will be provided to support the Nutrition Coordinator.

7. Sub-component 3.1 will be implemented by the PIU and under the guidance of the MOH and UNICEF, based on their extensive and existing experience of implementing community-based nutrition education programs using local NGOs and VHCs.

8. Sub-component 3.2 will be implemented and coordinated by the PIU. The TOR for the household diversification mechanisms will be prepared jointly with the Steering Committee to ensure that nutritional aspects are adequately taken into account in the agricultural extension.

9. Sub-component 3.3 will be administered and coordinated by the PIU. For the social mobilization and self-help group support activities, the PIU will contract one or more local service providers (NGOs) with experience in similar community development programs based on a competitive tender to implement the activities in the targeted areas. The contracted NGO(s) will be responsible for conducting the PRA; carrying out the vulnerability assessments; mobilizing self-help groups and establishing the Community Seed Banks; and monitoring and reporting. The contracted NGO(s) will provide a coordinator in each oblast and will select a volunteer animator in each AA to carry out the mobilization activities in addition to regular staff.

10. The participating AAs will be selected from within the AA served by the WUAs after discussion with the local authorities and based on poverty criteria, in zones favorable for vegetable production with access to irrigation, and without a similar project. The identification, targeting and selection of vulnerable households, especially of female-headed households and families with young children, will be done by the contracted NGO through a community-based vulnerability assessment process (a poverty pyramid) with participation from the local Ayil Okmotu and Village Health Committees (VHCs), who both maintain lists of the vulnerable households in their area. A Participatory Rapid Assessment (PRA) exercise will identify the problems, needs and interests of the households in each targeted AA, in order to identify the current situation and needs, and options for potential improvement. The PRA exercise will be complemented with a detailed technical assessment of current production practices, seed and crop status, and soil fertility, in order to verify the feasibility of options identified under the PRA and to select core areas for household plot production and diversification improvement. Specific attention will be given to the introduction of nutritious foods, especially vegetables, high in vitamin and micronutrient content; extension of the growing season by using simple plastic houses; soil fertility improvements through composting (including of animal manure) and fertilizer application; rearing of small livestock; and crop diversification.

11. Based on the vulnerability assessment and the PRA and technical assessments, self-help groups will be formed in each selected AA and provided with seeds of the identified vegetable

types. In addition to vulnerability, other selection criteria will include available labour, a land plot with irrigation, and interest in participating. Self-help groups will normally consist of 5-7 members based around a small neighborhood within AA, thus resulting in considerable cohesiveness and ability to meet and share information regularly. Each group would have an elected head and would keep records of meetings, seeds provided, quantity of vegetables sold and amounts repaid. The value of the seed would be returned after harvest and placed in a Community Seed Bank to be used for further purchase and distribution of seed and other items to other vulnerable households. In the second year, funds could be provided to interested self-help groups for equipment and supplies for plastic houses, vegetable preservation and other items on a 50% matching basis.

12. For the technical advisory services and demonstration activities, the PIU will contract one or more service provider(s) with strong experience in implementing agricultural training and demonstration activities. These contracted organizations will be responsible for organizing the demonstration and training program in AAs where self-help groups have been formed, the preparation of household plot production guidelines and extension materials and organizing soil tests where required.

13. Procurement of seed and equipment for the self-help groups will be the responsibility of the PIU, with types of seeds and equipment based on the results of the PRA and in discussion with the contracted NGOs. All seed will be tested by the Republican State Seed Inspectorate before distribution to the self-help groups.

14. The PIU will be responsible for monitoring the performance of the contracted service providers and for organizing a baseline survey and an independent impact evaluation to assess the nutritional and dietary changes in the targeted areas as well as to learn lessons from the program implementation. The PIU will be assisted by short-term international technical assistance to provide program support and to help design appropriate survey instruments.

15. Sub-component 3.4 will be implemented by the PIU in cooperation with the MOH and with technical oversight of the FAO, WFP, and UNICEF.

Financial Management, Disbursements and Procurement

16. *Country Issues:* Capacity among accounting professionals in the country is still low, professionally qualified accountants are scarce, and among public and private sector accountants' knowledge of internationally recognized accounting and auditing standards, such as International Financial Reporting Standards (IFRS), International Public Sector Accounting Standards (IPSAS), and International Standards on Audit (ISA) is very limited. Most PIUs use cash-basis accounting, which is allowed under IPSAS, and in many cases, is sufficient for accurate project accounting. Internal audit functions exist in a small but growing number of institutions, including line ministries, and external audit is practiced by individuals and a few audit firms. Typically, most audits required by international donors have been performed by the top four international audit firms.

17. Corruption is still acknowledged as a major issue in the public sector. In addition to the risk mitigation measures summarized in the table below, the Project will emphasize full disclosure, transparency, and strengthened complaint handling mechanisms for procurement activities. The country risk is assessed as substantial before and after mitigation measures.

18. Most Bank-financed projects in the country are implemented through stand-alone PIUs that often install parallel accounting systems to those used in the respective line ministries. The audits of Bank-financed projects in the country have been performed by private sector firms that meet the Bank's eligibility criteria. The World Bank regularly assesses local audit firm capacity to audit Bank-financed projects and three firms in the Kyrgyz Republic are now eligible. The World Bank provides support to strengthen the capacity of the supreme audit institution, the Chamber of Accounts, and it is anticipated that the Bank will eventually rely more on audits conducted by this institution once its capacity has been adequately developed.

19. *Implementing Entity:* The PIU will be responsible for implementation of the FM function, including the flow of funds, budgeting, accounting, reporting, and auditing. The FM assessment carried out to determine the FM implementation risk and the FM arrangements at the PIU, including accounting, reporting, planning, and budgeting, and staffing is considered to be satisfactory to the Bank. The inherent risk of the project is rated as Substantial, while the Control Risk and the Overall FM Risk are both considered to be Moderate.

20. *Strengths and Weaknesses:* There are no major weaknesses under the current OIP-2 (including AF). One weakness in regard to ineligible expenditures under WMIP that was implemented by the same implementing agency has been fully resolved. Another weakness is that the PIU does not have practical experience of managing small grants which should be issued under Component 2 of the project. The significant strengths that provide a basis for reliance on the project FM system include (i) FM arrangements similar to an existing project (OIP-2 and AF) being implemented by the PIU and found to be satisfactory; (ii) experienced FM staff; and (iii) proper internal controls and a good operational accounting system in place.

21. The following capacity building actions have been agreed to be implemented:

Actions for capacity building	Responsible	Completion date
Update the Financial Management Chapter of the Project Implementation Manual to reflect the project related internal control, budgeting, external auditing, financial reporting and accounting policies and procedures	PIU	<i>By effectiveness</i>
Introduce a special section in the Project Implementation Manual with a detailed description of procedures regarding selection, financing and monitoring of small grant projects	PIU	<i>By Effectiveness</i>
Modify the existing accounting software for accounting and financial reporting purposes of the proposed project. The accounting software will be specially designed to meet World-Bank-financed projects requirements including the ability to generate Interim Financial Reports, withdrawal applications, statements of expenditure, and annual financial statements	PIU	<i>30 days after effectiveness</i>

22. *Budgeting and Planning:* The PIU has, in general, acceptable budgeting and planning capacity under OIP-2. The annual budget of the project will be based on the final procurement plan that is to be discussed and agreed with the PIU Director, and approved by the World Bank.

All changes to the procurement plan will be reviewed by the PIU Director and approved by the World Bank. The Director, the financial manager, and the procurement specialists will be involved in the preparation of the annual budget. The budgets will be prepared according to the IFR format (disbursement categories, components and activities, account codes, and broken down by quarter).

23. *Accounting and Maintaining Accounting Records:* The PIU has solid prior experience maintaining the independent accounting system. For reporting purposes, cash basis IPSAS and the World Bank guidelines for borrowers will be used under the project. The FM Manual under the ongoing project (AF of OIP-2) properly reflects the accounting policies and procedures and will be used under the proposed project. All supporting documents will be maintained in files for ready access by auditors and Bank staff. The project's chart of accounts will track all transactions and report them according to the source of financing project components, and the type and category of expenditure. The PIU under the ongoing project uses 1-C accounting system specially designed to meet the World Bank-financed project requirements, including ability to generate IFRs, withdrawal applications, SOEs, and annual financial statements. In addition, regular backups of the accounting data are done by the accounting staff. For the purpose of the project, the PIU will modify existing accounting software that will be able to generate reports specifically tailored to project needs. The system shall have safeguards against the input of inaccurate data or unauthorized access to the system. Regular backup of the accounting data shall be made by the accounting staff. The PIU has well experienced FM staff, consisting of the Financial Manager who is responsible for overall FM arrangements of the project and has been working at the PIU since 2004. She will be in charge for the overall FM arrangements of the proposed project as well. An experienced disbursement specialist for the OIP-2 disbursement will also be in charge for disbursement issues under the proposed project. She joined as the Disbursement Specialist under OIP-1 in December 2005. With OIP-2 AF extended until December 2016 and the PIU in charge of implementing the NWRMP-1 and APNIP, an additional accountant/disbursement specialist will be recruited to mostly monitor fiduciary activities of small grant recipients' activities.

24. *Internal Controls:* The PIU's internal control system was assessed to be capable of providing timely information and reporting on the project. The FM Manual is well prepared and fully documents accounting and financial reporting policies and procedures. Under the ongoing AF of the OIP-2, the PIU conducts monthly formal reconciliation of the World Bank disbursement data with the project's accounting records via Client Connection. Formal reconciliation of the special and local accounts with the project records is done on a monthly basis, but informal reconciliation is done more frequently, usually upon receipt of bank statements from the commercial bank where projects accounts are held. The PIU has adequate internal control procedures in place over operational expenses. The FM Manual for the project will be updated to reflect the specific activities of the project, like Audit TOR, frequency of submission, format of IFRs, and so forth.

25. *Financial Reporting:* The PIU prepares quarterly interim unaudited financial reports (IFRs) formerly FMRs for ongoing projects. Those IFRs for currently implemented OIP-2 were received mostly on-time¹⁸ and found to be acceptable. Project-management-oriented unaudited

¹⁸ With exception of IFRs for the IV quarter of 2013 and I quarter of 2015, which were submitted late.

IFRs will be prepared under the project. The PIU will produce a full set of IFRs every calendar quarter throughout the life of the project. The format of IFRs has been agreed during the assessment and includes (i) project sources and uses of funds, (ii) uses of funds by project activities, (iii) designated account statements, and (iv) a SOE withdrawal schedule. IFRs will be produced by the accounting software. These financial reports will be submitted to the Bank within 45 days of the end of each calendar quarter. The annual audited project’s financial statements and audit report together with the management letter will be provided to the Bank within six months of the end of each fiscal year and also at the closing of the project.

26. *Small Grants to be issued by the PIU:* Since the PIU should issue small grants to WUAs the PIU is expected to prepare a special annex to the existing FM manual. The annex should describe in details WUA grant fiduciary management procedures including funds flow, reporting, internal controls, external auditing, monitoring by the PIU, whistleblowing, etc. That would serve as a small OM for WUAs regarding their obligations and procedures.

27. *External Audit:* The audit reports for the OIP-2 AF for the year ended December 31, 2014 as well as the final audit report for the recently closed WMIP implemented by the DWRLI, together with the accompanying project financial statements have been received on time. The auditor, “SOS Audit”, Armenia, has issued unmodified (clean) opinion on both projects’ financial statements (PFS). The proposed project audit will be conducted (i) by independent private auditors acceptable to the Bank, on TOR acceptable to the Bank, and selected by the PIU; and (ii) according to the ISA issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants (IFAC). The TOR will include (i) audits of financial statements, (ii) the need to conduct visits to WUAs as part of the filed work and provide account of control deficiencies found as part of the report, and (iii) a review of the internal control mechanisms. The following table identifies the required audit reports that will be submitted by the PIU together with the due date for submission.

Audit Report	Due date
The project financial statements include project balance sheet, sources and uses of funds, uses of funds by project activities, SOE withdrawal schedule, designated account statement, notes to the financial statements, and reconciliation statement	Within 6 months of the end of each fiscal year and also at the closing of the project

28. *Flow of Funds and Disbursement arrangements:* Grant funds will flow to the project via disbursements to one designated account (DA) maintained by the PIU. The project will follow transaction-based disbursement procedures (advances to the DA, documentation of the advances based on SOEs and supporting documents, direct payments, and special commitments). Withdrawals from the grant account will be requested according to requirements in the disbursement letter. The ceiling of the DA will be US\$ 2,000,000. Withdrawal applications will be signed by two persons: (i) an authorized representative of the borrower (MoF); and (ii) another designated official, such as the PIU Director, or other persons delegated in writing by the MoF.

29. Disbursements will be made on the basis of full documentation: (i) works contracts over \$1,000,000 each; (ii) goods and non-consultancy services contracts over \$200,000 each; (iii) consultants’ services contracts for consulting firms over US\$100,000 each, and for individual

consultants' contracts over US\$50,000 each.. Disbursements under these amounts, as well as for small grants, training and operating costs, will be made according to certified SOEs. Documents to support the SOE will be held by the PIU for at least one year after the IDA receives the audit report for the fiscal year in which the last withdrawal from the grant account was made. This information will be available for review during Bank staff supervision missions and for annual audits that assess the propriety of SOE disbursements and the quality of the records.

30. **Procurement.** Overall, the public procurement environment in the country is improving as the Public Procurement Department (PPD) under the Ministry of Finance has revised the Public Procurement Law (PPL) and the new PPL was signed by the President in April 2015. The draft PPL will create an independent complaint review commission and PPD will become a regulatory body for public procurement. The Bank is supporting the institutional development of PPD and the complaint review commission, as well as capacity building of all stakeholders. The Government is developing e-GP with the Bank TA and ADB financing.

31. Procurement for the proposed Project be carried out in accordance with Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers” dated January 2011 (revised July 2014) and “Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers” dated January 2011 (revised July 2014). The various items under different expenditure categories are described in general below.

32. The World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credit and Grants dated October 15, 2006 and revised on January 2011, will also apply. For each contract to be financed by the Bank, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the GoK and the Bank task team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

33. *Procurement of Works:* Works procured under this project would include (i) rehabilitation of existing on- and off-farm I&D systems; (ii) installation of intake structures at on-farm systems.

34. *Procurement of Goods:* Goods procured under this project would include procurement of maintenance equipment for WUAs and FWUAs, water measuring equipment for WUAs, minor food processing equipment for households, micronutrient supplements, and office equipment and vehicles for PIU. Micronutrients will be procured through UNICEF under the existing procurement agreement with the MoH.

35. *Selection of Consultants:* Consultancy would include (i) technical assistance in such areas as detailed design, contract administration, construction and supervision; (ii) technical assistance to rehabilitated WUAs in contract management and preparation of TORs, (iii) technical advisory services on improved agricultural production and improved marketing; (iv) technical advisory services for improved cropping patterns towards higher shares of nutritional crops; (v) technical advisory services on improved on-farm water management; (vi) M&E; (vi) international and local technical assistance for preparation of improved irrigated agricultural production and marketing and diversification towards nutritional crops; and (vii) local consultants to support FSC for improved national coordination for food and nutrition security.

36. Short-lists of consultants for services estimated to cost less than U\$100,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. The Bank's Standard Request for Proposal Document would be used as a base for all procurement of consultancy services to be procured under the project. Some of the PIU staff hired under previous projects would continue working for implementation of the project.

37. *Training:* Training will cover training to (i) WUAs selected for components 1 and 2 on improved irrigated agricultural production, improved marketing and diversification towards nutritional crops, improved water management and IPM, (ii) raion level health promotion unit staff of MoH under component 3 on health promotion related activities, (iii) vulnerable households and self-help groups under components 3.1 and 3.3 on improved consumption of nutritional food and increased production of nutritional food on household plots, and (iv) PIU and relevant government staff on procurement, financial management, M&E, IPM and other project management related activities.

38. *Operating Costs:* The grant will finance incremental operating costs. Operating costs will cover vehicle maintenance for PIU and WUA SUs, fuel, utility and communication costs, translation costs, travel expenses, bank charges, social charges, office supplies, advertisement costs, printing, mail, as well as other reasonable expenditures directly associated with the implementation of the project. Such costs would be financed by the project as per an annual budget approved by the Bank and incurred using the implementing agency's administrative procedures. Operating costs will not include salaries of civil servants. It will also finance the operating costs of the Food Security Council (FSC) for the period of two years.

39. **Project will also finance grants to WUAs** for: (i) contracting advisory service providers to assist WUAs in the preparation of agricultural development plans, provision of advice and facilitation of development plan implementation; and (ii) procurement of inputs, materials, cultivation equipment, soil and water testing equipment or other equipment, and minor improvements in farm infrastructure required for the training and demonstration aspects of the agricultural development plan.

40. **Delegation of the Procurement Function to WUAs.** The execution of procurement for grants will be delegated to WUAs. Procurement responsibilities, procedures and sample documentation are described in detail in the Project Implementation Manual (PIM) and in the WUA Procurement Handbook. . The micro-projects will include the procurement of goods, works, consultant services and training. WUA will manage micro-project implementation. These procedures will be harmonized with public procurement procedures to ensure sustainable capacity building. They require local advertisement and public bid opening, using the sample bidding documents and standard contract forms developed for community procurement for micro-projects (and included in the IM and the WUA Procurement Handbook).

41. Each WUA will allocate a part of its public information board for posting information on contract awards, including the name of each vendor who submitted a quotation, prices as read out at public opening, name and evaluated prices of each quotation that was evaluated, name of vendors who were rejected and the reasons for rejection, the name of the winning vendor and the price it offered, as well as duration and summary of the scope of the contract award. All contracts awarded through direct contracting (irrespective of the amount) shall be listed on the information board.

42. Assessment of the agencies' capacity to implement procurement. The implementation responsibility of the project will lie with the DWRLI through the PIU. The main activities to be procured under the project include civil works for rehabilitation of on-farm irrigation systems for 30 WUAs and FWUAs, technical equipment for WUAs, goods like seeds, agricultural tools, consultant services for design and technical supervision, agricultural advisory and nutrition services, project audit, and training and salaries of PIU staff. Individual consultants for design and technical supervision and asset management can be hired based on single source selection if they have worked for the OIP-2 and AF in the same capacity and their performance was rated satisfactory. The PIU staff hired under the OIP-2 and AF will continue working for implementation of the project activities if their performance was rated satisfactory.

43. A procurement plan has been developed covering the above procurement activities and will be agreed during negotiations. Thereafter, the plan will be updated periodically, at least once per year, and each update will be subject to the Bank's prior review. The initial procurement plan plus the subsequent updates will be published on the Bank's external web site in line with the requirements of Bank Guidelines.

44. *Procurement Supervision and Ex-post Review:* Routine procurement reviews and supervision will be provided by the procurement analyst based in the country office. In addition, two supervision missions are expected to take place per year during which ex-post reviews will be conducted for the contracts that are not subject to Bank prior review on a sample basis (20 percent in terms of number of contracts). One ex-post review report will be prepared per fiscal year, including findings of physical inspections for not less than 10 percent of the contracts awarded during the review period.

45. *Procurement Thresholds and Methods of Procurement:* The following methods of procurement shall be used for procurement under the project. It has been agreed that if a particular invitation for a bid is comprised of several packages, lots or slices, and invited in the same invitation for bid, then the aggregate value of the whole package determines the applicable threshold amount for procurement and also for the review by the Bank. The national competitive bidding (NCB) conditions will be part of the Grant Agreement.

Expenditure Category	Contract Value (USD)	Procurement Method	Bank Prior Review
Civil Works	>= 5, 000 000	ICB	All ICB contracts
	< 5, 000,000	NCB	First contract
	<50 000	Shopping	First contract
	NA	DC	All
Goods	>= 1, 000 000	ICB	All ICB contracts
	>= 1, 000 000 (Micronutrients)	Procurement through UNICEF	First contract
	<1, 000 000	NCB	First contract
	<100 000	Shopping	First contract
	NA	DC	All DC contracts

Consultant Services	NA	QCBS, QBS, FBS, LCS and CQS*	All contracts above USD 300,000 for firms regardless of value; all contracts above USD 200,000 for individuals; all SSS above USD 5,000.
	NA	SSS	
	NA	IC	
Notes: ICB – International Competitive Bidding NCB – National Competitive Bidding DC – Direct Contracting QCBS – Quality and Cost Based Selection QBS – Quality Based Selection FBS – Fixed Budget Selection LCS – Least Cost Selection *CQS – Selection Based on Consultants’ Qualification below \$300,000 depending on the nature of assignment SSS – Single (or Sole) Source Selection IC – Individual Consultant selection procedure NA – Not Applicable			

46. The prior review thresholds will be periodically reviewed and revised as needed during the project implementation period based on implementation of risk mitigation measures, reports from procurement post-reviews, and improved capacity of the implementing agency.

47. *Procurement plan.* For each contract to be financed by the Bank, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Government and the Bank project team in the Procurement Plan. A procurement plan has been developed covering the above procurement activities and will be agreed during negotiations. Thereafter, the plan will be updated periodically, at least once per year, and each update will be subject to the Bank’s prior review. The initial procurement plan plus the subsequent updates will be published on the Bank’s external web site in line with the requirements of Bank Guidelines.

PROCUREMENT PLAN (October 6, 2015)

No	Package Number	Description	Individual/ Firm	Procurement Method	WB Review (Prior/Post)
WORKS					
1	APNIP/C.1/CW/NCB/02-35	Rehabilitation of on-farm irrigation net in 60 000 ha (or in 30 WUAs)		NCB/HKT	1st prior /Post
2	APNIP/C.1/CW/NCB/02-35	Rehabilitation of 6 off-farm pilot systems and construction of Shakaftar settling basin		NCB/HKT	Prior/
GOODS					
1	APNIP/C.1/G/S/01	Vehicles for design engineer (3 unit)		Shopping	Prior
2	APNIP/C.1,C.4/G/S/02	Office equipment for PIU and design engineers		Shopping	Post
3	APNIP/C.1/G/NCB/01	Equipment for improved on-farm water management (demonstration plots)		NCB/HKT	Prior
4	APNIP/C.1/G/ICB/01	Maintenance equipment for WUAs and F-WUAs		ICB/MKT	Prior

No	Package Number	Description	Individual/ Firm	Procurement Method	WB Review (Prior/ Post)
5	APNIP/C.3/G/NCB/02	Micronutrient for children under 2 years old and supplements for women, adolescent girls		UNICEF, DC	Prior
6	n/a	Publications and printing of training materials re: nutrition education and household production guidelines		QCBS/OKC	Prior
7	APNIP/C.3/G/NCB/03	Equipment for demonstration plots on dietary diversification at the household level		NCB/HKT	Post
8	APNIP/C.3/G/NCB/03	Seeds for demonstration plots on dietary diversification at the household level		Shopping	Post/ Post
9	n/a	Safeguard studies/Laboratory (pesticides, heavy metals tests to evaluate project impact)		Shopping	Post/ Post
CONSULTING SERVICES					
1	APNIP/C.1/CS/Indiv./SS or IC/ 01-14	Design engineers for seven oblasts	Indiv.	SSS/Indiv.2	Prior/ Post
2	APNIP/C.1/CS/Indiv./SS or IC/ 15-51	Construction supervision engineers	Indiv.	SSS/Indiv.2	Prior/ Post
3	APNIP/C.1/CS/F/CQS/01	Hydrology, Geology and Environmental Surveys	Firm	CQS	Post
4	APNIP/C.1/CS/Indiv./SS/52	Design documentation.	Firm	CQS	Prior
5	APNIP/C.2/CS/F/QCBS/1	Advisory services including training on improved on-farm water management (assets management, on-farm MOM) and inventory	Firm	QCBS	Prior
6	APNIP/C.2//F/QCBS/2	Development of training materials re: nutrition education and household production guidelines	Firm	QCBS	Prior/
7	APNIP/C.3/CS/Indiv./	Local consultants (Technical assistance) on improved irrigated agriculture productivity (2 consultants)	Indiv.	IC	Post
8	APNIP/C.3/CS/Indiv./	International consultants (Technical assistance) on improved irrigated agriculture productivity	Indiv.	IC	Prior
9	APNIP/C.4/CS/F/CQS/12	KAP surveys	Firm	CQS	Post
10	APNIP/C.4/CS/F/QCBS/14	Survey (Baseline, Mid term, Impact)	Firm	QCBS	Prior
11	APNIP/C.3/CS/Indiv./IC/69	Agricultural practices assessment and PRA	Indiv.	IC	Post
12	APNIP/C.3/CS/Indiv./IC/54	International Dietary Diversification Specialist	Indiv.	IC	Prior
13	APNIP/C.3/CS/Indiv./SS/55	Project Director	Indiv.	SSS	Prior

No	Package Number	Description	Individual/ Firm	Procurement Method	WB Review (Prior/ Post)
14	APNIP/C.3/CS/Indiv./SS/56	Chief Engineer	Indiv.	SSS	Prior
15	APNIP/C.3/CS/Indiv./IC/57	Coordinator for Nutrition Component	Indiv.	IC	Prior
16	APNIP/C.3/CS/Indiv./IC/58	Coordinator for Agricultural Advisory Services	Indiv.	IC	Prior
17	APNIP/C.3/CS/Indiv./SS/59	Regional Engineer for South	Indiv.	SSS	Prior
18	APNIP/C.3/CS/Indiv./SS/60	Regional Engineer for North	Indiv.	SSS	Prior
19	APNIP/C.3/CS/Indiv./SS/61	M&E Coordinator	Indiv.	SSS	Prior
20	APNIP/C.3/CS/Indiv./IC/62	M&E specialist	Indiv.	IC	Post
21	APNIP/C.3/CS/Indiv./SS/63	Procurement Coordinator	Indiv.	SSS	Prior
22	APNIP/C.3/CS/Indiv./SS/64	Procurement Specialist	Indiv.	SSS	Prior
23	APNIP/C.3/CS/Indiv./SS/65	Financial Manager	Indiv.	SSS	Prior
24	APNIP/C.3/CS/Indiv./SS/66	Disbursement specialists (2 persons)	Indiv.	SSS	Prior
25	APNIP/C.3/CS/Indiv./SS/67	Lawyer/Contract management specialist	Indiv.	SSS	Prior
26	APNIP/C.3/CS/Indiv./SS/68	IT specialist/translator	Indiv.	SSS	Prior
27	APNIP/C.3/CS/Indiv./SS/69	Staff of Food Security and Nutrition Secretariat	Indiv.	SSS	Prior
28	APNIP/CS/LCS/C.4/01	Project Audit	Firm	LCS	Prior
TRAINING					
1	n/a	Training of WUAs in advisory and extension services contracts management	n/a	n/a	n/a
2	n/a	Participation of WUAs in demonstrations of the rehabilitated WUAs (for other eligible (non-rehabilitated) WUAs from adjacent AA	n/a	n/a	n/a
3	n/a	Training on agricultural productivity and marketing (for WUAs in AA that will be selected for Component 3.1 activities)	n/a	n/a	n/a
4	APNIP/TR/QCBS/C.3/01	Conducting trainings for Health care workers	firm	QCBS	Prior
5	APNIP/TR/QCBS/C.3/02	Training of PHC and VHC members	firm	QCBS	Prior
6	n/a	Information Campaign on nutrition education program	n/a	n/a	n/a
7	APNIP/TR/QCBS/C.3/03	Demonstration Plots on Dietary diversification at the household level	firm	QCBS	Prior

No	Package Number	Description	Individual/ Firm	Procurement Method	WB Review (Prior/ Post)
8	n/a	In-country study tour for WUAs and best practices	n/a	n/a	n/a
9	n/a	International study tours	n/a	n/a	n/a

Environmental and Social (including safeguards)

48. The PIU has proven its technical and managerial capacity, based on experience with OIP-1, OIP-2 and AF, to effectively address any safeguard policy issues raised by the proposed project and to implement any preventive actions/mitigation measures that may be recommended by the project's EMP. As it did under OIP-1, OIP-2 and AF, the PIU has employed a national environmental specialist on a part-time basis to supervise, assess and review project impacts during and after construction activities, perform environmental monitoring of soil conditions and water quality, and provide capacity building in environmental monitoring and management.

49. The project will not involve construction of new irrigation systems. Any potential adverse environmental impacts are not expected to be significant and can be effectively prevented or minimized by application of appropriate preventive actions and/or mitigation measures. These measures are identified in the EMP, of which a draft has been prepared, based on the EMP of the OIP-2 AF.

50. Before any rehabilitation activities can take place at an irrigation system to which these guidelines apply, the PIU will contract a qualified national design firm to make an engineering and safety assessment of the irrigation dam or storage reservoir in question, and prepare designs for the recommended measures. The consultants who will carry out the safety assessment will also look into the potential consequences of dam failure, including such principal criteria as the number of people at risk, and economic assets downstream that should be used to prioritize any intervention aimed at improving dam safety. The design engineers will also be retained to provide construction supervision of the rehabilitation works.

51. The PIU will contract a qualified engineering contractor, one that has experience with small earthen dams and/or small storage reservoir systems, to perform the remedial measures recommended in the engineering and safety assessment. The PIU, through the engineering team, will oversee the implementation of any remedial measures performed at irrigation dams or storage reservoirs under the project. This procedure has worked satisfactorily under OIP-1.

Monitoring & Evaluation

52. The M&E program will primarily focus on monitoring of the project's PDO and intermediate results indicators as presented in the Results Framework (see Annex 1). The PIU M&E Coordinator will take responsibility for the project's M&E program and supplemented with additional staff as required.

53. The implementation of the M&E program will follow the guidelines set out in the GAFSP's M&E Plan and World Bank guidelines. The program will therefore include the collection of baseline data (for all project indicators) before the project effectiveness, as well as

the geo-referencing of all project activities (at oblast and raion levels) undertaken during project implementation.

54. Most of the M&E activities will be similar to those undertaken under OIP-2 and AF, and the M&E team will be responsible for the collection and processing the monitoring information (e.g. internal project documents and records) provided by the PIU's management staff on the performance and progress of each project component. This will be supplemented by secondary data (e.g. annual WUA reports and survey data) collected from WUA SU staff and DWRLI technical staff at head office, oblast and raion levels. Information will also be gathered from the service providers responsible for providing training and advisory services to beneficiary households with respect to crop production and household nutrition under Components 2 and 3. In addition, primary data will be gathered directly from farm households, WUAs, FWUAs, and VHCs during field surveys and participatory workshops. This information will then provide the basis for the monitoring of the project's PDO and intermediate results indicators.

55. Under Components 2 and 3, the M&E system will capture data on physical and financial progress, the performance of the WUAs, VHCs and NGOs providing services, and the achievement of outputs, outcomes and impacts. Provision will be made to properly document the impacts of new practices implemented under these components in order to draw lessons from such practices.

56. The PIU, M&E team and the coordinators for Components 2 and 3 will have primary responsibility for monitoring progress (activities and outputs) and outcomes based on indicators defined in the results framework (Annex 1). In addition to regular monitoring as described above, the PIU will contract local specialists to carry out an impact evaluation of selected AA at least one year after the completion of project activities in the AA.

57. The M&E team will be responsible for the development of data collection tools (e.g. data sheets, survey questionnaires) required for all M&E activities including project performance monitoring, WUA monitoring, household surveys, and impact evaluation studies. The M&E team will also work closely with the PIU Project Director and PIU Coordinators (responsible for each of the project components), as well as the Central WUA SU, to ensure that accurate and reliable monitoring data is obtained in a timely manner. At the end of the project period, external M&E consultants will be recruited to conduct an independent evaluation of the project's impact which will incorporate the results of the impact evaluation of selected AA.

58. At present, there is adequate capacity for conducting regular M&E activities under OIP-2 and AF and this will be transferred to the project to ensure continuity. Satisfactory standards of project monitoring and reporting are being achieved, and it is anticipated that these standards will be maintained under the project. However, the capacity of the M&E unit will need to be strengthened to assist with the monitoring of nutritional improvements (Component 3) and the impact evaluations.

59. Impact evaluation will focus on assessing the outcomes and impact of the coordinated activities across all three components. The number of AA covered will depend on the timing of completion of all activities and the availability of resources for conducting the impact evaluations. The Impact evaluations should be conducted two years after the completion of physical activities and before the last year of project implementation. This will ensure that results are available for the mid-term review and end of project evaluations.

Annex 4: Implementation Support Plan

Kyrgyz Republic: Agricultural Productivity and Nutrition Improvement Project

Strategy and Approach for Implementation Support

1. The strategy and approach for the Implementation Support Plan is built on the following key aspects:

- Implementation support to APNIP is financed through the GAFSP, with a dedicated budget for preparation, implementation support and completion. This budget will finance implementation support for both APNIP as well as part of the implementation support of the NWRMP, as the NWRMP provides funds for the technical assistance required for the sustainability of investments under APNIP. Implementation support is also coordinated with support provided to the OIP-2 AF, which closes in December 2016.
- Implementation support for the NWRMP, financed under the APNIP Bank budget, includes the standard costs and overheads for the task team leader and the Bank's fiduciary and safeguards team until the APNIP project closing, and the costs for implementation support to the NWRMP technical assistance to the capacity building of WUAs until June 2017. The NWRMP budget will finance the task team leader to be based in-country, providing more hands-on support and reducing the variable costs charged to the APNIP Bank budget.
- Component 1 is building on existing procedures for selection, design and construction supervision and for the purchase and distribution of equipment. This Component will require basic engineering supervision and slight improvements to procedures to accommodate improvements identified during implementation. Until December 2016, the implementation support of this component will be financed by the OIP-2 AF.
- Close support will be required to monitor and provide guidance to the repayments by WUAs of part of the rehabilitation costs and the equipment. These repayment procedures are currently not functioning properly and need constant dialogue and monitoring of WUAs and the status of repayment. This implementation support is provided through the OIP-2 AF until December 2016.
- Component 2 will require implementation support from an agronomist/agricultural expert, mostly in helping the PIU draft adequate TORs for the advisory services, and in the selection and supervision of the advisory service providers.
- Component 3 will require implementation support for the coordination with the health SWAP and with UNICEF and the MoH and from a nutrition/agriculture expert. This implementation support will be done by the World Bank health sector team who is also working on the broader health portfolio and health SWAP in the Kyrgyz Republic. The nutrition/agriculture expert will help specifically with sub-component 3.2 on seeing the integration of nutrition and agriculture on the household plots.
- The task team will work closely with the Steering Committee to monitor coordination by the various government agencies and the synergy of the three components.
- The PIU has sound experience in fiduciary aspects, and fiduciary arrangements have not been significantly altered for this project. Since the Dam Safety and Resettlement Safeguard Operational Plans (OPs) are triggered, Bank supervision in the first years will ensure adequate compliance with these OPs. The Bank's task team will also monitor adequate implementation of the IPM training program.

- The PIU has adequate capacity for procurement, and adequate thresholds for post- and prior-review have been established. All TOR are subject to prior review.
- The Bank's task team will focus on strengthening the M&E capacity, providing assistance to the PIU M&E team, and ensuring adequate M&E procedures are implemented. Survey methodologies and questionnaires are subject to the task team's review.

Implementation Support Plan

2. The Implementation Support Plan consists of the following elements:

- The Bank's implementation support team will include a Task Team Leader, technical experts and fiduciary and safeguards staff. The Bank budget is provided through the GAFSP. Until December 2016, implementation support to Component 1 and the linked WUA and water resources capacity building program under the NWRMP is financed from the OIP-2 AF Bank budget. From January 2017-December 2021, GAFSP will finance implementation support to both the APNIP as well as the linked NWRMP.
- *Technical support for Component 1 and NWRMP:* The Bank's task team will include a WUA specialist, an institutional specialist and a civil engineer to provide close supervision of WUA aspects and the rehabilitation program, especially in the first two years of the project, for all activities conducted under Component 1 and the capacity building activities under the linked NWRMP. These specialists will review the water resources and WUA capacity building program, ensure that TORs and qualifications of international and national consultants are in line with the demands of the capacity building program, and provide technical advice on the implementation of activities. This input will be required for around two missions a year.
- *Technical support for Component 2.* The Bank supervision team for Component 2 will include an agricultural development specialist with experience of the advisory services and small grants programs to supervise: (i) the advisory service needs assessment and training of WUA in preparation of TOR for advisory services; (ii) the PRA and preparation of agricultural development plans; (iii) the delivery of advisory services and implementation of agricultural development plans; and (iv) the inclusion of women and vulnerable groups in agricultural development plans and advisory services.
- *Technical support for Component 3.* The senior health specialist and task team leader for the Health SWAP will be part of the implementation support team for this component. This will ensure sound technical advice and enable coordination with other interventions supported by a SWAP. The sub-component on household plot production and diversification will also be supervised by a nutrition/agriculture specialist.
- *Financial Management Support:* As part of its project implementation support mission, the World Bank's FM Specialist (FMS) would conduct risk-based financial management supervision within six months of project effectiveness and then at appropriate intervals. During project implementation, the Bank would supervise the project's financial management arrangements in the following ways: (i) review the project's quarterly IFR, annual audited financial statements, and the auditor's Management Letters and remedial actions recommended; and (ii) during the Bank's on-site supervision missions, review the following key areas: (a) project accounting and internal control systems; (b) budgeting and financial planning arrangements; (c) disbursement management and financial flows,

including counterpart funds, as applicable; and (d) any incidences of corrupt practices involving project resources. As required, a Bank-accredited FMS would assist in the implementation support process. More frequent implementation support missions may take place during the first part of the project. The FMS would consider joint fiduciary missions with procurement colleagues.

- *Procurement supervision:* A Bank procurement specialist will be a member of the implementation support team throughout the project cycle. During project implementation, the designated procurement specialist will join the regular Bank supervision missions. The frequency of procurement supervision should be two times a year, but a concrete decision will be made based on project needs. In addition to the prior review supervision to be carried out by the Bank task team, the capacity assessment of the implementing agency recommends post reviews to be carried out on at least 20 percent of the contracts. As a minimum, one post review report, which will include physical inspection of sample contracts including those subject to prior review, will be prepared each year. Not less than 20 percent of the contracts will be physically inspected.
- *Environmental Safeguards supervision.* A Bank environmental specialist will be a member of the Bank task team throughout the project cycle. Besides supervision of compliance with environmental safeguards, the specialist will provide assistance and support in the first years of the project on the delivery of the IPM program and on the habitat/biodiversity elements of the EMP.
- *Social Safeguards and sustainability supervision:* The Bank’s task team will include a social development specialist, with the main input during the period of design and construction of civil works. The primary support of the social development specialist will be to assist the PIU with adequate assessment of social impact of the project (as spelled out in RFP, RAP and the project operational manual) and implementation of measures to help mitigate the negative social impacts, while enhancing positive ones (including women’s inclusion in project activities, citizen engagement, conflict mitigation).

3. Table 2 presents the main focus of the implementation support over the life of the project:

Table 2 Implementation Support

Time	Focus	Skills Needed	Resource Estimate	Partner Role
0-12 months	<ul style="list-style-type: none"> - Institutional Capacity Building for water resources and WUAs – TORs, training program, baseline surveys. - Designs of on-farm works - RAP compliance - Procurement prior reviews. - IPM training - M&E Baseline 	<ul style="list-style-type: none"> WUAs and institutional specialist Civil engineer Social development Procurement Environmental safeguards M&E specialist 	US\$135,000 per year	<ul style="list-style-type: none"> Bank budget for OIP-2 AF finances engineering and WUA supervision support until December 2016. Bank budget for NWRMP will finance variable costs for the task

				team leader until December 2017.
12-72 months	<ul style="list-style-type: none"> - Review water resources and WUA institutional capacity building. - Review of designs, construction and construction supervision. - Policy dialogue with government. - RAP compliance - End-of-project M&E 	<ul style="list-style-type: none"> WUAs and institutional specialist Civil engineer Social development Procurement Environmental safeguards M&E specialist 	US\$110,000 per year	<ul style="list-style-type: none"> Bank budget for OIP-2 AF finances engineering and WUA supervision support until December 2016. Bank budget for NWRMP will finance variable costs for the task team leader until December 2017.
68-72 months	Implementation Completion and Results Reporting	ICR consultant	US\$ 50,000	

4. Table 3 presents the main focus of the implementation support over the life of the project:

Table 3 Skills needed

Skills Needed	Number of Staff Weeks	Number of Trips
Task team leader	40	8
WUA Specialist	10	4
Institutional Specialist	10	4
Agricultural Specialist	20	6
Nutrition Specialist	20	6
Civil Engineer	10	6
M&E Specialist	8	3
Procurement Specialist	20	0
FM Specialist	15	0
Environmental Specialist	15	0
Social Development Specialist	8	2

5. Table 4 presents the role of the main partners in implementation support:

Table 4 Role partners

Name	Institution/Country	Role
Global Agriculture and Food Security Program		Financing of project and World Bank implementation support budget.
Swiss Agency for Development and Cooperation	Switzerland	Financing of NWRMP and variable costs for the task team leader of APNIP and NWRMP.

Annex 5: Economic and Financial Analysis

Kyrgyz Republic: Agricultural Productivity and Nutrition Improvement Project

Introduction

1. The project aims at increasing agricultural productivity and improving food and nutrition security of rural households in selected project areas. Improved agricultural productivity will be achieved through (i) rehabilitation and modernization of irrigation and drainage (I&D) systems serving around 60,000 ha of agricultural lands and (ii) provision of agricultural advisory services on improved agricultural and water management practices and marketing for farmers whose I&D systems will be selected for rehabilitation as well as for farmers from the adjacent AA. At the household level, improved food and nutrition security will be achieved through (i) improved availability (and consumption) of nutritious food through increased production of such food both in agricultural lands as well as household gardens; (ii) improved access to nutritious food by raising farm households' incomes through increased agricultural productivity and profitability; (iii) provision of micronutrient supplements and vitamins for pregnant women, women of reproductive age and children under five and sprinkles for children of 6-24 months; and (iv) improved food utilization by promoting improved practices of food preparation, balanced diets and sanitary practices among all project beneficiaries. At the national level, the project will also support the Food Security Committee for improved national coordination for food and nutrition security.

Methodology

2. The economic and financial analysis examine the viability of the project through quantification of agricultural and nutrition benefits. Agricultural benefits are expected from multiple sources including: (i) improved productivity of irrigated crops due to improved water supply and adoption of better farm practices and (ii) improved agricultural profitability through crop diversification towards increased production of cash and nutrient rich crops and better marketing practices. To estimate these benefits, the analysis used two farm models representing Southern and Northern oblasts where different agro-climatic conditions and farm practices are in place. Nutrition benefits are expected to include prevented (iii) workforce losses resulting from nutrition-related mortality and (iv) undernutrition-caused productivity losses among children under five.

3. The analysis used field level agricultural data such as crop production cost, cropping pattern, cropping intensity, and existing farm management practices, which were collected by the Government in 2014 to prepare the Management, Operation and Maintenance study.¹⁹ In addition to this, agricultural data collected by WUAs on annual basis, statistical data of the MOALI and data collected by impact assessment surveys for OIPs and WMIP (hereafter referred as 'impact survey')²⁰ were used. The analysis also used data of Ministry of Health and UNICEF

¹⁹ DWRLI, Management, Operation and Maintenance, 2014

²⁰ Impact Assessment Report for On-Farm Irrigation Project 1, OIP-2 and WMIP, Institute of Development Assessment, Bishkek 2013

on child nutrition, child mortality, stunting, wasting, low birth weight (LBW), anemia, vitamin A and iodine deficiencies among children under five.

4. Incremental agricultural benefits are estimated by comparison of the without project (WoP) and the with-project (WiP) gross margins per hectare of a representative selection of typical irrigated crops for the project area. Incremental nutrition benefits are calculated as values of (i) prevented workforce losses to deaths resulting from undernutrition and (ii) avoided productivity and income losses resulting from stunting and iodine deficiencies in children under five. The overall project impact is calculated by aggregating agricultural and nutrition benefits. The project benefits are assessed for a period of 25 years, a period which corresponds to a potential technical life of the rehabilitated irrigation schemes if adequately operated and maintained, at 2014 financial prices and using opportunity cost of capital at 10 percent for the agricultural benefits and 5 percent for nutrition benefits. No residual value is assumed for irrigation infrastructure at the end of project period.

5. Financial prices of locally traded outputs and inputs are converted into economic prices by deducting direct subsidies, taxes, and shadow exchange rate factor. Economic prices for imported agricultural inputs and outputs are calculated at their border parity prices. Financial cost of unskilled labor is converted into economic one using a shadow wage rate conversion factor of 0.60. The official exchange rate used in the analysis is KGS 69.0 to US\$ 1.0.

6. Sensitivity analysis is conducted to test robustness of economic returns of the project investments for four sensitivity variables: a 20 percent increase in the project cost, a 20 percent decline in the projected benefits, a two year benefit delay and a risk of simultaneous a 20 percent decline in the projected benefits and a 20 percent increase in the project cost.

Key Assumptions

7. The project investments are expected to benefit: (i) around 60,000 ha operated by around 36,000 farm families in 30 AA where improved and reliable delivery of irrigation water and use of improved farm practices and technology would result in irrigated crop productivity increases; (ii) approximately 84,000 ha (inclusive of 60,000 ha mentioned under (i)) operated by 50,600 farm families where diversification towards higher value crops and increased marketed share of crops would lead to improved agricultural profits; and (iii) 475,500 people living 60 AA, including children, pregnant women, women of reproductive age and vulnerable families, who would benefit from improved consumption of nutritious food, micronutrients, vitamins, and fortified wheat.

8. **Agricultural benefits.** The analysis estimates benefits from improved irrigated crop productivity and expansion and diversification. As demonstrated in Table 1, current crop yields are very low, especially in the North. Average wheat yields, for instance, are only 2,375 kg/ha in the North and 2,700 kg/ha in the South. Similarly maize and lucerne yields in the North are only 3,000 kg/ha and 8,000 kg/ha, respectively. These productivity levels, as the impact surveys suggest, could increase significantly. In the 60 WUAs, which were covered by the study, improved irrigation water supply resulted in productivity increases at 47 percent for oil crops, 37 percent for fruits, 12 percent for potatoes and 13 percent for vegetables. The lowest productivity increases were recorded for beans at 4 percent and winter wheat at 10 percent. Unlike OIPs and WMIP, the APNIP will provide, in addition to rehabilitation of I&D systems, agricultural

advisory services to improve agricultural and water management practices and marketing. The project investments, therefore, are expected in higher crop productivity improvements. However, the analysis conservatively assumes 15 percent yield increases for all field crops and 10 percent increase for orchards.

9. Presently irrigated agricultural lands in the Southern oblasts are mainly cropped with wheat (31 percent), maize (15 percent), lucerne (10 percent), vegetables (10 percent) and oil crops (10 percent). While in the Northern oblasts irrigated lands are used for production of wheat (36 percent), lucerne (26 percent), barley (16 percent) and potatoes (7 percent). Orchards are produced on 7 percent and 2 percent of irrigated lands in the South and the North, respectively. Approximately 5 percent of irrigated lands in both oblasts are left unused due to unavailability of water. A 40 percent of household plots in the South are under vegetable production and fruit trees, while in the North 40 percent are under maize and fruit trees. The remaining 60 percent is used for non-agricultural plants such as flowers and non-fruit trees (20 percent) and/or left unused. As findings of the impact assessment survey suggest, improved irrigation service delivery result in shifting cropping patterns towards more vegetable, cotton, lucerne and orchard production. Under the APNIP, agricultural development plans, which will be prepared for the rehabilitated WUAs, expected to guide cropping patterns based on seasonal and marketing conditions as well as recommendations for increased production of nutritious food. For the purpose of this analysis, however, the WiP cropping patterns are assumed to be similar to the post-rehabilitation cropping patterns in the rehabilitated WUAs.

Table 5. Cropping patterns and yields

Crops	Cropping patterns (%)				Yields (kg/ha)			
	South		North		South		North	
	WoP	WiP	WoP	WiP	WoP	WiP	WoP	WiP
Wheat	30%	25%	30%	25%	2,700	3,100	2,375	2,730
Barley	0%	0%	16%	13%			1,800	2,070
Maize (grain)	15%	13%	5%	5%	5,167	5,940	3,000	3,450
Rice	2%	2%	0%	0%	3,133	3,600		
Beans	0%	1%	7%	10%			1,800	2,070
Cotton	9%	9%	0%	0%	2,700	3,100		
Oil crops	10%	10%	2%	3%	1,025	1,180	1,500	1,725
Vegetables	10%	13%	0%	10%	15,533	17,850		
Potatoes	5%	7%	10%	11%	10,900	12,500	18,750	21,150
Melons	1%	2%	1%	1%	27,700	31,850	25,000	28,750
Lucerne	8%	10%	22%	20%	10,000	11,500	3,825	4,400
Fruit & berries	5%	8%	2%	2%	7,900	8,700	8,000	8,800
Unused land	5%	0%	6%	0%				
Total	100%	100%	100%	100%				

10. The farmers, whose systems will be rehabilitated, are assumed to start reaping benefits in the third season after completion of rehabilitation of the first sections of the irrigation systems. The farmers who will benefit from agricultural advisory services only are expected to start

yielding benefits in the third season after receiving the training. The percentage of project area receiving benefits in each year is therefore based on the percentage of irrigation rehabilitation completed at the end of each year. The analysis assumes that incremental benefits will be achieved on 80 percent of the project area.

11. **Nutrition benefits.** Undernutrition causes significant economic losses. In 2011 annual economic losses resulting from undernutrition among children under five were estimated at US\$ 32 million which was equivalent to 0.7 percent of the Kyrgyz Gross Domestic Product.²¹ These included productivity losses at US\$ 28 million due to stunting and iodine deficiency and US\$ 4 million due to undernutrition related workforce losses. This assessment were based on the child nutrition status in 2006. There was almost no improvement in nutritional status of the children since 2006. If around 13.7 percent of children under age five were stunted in 2006, their shares reached 18.0 percent in 2012 and slightly reduced (16.3 percent) in 2013. Similarly, prevalence of children born with LBW (under 2.5 kg) increased from 5.3 percent to 5.9 percent. Shares of underweight children remained unchanged at 3.4 percent. Despite some positive changes, around 43 percent of children age 6 to 59 months still have anemia, and around 22 percent of child mortality under age five are still associated with undernutrition.

Table 2. Key Indicators on Nutritional Status and Child Mortality for 2006, 2012 and 2013

	2006	2012	2013
Stunting among children under five	13.7	18.0	16.3
Wasting among children under five	4.0	9.0	3.6
Underweight among children under five	3.4	3.0	3.4
Low birth weight among children under five	5.3	6.0	5.9
Child mortality among children under five		26.6	29.3
Child mortality due to diarrhea among children under 5	23.8		n/a
Anemia among children under five	51.0	43.0	n/a
Number of under-five deaths		3952	n/a
Anemia among women of reproductive age (15-44)	24.5	35.2	n/a
Households using salt consisting some level of iodine (or less than 15mg/kg iodine)	98.0	97.0	n/a

12. The analysis accounts nutrition benefits only to children who are under five at the project start, and excludes health and nutrition benefits to pregnant women, women of reproductive age, and other adult beneficiaries. In other words, the results of nutrition analysis does not present full scope of nutrition benefits. In the 60 AAs, there are approximately 57,250 children under five of which around 37,650 are children under two. The nutrition investments expected to save around 76 children from nutrition-related mortality. Workforce losses to deaths were calculated assuming an average monthly wage at US\$ 135 (which is an average monthly wage for manual labor in agriculture and construction sectors), eight employment months in a year, economically active life between 16 and 56 years, labor force participation rate at 60 percent and coverage rate

²¹ *Situational Analysis: Improving economic outcomes by expanding nutrition programming in the Kyrgyz Republic*, by World Bank and UNICEF

at 80 percent. The nutrition investments also expected to avert 9,300 cases of stunting and anemia among children under five. Studies suggest that undernutrition leads to up to 15 percent lower productivity due to poorer physical status and up to 10 percent lower income earnings due to poorer cognitive function and deficits in schooling. The current analysis, however, adopts more conservative approach and estimated the productivity losses assuming five percent income losses for stunted children of under 24 months, and 5 percent productivity losses for children with anemia who are 25-60 months at the project start. It also assumes that future monthly wages of these children will be equivalent to average monthly wages of manual workers in agriculture and construction sectors. Success rate at 80 percent was assumed in both estimates.

13. The financial base cost of the project in 2014 prices inclusive of physical contingencies is estimated at US\$34.0 million. Costs of project components are distributed in the following shares: Rehabilitation and Modernization of Irrigation and Drainage Infrastructure (73.7 percent), Agricultural Advisory Services (9.2 percent), Nutrition Improvements (12.0 percent) and Project Management (5.1 percent). The economic cost of the project is estimated by removing price contingencies and all taxes and duties from the financial base cost.

Financial Analysis

14. The project investments in rehabilitation of I&D systems and agricultural extension and marketing is expected to generate an incremental agricultural net benefits at US\$2.3 million annually. Incremental gross margins for the North and South farmers, with average holding sizes of 3.63 ha and 1.25 ha will be US\$ 380 and US\$ 682. Individually, the agricultural and irrigation interventions are expected to produce a financial net present value (FNPV) of US\$ 46.1 million, financial internal rate of return (FIRR) of 25.2 percent and benefit to cost ratio of 2.2. The nutrition interventions are expected to generate incremental net benefits at US\$3.5 million annually, and yield FNPV of US\$ 68.2 million, FIRR of 25.0 percent and benefit to cost ratio of 14.5.

15. The project as a whole is expected to yield FIRR 24.8 percent with FNPV of US\$64.2 million. Benefit to cost ratio is estimated at 3.5.

Economic Analysis

16. Economic rate of return to the project as a whole estimated at 26.3 percent, with the economic net present value of US\$ 48.2 million and benefit to cost ratio of 3.2.

17. *Sensitivity Analysis.* Sensitivity analysis was undertaken to test the robustness of the project for four sensitivity variables: (i) an increase in the project cost, (ii) a benefits decline, (iii) a two-year delay in benefit accumulation and (iv) a simultaneous increases in the project cost and reduction in benefits. The project is moderately sensitive to changes in the all variables. A 20 percent project cost increases reduces the base EIRR to 23.8 percent. A 20 percent decline in benefits drops the EIRR to 23.2 percent, while a two-year delay in benefit accumulation reduces the EIRR to 20.1 percent. A simultaneous 20 percent reduction in benefits and a 20 percent increase in project costs will reduce the EIRR to 20.9 percent only. The project is considered robust as EIRR remains high in all scenarios. Details of the sensitivity analysis are presented in Table 3.

Table 3. Sensitivity Analysis

Variables	ERR (%)
Baseline results	26.3%
Project cost increase by 20%	23.8%
Benefit decline by 20%:	23.2%
Two year delay in benefit accumulation	20.1%
Simultaneous a 20% increase in the project cost and a 20% decline in benefit scopes	20.9%

Annex 6: World Bank-Administered Projects and Programs in the Agriculture and Health Sectors in the Kyrgyz Republic

Kyrgyz Republic: Agricultural Productivity and Nutrition Improvement Project

Project	Costs (US\$)	Source of funds	Closing date	PDO	Activities financed
OIP-2 and AF	35.5 m	IDA	Dec 2016	To improve irrigation service delivery on a sustainable basis that will contribute to increased agricultural productivity among irrigation farmers	-Rehabilitation of on-farm I&D systems of 48 WUAs to be transferred to NWRMP-1
APNIP	38 m	GAFSP	Dec 2022	To increase agricultural productivity and food security of rural households in selected areas nationwide	-Rehabilitation of I&D systems of 40 WUAs out of the total 481 WUAs -Agricultural advisory services -Nutrition improvements.
NWRMP	8.1 m for Phase 1	SDC	Dec 2017 – Phase 1 Dec 2020 – Phase 2	To improve WRM capability and irrigation service delivery for the benefit of water users	- WRM and WIS -I&D service delivery improvement -WUA strengthening
CAHMP²²	27.7 m	IDA Multi-donor TF	Aug 2016	To improve the accuracy and timeliness of hydromet services in Central Asia, with particular focus on Kyrgyz Republic and Republic of Tajikistan	-Regional cooperation and information sharing - Strengthening hydromet services in Kyrgyz Republic and Republic of Tajikistan
CAEWDP²³	11.0 m	IDA Multi-donor TF	Dec 2016	To build energy and water security for Central Asia through enhanced regional cooperation	- Analytical work, institutional strengthening and investment preparation for energy development, clarifying energy-water linkages and improving water productivity
AISP²⁴	22.0 m	IDA IFAD	Closed; June 2013	To improve the institutional and infrastructure environment for farmers and herders, with a strong emphasis on the livestock sector	-Support for institutional reform and farmers' capacity building related to community-driven pasture management, agricultural production, investments and services
APAP²⁵	6.85 m	RFPCR ²⁶	Jul 2015	To increase the productivity of the beneficiary	- Investment support (credit line, Community Seed Banks

²² Central Asia Hydrometeorology Modernization Project

²³ Central Asia Energy and Water Development Program

²⁴ Agricultural Investments and Services Project

²⁵ Agricultural Productivity Assistance Project

²⁶ Russia Food Price Crisis Rapid Response

Project	Costs (US\$)	Source of funds	Closing date	PDO	Activities financed
				farmers	and women's self-help groups) -Technical support (weather information, training and extension services)
Support to CSBs	2.8 m	JSDF ²⁷	N/A	To increase the agricultural productivity of the beneficiaries in the project areas	- Support for expansion of the Community Seed Banks system including women's self-help groups
PLMIP²⁸	15.0 m	IDA	Mar 2019	To improve community based pasture and livestock management in the project area.	-Support to 140 pasture users unions and 420 private veterinarians in Chui and Talas Oblasts -Pilot community based pasture management in five forestry enterprises -strengthen the capacity of the related technical agencies and educational institutions

²⁷ Japan Social Development Fund

²⁸ Pasture and Livestock Management Improvement Project