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IDA/R2016-0261/1

November 8, 2016

Closing Date: Tuesday, November 29, 2016 at 6 p.m.

FROM: Vice President and Corporate Secretary

Kyrgyz Republic - Integrated Dairy Productivity Improvement Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit and grant to Kyrgyz Republic for an Integrated Dairy Productivity Improvement Project (IDA/R2016-0261) which is being processed on an absence-of-objection basis.

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

Document of
The World Bank

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Report No: PAD1705

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 2.0 MILLION
(US$2.75 MILLION EQUIVALENT)

AND A PROPOSED GRANT

IN THE AMOUNT OF SDR 1.7 MILLION
(US$2.25 MILLION EQUIVALENT)

TO THE

KYRGYZ REPUBLIC

FOR A

INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

November 3, 2016

Agriculture Global Practice
EUROPE AND CENTRAL ASIA

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 6, 2016)

Currency Unit	=	Kyrgyz Som
KGS 72.70	=	US$ 1.00
US$ 1.39	=	SDR 1.00

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ABCC	Agribusiness Competitiveness Center
ADB	Asian Development Bank
AI	Artificial Insemination
BDIC	Business Development and Investment Council
CAAP	Central Asia Agrifinance Project
CLMU	Credit Line Management Unit
CPS	Country Partnership Strategy
CSF	Community Seed Fund
CSOs	Civil Society Organizations
DA	Designated Account
DFID	Department for International Development
EA	Environmental Assessment
EAEU	Eurasian Economic Union
ECA	Europe and Central Asia
ECAPDEV	Europe and Central Asia Region Capacity Development
EIA	Environmental Impacts Assessment
ERR	Economic Rate of Return
ES	Environmental Specialist
ESMF	Environmental and Social Management Framework
FAO	Food and Agriculture Organization of the United Nations
FM	Financial Management
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GNI	Gross National Income
GOK	Government of the Kyrgyz Republic
GOST	Kyrgyzstan Standard Organization (NISM)
GP	Global Practice
GRM	Grievance Redress Mechanism
HACCP	Hazard Analysis Critical Control Point
IDA	International Development Association
IDPIP	Integrated Dairy Productivity Improvement Project
IFAD	International Fund for Agricultural Development

IFC	International Finance Corporation
IFR	Interim Financial Report
ISA	International Standards on Auditing
IsDB	Islamic Development Bank
JICA	Japan International Cooperation Agency
KDSDP	Kyrgyz Dairy Sector Development Program
KG	Kilogram
KR	Kyrgyz Republic
MDV	Model Dairy Village
M&E	Monitoring and Evaluation
MOAFIM	Ministry of Agriculture, Food Industry and Melioration
MOE	Ministry of Economy
MOF	Ministry of Finance
NGO	Non-Governmental Organization
NPV	Net Present Value
OIE	World Organization for Animal Health
OP	Operational Policy
PDO	Project Development Objective
PFI	Participating Financial Institution
PMU	Project Management Unit
PPD	Public-Private Dialogue
POM	Project Operational Manual
R&D	Research and Development
SECO	Swiss Economic Cooperation and Development
SHG	Self-Help Group
SOE	Statements of Expenditure
TA	Technical Assistance
TAIC	Training, Advisory and Innovation Centre
TOR	Terms of Reference
US$/USD	United States Dollar
WB	World Bank
WBG	World Bank Group
XDR/SDR	Special Drawing Rights

Regional Vice President:	Cyril Muller
Country Director:	Lilia Burunciuc
Senior Global Practice Director:	Juergen Voegele
Practice Manager:	Julian Lampietti
Task Team Leaders:	Sandra Broka, Mai Nguyen, Serhiy Osavolyuk

KYRGYZ REPULBIC
Integrated Dairy Productivity Improvement Project

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Integrated Dairy Productivity Improvement Project (P155412)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

FOOD AND AGRICULTURE GLOBAL PRACTICE

Report No.: PAD1705

Basic Information			
Project ID P155412	EA Category B - Partial Assessment		Team Leader(s) Sandra Broka, Mai Nguyen, Serhiy Osavolyuk
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 29-Nov-2016	Project Implementation End Date 30-Jun-2020		
Expected Effectiveness Date 30-Jun-2017	Expected Closing Date 31-Dec-2020		
Joint IFC Yes	Joint Level Joint Project - involving co financing with IFC (loan, equity, budget, other) or staffing		
Practice Manager Julian Lampietti	Senior Global Practice Director Juergen Voegele	Country Director Lilia Burunciuc	Regional Vice President Cyril E Muller

Borrower: Kyrgyz Republic			
Responsible Agency: Ministry of Agriculture, Food Industry and Melioration			
Contact:	Turdunazir Bekboev	Title:	Minister
Telephone No.:	996-312-623715	Email:	agroprod@agroprod.kg
Responsible Agency: Ministry of Finance			
Contact:	Mirlan Baigonchokov	Title:	Deputy Minister of Finance Minister
Telephone No.:	996312664036	Email:	m.baigonchokov@minfin.kg

Project Financing Data(in USD Million)							
[ ]	Loan	[X]	IDA Grant	[ ]	Guarantee		
[X]	Credit	[ ]	Grant	[ ]	Other		
Total Project Cost:		5.12		Total Bank Financing:		5.00	
Financing Gap:		0.00					

Financing Source	Amount
LOCAL BENEFICIARIES	0.12
International Development Association (IDA)	2.75
IDA Grant	2.25
Total	5.12

Expected Disbursements (in USD Million)

Fiscal Year	2018	2019	2020	2021						
Annual	0.50	1.50	2.00	1.00						
Cumulative	0.50	2.00	4.00	5.00						

Institutional Data

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Finance & Markets, Trade & Competitiveness

Cross Cutting Topics

[X]	Climate Change
[ ]	Fragile, Conflict & Violence
[X]	Gender
[X]	Jobs
[ ]	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	Animal production	70	100	100
Finance	General finance sector	20	100	100
Industry and trade	Agro-industry, marketing, and trade	10		
Total		100		

☐ 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	25
Rural development	Rural policies and institutions	25
Trade and integration	Trade facilitation and market access	25
Financial and private sector development	Micro, Small and Medium Enterprise support	15
Environment and natural resources management	Climate change	10
Total		100

Proposed Development Objective(s)

The Development Objective of the Project is to enhance dairy animal productivity and milk quality on beneficiary farms.

Components

Component Name	**Cost (USD Millions)**
Component 1: Strengthening Public and Private Services in the Dairy Sector	1.65
Component 2: On-farm Productivity Enhancement	1.48
Component 3: Farm-level Investments	1.27
Component 4: Project Management	0.60

Systematic Operations Risk- Rating Tool (SORT)

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

OVERALL	Moderate

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
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**
Establish and maintain the Steering Committee		29-Aug-2017	

Description of Covenant

For the purposes of overall Project oversight and coordination the Recipient shall establish, not later than 60 days after the Effective Date, and thereafter maintain until completion of the Project the Steering Committee with the composition, terms of reference and resources adequate for the implementation of its functions.

Name	**Recurrent**	**Due Date**	**Frequency**
Project Operational Manual including Revolving Fund Operational Manual		30-Jun-2017	

Description of Covenant

The Recipient, through ABCC and CLMU, shall: (a) adopt the Project Operational Manual, including the Revolving Fund Operational Manual, and carry out the Project in accordance with the Manuals; and

(b) not amend, suspend, abrogate, repeal or waive any provision of said Manuals without the prior written approval of the Association.

Name	Recurrent	Due Date	Frequency
Sub-projects	X		Yearly

Description of Covenant

The Recipient, through CLMU, shall provide Sub-financing under a Sub–financing Agreement on terms and conditions to DBGs in accordance with eligibility criteria and procedures acceptable to the Association, and set forth in the Revolving Fund Operational Manual.

Name	Recurrent	Due Date	Frequency
Safeguards	X		Yearly

Description of Covenant

The Recipient, through ABCC, shall implement the Project in accordance with ESMF and any relevant Supplemental Social and Environmental Safeguard Instrument, as may be required.

Name	Recurrent	Due Date	Frequency
Project Reports	X		Quarterly

Description of Covenant

The Recipient shall monitor and evaluate the progress of the Project and prepare Project Reports in accordance with the provisions of Section 4.08 of the General Conditions and on the basis of the indicators acceptable to the Association. Each Project Report shall cover the period of one calendar semester, and shall be furnished to the Association not later than one month after the end of the period covered by such report.

Name	Recurrent	Due Date	Frequency
Interim Financial Reports	X		Quarterly

Description of Covenant

The Recipient shall prepare and furnish to the Association not later than 45 days after the end of each calendar quarter, interim unaudited financial reports for the Project covering the quarter, in form and substance satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Financial and Reporting Software		29-Aug-2017	

Description of the Covenant

Not later than 60 days after the Effective Date, CLMU shall update of its accounting and financial reporting software in accordance with the technical requirements and specifications acceptable to the Association and set forth in the Project Operational Manual.

Name	Recurrent	Due Date	Frequency
Financial Statements audited	X		Yearly

Description of Covenant

The Recipient shall have its Financial Statements audited in accordance with the provisions of Section 4.09 (b) of the General Conditions. Each audit of the Financial Statements shall cover the period of one

fiscal year of the Recipient. The audited Financial Statements for each such period shall be furnished to the Association not later than six months after the end of such period.

Conditions

Source Of Fund	Name	Type
IDA	Project Operational Manual	Effectiveness

Description of Condition

The Recipient shall have prepared and adopted the Project Operational Manual which shall include the Revolving Fund Operational Manual, both in a form and substance acceptable to the Association.

Source Of Fund	Name	Type
IDA	No withdrawal prior to signing of the Agreement	Disbursement

Description of Condition

Notwithstanding the General Provisions (Part A) of Section IV of Schedule 2, no withdrawal shall be made for payments made prior to the date of this Agreement.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Sandra Broka	Team Leader (ADM Responsible)	Senior Agriculture Economist		GFA03
Mai Nguyen	Team Leader	Senior Operations Officer		GFM09
Serhiy Osavolyuk	Team Leader	Operations Officer		GTCEE
Irina Goncharova	Procurement Specialist (ADM Responsible)	Procurement Specialist		GGO03
Jasna Mestnik	Disbursement Specialist	Finance Officer		WFALA
Nodar Mosashvili	Financial Management Specialist	Consultant		GGODR
Alisher Khamidov	Safeguards Specialist	Consultant		GSU03
Anvar Nasritdinov	Team Member	Operations Officer		GFM09
Arcadii Capcelea	Safeguards Specialist	Senior Environmental Specialist		GEN03
Hiromi Yamaguchi	Team Member	Consultant		GFA03
Izabela Leao	Team Member	Rural Development Specialist		GFADR

Marimuthu Swaminathan	Team Member	Consultant		GFA03
Michael G. Carroll	Team Member	Consultant		GENDR
Natalya V. Iosipenko	Team Member	Communications Assistant		ECAEC
Ruxandra Costache	Counsel	Senior Counsel		LEGLE
Nikolai Soubbotin	Counsel	Lead Counsel		LEGLE
Talaibek Torokulovich Koshmatov	Team Member	Sr. Agricultural Spec.		GFA03
Alexander Balakov	Procurement Specialist	Sr. Procurement Specialist		GGO03
Ekaterina Romanova	Social Development Specialist	Social Development Specialist		GSU03
Valencia M. Copeland	Team Member	Program Assistant		GFA03

Extended Team

Name	Title	Office Phone	Location
Brian Bedard	Livestock Specialist		
Cecil McMurray	Veterinary Laboratory Specialist		
Kairat Nazhmidenov	Economist		Rome, Italy
Marimuthu Swaminathan	Livestock Specialist (FAO)		

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Kyrgyz Republic	Ysyk-Koel	Issyk-Kul'skaya Oblast'	**X**		Issyk-Kul

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ?	Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. **With Gross National Income (GNI) per capita of US$1,170 (2015), the Kyrgyz Republic is one of the low income economies of the Europe and Central Asia Region**. In 2014, approximately 30.6 percent of the population lived below the poverty line, with the incidence of poverty slightly higher in rural areas than in urban areas (32.6 percent vs. 26.9 percent). Economic growth in the country has been quite volatile. Gross Domestic Product (GDP) growth was 10.9 percent in 2013, but slowed down to 3.6 percent in 2014 and remained at 3.5 percent at the end of 2015. The narrow export base is dominated by gold, with agricultural products representing on average 16 percent of total exports from 2009 to 2013. The economy is highly vulnerable to external shocks, in particular many households depend on remittances from the energy-based economies of Russia and Kazakhstan. It is partially dependent on wheat imports from Kazakhstan and the past global food price shocks quickly transmitted to the country. The official unemployment rate in the country has hovered below 10 percent for the past decade, however mostly on account of significant outmigration of labor force (predominantly men from rural areas) to Russia and Kazakhstan. The recent economic difficulties of Russia and the strong devaluation of the ruble have negatively affected the earnings of the migrants and their remittances to their families in the Kyrgyz Republic.

B. Sectoral and Institutional Context

2. **Agriculture is an important sector for the Kyrgyz Republic's economy and livestock production is a major livelihood support system for rural people.** Agriculture represents about 15 percent of GDP, and it is still a major employer, providing more than a third of jobs. The sector's growth rate in 2015 was a relatively high 6.2 percent. Agriculture is a key priority for the government due to its contribution to poverty reduction and rural employment. Livestock production, which accounts for about 50 percent of the agricultural GDP, is dominated by household and small farm production. It is important for rural household food security, nutrition, regular income generation, and acts as a social safety net as animals can be sold in times of hardship and economic distress. The primary land use of the country is native pasture production (87 percent of the total land is under pastures), which provides an advantage for livestock-based livelihood and food security for the rural population.

3. **With the accession of the Kyrgyz Republic to the Eurasian Economic Union (EAEU)[1], the country's agriculture sector is facing new challenges, and also new opportunities**. The Kyrgyz Republic became a full member of the EAEU in May 2015. The EAEU includes Russia and Kazakhstan, which are the Kyrgyz Republic's main export markets. However, since 2012, a partial dairy export ban has been in force, limiting the number of dairy exporters (more information in paragraph 4 below). The Kyrgyz dairy producers and processors may be unable to capitalize on new market opportunities due to their inability to meet the animal health, food safety and quality standards of the EAEU. However, Kyrgyz dairy products benefit from a reputation of better taste due to the natural pasture-based production model. Addressing current constraints in the Kyrgyz

[1] Current membership of the EAEU includes: Russia, Kazakhstan, Belarus, Armenia and the Kyrgyz Republic.

dairy sector would allow to capitalize on new market opportunities, as well as on the achievements and initiatives of the previous and ongoing projects in the agriculture sector.[2]

4. **Market opportunities and demand for Kyrgyz milk and dairy products, in particular in Kazakhstan, are significant**. Even though the border is closed to most of the official dairy exports (only seven companies are able to export dairy products to Kazakhstan due to quality-related issues), informal trade is booming. The official value of exports of milk/dairy products in 2012 was US$30 million (equivalent to 4 percent of the annual milk production volume), yet the unofficial export revenues were closer to US$100 million (14 percent of the milk production volume). Russia is also considered a large potential export market for dairy products (in particular, cheese). Once milk quality is upgraded, exporting to other countries (such as China, Afghanistan and Pakistan) should be possible. Annex 8 describes the market opportunities in more detail.

5. **The Kyrgyz dairy sector is primarily dependent on smallholder private dairy units with an average herd size of 3-5 heads of cattle (including, 1 – 3 dairy cows)**. Around 60 percent of the rural population own livestock, but the average herd size tends to be small. Milk is an important part of the diet, and in value terms, milk is one of the top five agricultural products of the country. Per capita availability of milk is around 193 kg and 25 percent of the milk produced is surplus, for processing and export. However, farmers who keep animals do not consider themselves dairy farmers (animals are rather considered a subsistence livelihood source), and the animal breeding and management practices are poor, which accounts for low dairy sector productivity.

6. **Livestock productivity is low**, **and has been declining over the past several years** from 2,041 kg in 2009, to 2,013 kg in 2013 per cow per year. By comparison, in countries with more developed dairy systems, milk yields reach 5,000 kg per cow per year. Many factors cause this low productivity at the farm level: inadequate on-farm animal health management, poorly equipped disease diagnostic services, irregular and incomplete vaccinations, low breed stock (genetic) quality, absence of sustainable breeding policies and practices, inadequate feeding, improper shed maintenance, and farm hygiene issues, overall poor knowledge of animal husbandry techniques, low level of investments into production and marketing infrastructure. Addressing these issues can significantly increase both productivity and total output of milk, which would contribute to increasing producers' incomes and help address the sourcing problems faced by dairy processors. Processors experience a shortage of clean and high quality milk, and as a result

[2] The program builds on the Bank-supported Avian Influenza Project and Agricultural Investments and Services Project, which focused on reforms of the state veterinary services and establishment of private veterinary services; reforms in pasture management: establishment of pasture users unions and pasture committees to manage pastures as common resources; and strengthening of central laboratories. The Agribusiness and Marketing Project worked with processing companies to improve their technological processes, and marketing and financial management capacities. Finance and Markets GP/IFC's Central Asia Agri-Finance Project is helping introduce new agri-finance lending products and establish better links between farmers, aggregators and financial intermediaries. A Trade & Competitiveness GP-implemented project works on improving food safety legislation and increasing capacity of the veterinary and sanitary inspectors. JICA has developed a Master Plan for the development of the food safety regulations in the dairy sector. The government is aiming to launch an animal identification program, following the Law on Animal Identification passed in 2014; FAO has started a small pilot project on animal identification. The project will also coordinate activities with IFAD's Livestock and Markets Project which covers some fodder production, veterinary services support and vaccinations, and small scale (home) milk cooling equipment in Issyk-Kul Region.

underutilize their processing capacities and forego additional incomes that could come from exporting to other countries (primarily, to the neighboring Kazakhstan). Export bans have a multiplier effect, as they affect not only the processors but also the milk-selling farmers and households, and other players in the value chain.

7. **The Kyrgyz Dairy Sector Development Program (KDSDP) is designed to help ensure steady milk exports through a dairy value chain approach, which would enable farmers to receive steady and increased incomes for the milk**. It was initiated with support from IFC's advisory program[3] in 2015, to help the country capitalize on market opportunities presented by the EAEU. The Program has already started working with dairy processors in Issyk-Kul Region. However, issues related to animal health and low productivity continue to persist. To make value chain development successful, it is imperative that on-farm improvements as well as necessary public sector investments are supported to ensure high quality and increased volume of milk. Thus, the KDSDP has grown into a comprehensive[4] program addressing the various bottlenecks affecting the entire dairy value chain. The Program covers all aspects of the dairy value chain: cattle breed improvement, animal feed improvement, improvements of animal productivity and milk quality, extension, education and outreach services, animal health and hygiene, milk collection upgrades, laboratory, disease diagnosis and testing capacity (animal disease control, food safety and milk quality) upgrades, processing capacity upgrades, food safety standard enforcement, enabling regulatory framework, and export promotion. Table 1 below summarizes the main financiers and their contributions to the KDSDP:

Table 1 – Main financiers and contribution to the KDSDP

Financier/Donor	Amount, US$ equivalent	Main Expertise and Contribution	Status
Main Theme: Dairy Sector Legal and Regulatory Framework			
DFID/SECO	0.83 million	- Food safety legal framework reform; - Capacity building and trainings of veterinary and sanitary inspectors.	On-going
DFID/SECO	1.5 million	- Improvement of the regulatory environment in the sector a) Improving animal health provision, with relevant work on legislative, regulatory, and institutional reforms; b) Improving the investment policy framework, particularly those relevant to investment in the meat and dairy sectors. c) Support PPD in Issyk-Kul.	Upcoming
Main Theme: Dairy Processing and Market Linkages			
Government of Austria	1.0 million	- Dairy supply chain development, business farms development, incl.	On-going

[3] Central Asia Agrifinance Project (CAAP)

[4] The approach stems from a joint World Bank-IFC Kyrgyz Republic Agribusiness Study[4] (2014), which identified that there is not one issue in the agricultural sector, the resolution of which would unlock the potential for sector development. The study concluded that a comprehensive approach is required to resolve the multitude of issues hindering sector development. This approach was then adopted for the KDSDP.

		feeding, health, reproduction, farm management; - Advisory for FIs on agri- and supply chain financing	
Government of Japan	0.4 million	- Dairy supply chain development, business farms development, incl. feeding, health, reproduction, farm management; - Advisory for FIs on agri and supply chain financing	On-going
Main Theme: Identification, Registration and Animal Health			
Islamic Development Bank	5.0 million	- Animal identification and registration in Issyk-Kul; - Animal vaccination; - Animal disease control and veterinary laboratory.	Upcoming
Government of KR (using EAEU grant funds)	Approx. 0.5 million	- Equipment and software for animal identification and registration.	On-going
Government of the KR	Approx. 0.3 million	- Support to veterinary services.	On-going
Main Theme: On-farm Productivity and Milk Quality Improvement			
IDA	5.0 million Phase I	- On-farm productivity and quality improvement (including Revolving Fund facility); - PPD.	Proposed
Total	**14.53 million**		
IDA	IDPIP Phase II: estimated 20.0 million	- On-farm productivity and quality improvement (including AI and strengthening the regional veterinary laboratory capacity).	To be proposed
Grand Total for the Program	**34.53 million**		

C. Higher Level Objectives to which the Project Contributes

8. **The overall KDSDP, and the proposed project, are fully aligned with the strategic objective of the 2014-2017 Country Partnership Strategy (CPS).** The strategic objective of the CPS is to help reduce extreme poverty and promote shared prosperity through support for improved governance, with emphasis on three broad areas: public administration and public service delivery; business environment and investment climate; and, natural resources and physical infrastructure. The program would increase rural incomes, thus helping reduce poverty by supporting small household dairy farms, and promote shared prosperity through strengthening and adding value along the dairy value chain, thereby contributing to the Bank's *twin goals*. Improved public service delivery aspects would be addressed through support to the PPD platform and Veterinary Services Department, while the business environment and investment climate issues specific to the dairy value chain would be addressed through business advisory, legal and regulatory advice and technical assistance under the complementary projects financed by other donor agencies. The proposed project would also include the promotion of efficient land resource management, including pastures and fodder production.

9. **The proposed project activities fully support the agriculture sector priorities described in the CPS**, including: expansion of the agricultural extension services, animal health services, food safety, encouraging greater private sector participation, developing small and medium-sized agricultural enterprises, and investing into storage and distribution. The CPS also highlights livestock as a sub-sector with good development prospects, subject to further strengthening to make it internationally competitive.

10. **The proposed project also supports the National Strategy of Sustainable Development 2013-2017 where agriculture is listed among the strategic sectors of the economy**. The National Strategy explicitly calls for development of agriculture clusters, improvement of breed stock, improvement of veterinary services, provision of training to farmers, and support to the production of feed, milk and dairy processing. The comprehensive value-chain approach used by the proposed KSDSP would address most of these issues.

11. **The project has received a series of additional endorsements**. On June 5, 2015, the proposed project was presented at the Business Development and Investment Council (BDIC) meeting, which is chaired by the Prime Minister. The Council confirmed its support to the project, and on June 22, 2015 issued a Decision requesting the MOAFIM to: (i) draft the Government Resolution on the establishment of the special dairy zone in Issyk-Kul Region; and (ii) prepare a dairy sector development (zoning) program in Issyk-Kul in collaboration with the World Bank and other involved donors. The approval of the Coordination Council for Macroeconomic and Investment Policy, chaired by the Prime Minister, was secured on May 30, 2016. On June 28, 2016, the Government of the Kyrgyz Republic approved a set of measures in support of the dairy sector development program in the Issyk-Kul Region for 2016 – 2019.

12. **The proposed project supports a larger value chain development program,** which would aim at increasing agriculture sector productivity and competitiveness, thereby contributing to increased incomes and job creation along selected value chains. This would be a Phase I in a series of projects in this area. The specific value chains would be selected on the basis of their competitiveness. For example, the MOAFIM has requested support in developing extended season vegetable in the South of the country as the next such potential value chain.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

13. **The Development Objective of the Project** is to enhance dairy animal productivity and milk quality on beneficiary farms.

14. **The proposed Phase I project would be implemented in about three years, with a total financing of US$ 5 million**. It will be the first phase of a six year (Phase I and Phase II together) Integrated Dairy Productivity Improvement Project (IDPIP), with the total required funding of about US$25 million. Phase I will ensure initial achievement of the IDPIP objectives in selected key areas, in accordance with targets stipulated in Annex 1. Phase II would finance the remaining component of the Program. IDPIP contributes to the overall development objective of the Program which would aim to increase export of Kyrgyz dairy products to neighboring countries (primarily

Kazakhstan and Russia), increase incomes of dairy farmers, and create new jobs along the dairy supply chain.

B. Project Beneficiaries

15. **The project beneficiaries include small household dairy farms located in Issyk-Kul Region**. Of about 80,000 household and family farms located in the Issyk-Kul Region, it is estimated that the project activities would reach 12,000 household farms during Phase I (which is expected to last three years), although a significant number - another 12,000 household farms - are expected to be reached as indirect beneficiaries. Most of the project beneficiaries are expected to be household farms with one to three dairy animals, however, the project will also work with larger farmers, up to 10-20 dairy animals. By the end of the Phase I and II (in six years), it is expected that the project will directly reach at least 60,000 households, and indirectly also the remaining 40,000. Given the nature of the proposed project, women and youth are expected to represent at least 70 percent of all beneficiaries (in household farms, women tend to animals and young people do auxiliary jobs), including at least 60 percent of female beneficiaries and at least 10 percent of youth beneficiaries. The starting point for engagement will be the farmers who (i) are willing to be linked, or are already linked to a processor through a milk collection agent; (ii) are willing to join a beneficiary group; and (iii) are interested in adopting new technologies. It is expected that the first beneficiaries will be identified through an awareness raising campaign, and new beneficiaries will be attracted by the successful demonstrations carried out, and results achieved, under the project.

C. PDO Level Results Indicators

16. The Key Indicators for Phase I will include:

(a) The average lactation-period milk yield per cow in the beneficiary farms
(b) Number of households reached as direct project beneficiaries, including no less than 60 percent of total should be female beneficiaries; and no less than 10 percent should be youth beneficiaries;
(c) Percentage of the milk produced and sold on the participating farms meets or exceeds processor quality requirements.[5]

III. PROJECT DESCRIPTION

17. **The proposed project is the first phase of a larger Program** (KDSDP), and would be implemented in two phases with the total funding needs estimated at US$25 million. This project is the first phase (Phase I) in the amount of US$5 million; to be followed by the second phase (Phase II) through Additional Financing instrument. The following description of activities covers the entire IDPIP (Phases I and II), as well as the specific activities to be carried out under Phase I. The proposed project would contribute to the implementation of the overall KDSDP, by supporting the necessary public sector investments (such as PPD), as well as private sector investments (such as on-farm investments), to support milk quantity and quality improvement on beneficiary farms.

[5] The processor quality requirements will be set by the specific processors, depending on the requirements of the market. At the initial stage, mostly expected to be EAEU quality requirements.

18. **The proposed project will focus on the following integral aspects of the engagement**:

(a) **Creating jobs and increasing incomes along the value chain**. The dairy sector is labor-intensive, and the value addition along the value chain and strengthened linkages between farmers, processors and markets are expected to increase the incomes of farmers and create jobs along the value chain. This would be achieved through partnership building activities along the value chain, including the association of farmers into groups, and providing access to training, knowledge and investments for the value chain participants.

(b) **Exploring a strong gender and youth dimension.** Dairy farming requires family or hired labor. Milk collection, animal feed preparation and other activities are expected to generate additional employment and, possibly, small business development. Women are a particular focus under this project, as in many cases women tend to the animals (it is quite commonly observed in smallholder dairy systems that two thirds of the husbandry activities are handled by women). Employment generation and small business activities may encourage young people to stay in the villages and take up farming and generate (additional) income through the provision of services (such as grass cutting and fodder preparation, shed cleaning, milk collection and testing, etc.). The project does not envisage any activities separately for men and women. Instead, the project would focus on ensuring equal access to services and training provided under the project for both genders. For instance, the project would ensure that the opening hours of the veterinary services providers are suitable both for men and women. The project does not envisage activities directly promoting better nutrition. However, given that the milk is expected to be more nutrient-rich and safe due to better feeding and hygiene of animals, the project is also expected to have a positive impact on nutrition of the rural population.

(c) **Ensuring citizen engagement and feedback.** The engagement of the beneficiaries in the project implementation is expected to be strong due to the nature of proposed project. Therefore, transparency, consultations and feedback mechanisms would be a central part of the project. Building a value chain requires mutual trust between the various stakeholders (among the milk producers, as well between producers, processors and traders). Ensuring trust among the project beneficiaries and working towards the same objective will require continuous consultations and information and knowledge exchange. Facilitation of beneficiary engagement and feedback would be a key task of the project staff located in the field. In addition, a feedback mechanism operating at both national and regional levels would allow project beneficiaries to provide feedback on project activities. Feedback/grievances responded and/or resolved within the stipulated service standards for response times will be monitored.

(d) **Exploring World Bank Group synergies**. Project design and implementation involves active collaboration within the WBG. The IFC/GPs focus on working with agro-processors and building upward linkages to markets: (i) identifying aggregators (dairy companies) and strengthening their capacity to expand, invest and provide services to business farmers; (ii) working with financial institutions to increase their capacity to finance dairy supply chains; (iii) assisting GOK to improve food safety control by reforming relevant legislation and trainings of public officials; (iv) improving the doing business environment and investment attractiveness of the dairy sector by improving the current regulatory environment and introducing new regulations. IFC may also contribute financing to the proposed project going forward.

(e) **Leveraging other sources of funds.** The KDSDP is expected to be funded by several financiers, including the WBG, the Government of Austria, the Government of Japan, DFID, other donors, private sector and GOK (see Table 1) for a total cost of approx. US$35 million equivalent. The total cost of the IDA program is estimated at US$25 million. Each donor/participant in the program focuses on a specific area, to ensure efficient use of the funding and complementarity. The World Bank's involvement is crucial for the successful implementation of the program, as it would (i) address the missing linkages between the public and private sector activities already financed under the program, by leveraging the WBG's convening power, and (ii) address the financing gap with regards to the milk quality and animal productivity of households and small farmers which is a necessary condition to unlock the export potential of the dairy sector. The Program will also leverage private sector investments, in particular from the agro-processing companies, farmers, and financial institutions, as well as government funding, which will mostly support animal identification and registration.

19. **Project area: Issyk-Kul Region has been selected as the project area based on the results of the feasibility study carried out in February 2015.**[6] The study concluded that Issyk-Kul Region is suitable for dairy value chain development considering its geographical setting (it is surrounded by mountain ranges, which is a natural barrier for restricting animal movement); the abundance of pastures; farmers' willingness to adapt and adopt new technologies; the support of the Region's Governor's office and local authorities; the existence of a direct milk collection system from farmers; suitable level of competitiveness between buyers; good milk production growth rates; and closeness to Kazakhstan. The Region covers about 80,000 potential households (rural population of 330,000 people) and 106,000 dairy cows (cattle population of about 220,000).

A. Project Components

20. The proposed overall Project (Phases I and II) would consist of four components:[7]

Component 1: Strengthening Public and Private Services in the Dairy Sector. This component would contribute to the program development objective by improving the public-private dialogue on private sector development issues, and by supporting the improvements in the breed stock (genetic quality) of the dairy cows. This component would focus on the following activities: (i) Improving the Public-Private Dialogue; (ii) cattle identification and registration in Issyk-Kul Region; (iii) Establishment of an OIE[8]-certified Zone Free of Animal Diseases (with a focus on FMD); and, (iv) Support to AI Service Providers.

Component 2: On-farm Productivity Enhancement. This component would work towards the establishment of Model Dairy Villages.[9] The activities under this component would improve

[6] Kyrgyzstan Dairy Sector Development Program – Pilot through Zoning – Feasibility Report.
[7] See Annex 2 for the detailed project description.
[8] World Organization for Animal Health
[9] The Model Dairy Village (MDV) is designed to ensure proximity of key services and goods for dairy production to farmers. Such MDV is expected to include: a milk collection point, a veterinary doctor/services point, an AI services point, a service center providing access to inputs, medications, farm equipment, training, etc. The proposed project would initiate the establishment of the key service points in the various villages of the Region. The work would be done in collaboration with other donors and private sector players. Depending on the size of the villages, such MDV may encompass one administrative village, or a group of villages, to ensure sufficient demand for the service points.

knowledge on good dairy farming practices among direct and indirect beneficiaries, including through demonstrations, and train the beneficiaries in the adoption of necessary inputs, services and equipment. These activities would mostly focus on small and household farms. The project would leverage Central Asia Agrifinance Program's (CAAP) work with business farms (which started in January 2016 and includes demonstrations of good practices), replicate the suitable methodologies, and, where feasible, use the (larger) business farms as demonstration farms to encourage the households and smaller farms to adopt good practices. The component would focus on the following activities: (i) fodder production and feeding management; (ii) animal husbandry and farm management, including (a) animal housing, general management and handling; (b) animal health, farm hygiene and clean milk production; (c) breeding management; (d) manure management; and (iii) milk collection, cooling and handling.

Component 3: Farm-level Investments. The objective of this component is to promote investments in agribusiness, fostering backward and forward linkages in the dairy value chain and support supply chain infrastructure that create higher value. This would be achieved by providing: (i) a Revolving Fund to facilitate access to finance to small farmers for the purchase of inputs and small equipment, and (ii) technical assistance and capacity building to project beneficiaries, to enable them to access existing financing schemes, such as the credit lines provided by the Kyrgyz-Russian Development Fund. Subject to confirmation during Phase I, a credit line for investment by farmers, milk collectors, service providers, and agro-processors may be introduced. The component would be complemented by CAAP's work with financial institutions to build their capacity in financing agriculture, including the dairy supply chain.

Component 4: Project Management. The component would cover the costs associated with project management, including monitoring and evaluation (M&E), and results assessment. It is expected that project will have two PMUs: the Agribusiness Competitiveness Center (ABCC) reporting to the MOAFIM, and the Credit Line Management Unit (CLMU) at the MOF would implement the technical assistance and revolving fund activities, respectively. In addition, ABCC would be responsible for procurement activities under the project, and CLMU for the financial management of the project. ABCC would also open a regional office in Issyk-Kul consisting of three specialists: Livestock Specialist, Training Specialist, and Environmental Specialist. Both PMUs would closely liaise with the other projects under the KDSDP program. The Grievance Redress Mechanism (GRM) would be established and maintained by ABCC.

21. **Phase I of the proposed project would cover the following activities**:

Component 1: Strengthening Public and Private Services in the Dairy Sector (estimated cost US$1.65 million, all IDA). Phase I of this component would focus on the following activities: (i) Improving the Public-Private Dialogue in Issyk-Kul (US$0.05 million, all IDA); (ii) cattle registration and identification in Issyk-Kul Region (US$1.10 million, all IDA); (iii) Procurement of high quality semen straws to ensure early breeding improvement in the project area (US$0.20 million, all IDA); and (iv) establishment of up to three veterinary check-points (US$0.30 million, all IDA).

Component 2: On-farm Productivity Enhancement (estimated cost US$1.48 million, all IDA)**.** During Phase I, the MDV concept would be introduced, determining the locations of the MDV service points, and providing the initial support to these services. The component would start with

the most-needed services (which could be a veterinarian, an AI office, a milking center, a milk collection point, etc.). The component would work predominantly with groups of beneficiaries. The component would provide training, demonstrations and advice to farmers on good animal breeding and management practices, including: (i) balanced fodder production and feeding management; (ii) animal husbandry and farm management, including (a) animal housing, general management and handling; (b) animal health, farm hygiene & clean milk production; (c) breeding management; and (d) manure management; and, (iii) milk collection, cooling and handling.

Component 3: Farm-level Investments (estimated cost US$1.39 million, including US$1.27 million IDA, and US$0.12 million beneficiaries). Phase I would finance: (i) a US$1.20 million Revolving Fund to facilitate access to finance for small farmer for the purchase of inputs and small equipment; and (ii) technical assistance and capacity building to project beneficiaries to enable them to access existing financing programs (US$0.07 million, all IDA).

Component 4: Project Management (estimated cost US$0.60 million, all IDA). The component would cover the costs associated with project management, including Monitoring and Evaluation for the project implementation, as well as the establishment and maintenance of the Grievance Redress Mechanism (GRM).

B. Project Financing

22. **The project would be financed through Investment Project Financing (IPF) instrument in the amount of US$5 million IDA financing, including US$2.25 million equivalent IDA grant and US$2.75 million equivalent IDA credit**. Beneficiary contributions are expected to amount to about US$0.12 million equivalent, mostly as co-financing for the Revolving Fund. The estimated financing gap of about US$20 million required to finance the on-farm animal productivity and milk quality improvements as described in paragraph 14 of the PAD is expected to be financed through additional financing instrument at a later stage. Allocation of the additional financing for scale-up of the project activities will be subject to confirmation of commitment of the government and the World Bank to the scale-up of the activities. The Project would be implemented over a three-year period.

C. Project Cost and Financing

23. **Table 2 below details project financing by project component** (in US$ million):

Table 2 – Project Financing

Project Components	Project cost (US$ million equiv.)	IBRD or IDA Financing (US$ million equiv.)	% Financing

1. Strengthening Public and Private Services in the Dairy Sector	1.65	1.65	100.0
2. On-farm Productivity Enhancement	1.48	1.48	100.0
3. Farm-level Investments	1.39	1.27	90.0
4. Project Management	0.60	0.60	100.0
Total Costs	5.12	5.00	
Total Project Costs	5.12		
Front-End Fees	0.00		
Total Financing Required	5.12		

D. Lessons Learned and Reflected in the Project Design

24. **The lessons learned draw from the regional experience, as well as the approaches tested under previous Bank-financed project in the Kyrgyz Republic** (such as the Agricultural Productivity Assistance Project):

(i) ***A combination of capacity building (training and advisory services), improved access to finance, and support for public institutional development provides an effective base for the promotion of agriculture commercialization.*** Projects, which have followed a similar design, including in the Kyrgyz Republic (Agribusiness and Marketing Project), Kazakhstan (Agricultural Competitiveness Project), Armenia (Community Agriculture Resource Management and Competitiveness Project), Azerbaijan (Second Agricultural Development and Credit Project), and Moldova (Agriculture Competitiveness Project), afford a rich source of information for project design. Under the Agribusiness and Marketing project, for example, it allowed achieving increased sales in the participating agribusinesses by 114 percent, and increase in sales by 107 percent. As noted in the Implementation Completion Report for the Moldova project, "financial support to farmers is optimized when used in conjunction with advisory and business development services". The tested approach is reflected in the IDPIP project design through providing assistance to the farmers through a combination of access to information, knowledge, financing, necessary services, as well as strengthening the public and private sector linkages through a PPD platform.

(ii) ***Value chain development is found to be more effective when support is provided in a coordinated manner at different points along the value chain, at the production, processing, and trading levels.*** This is ensured through the comprehensive approach taken by KSDSP, which includes support to the processors and exporters, and the measures for milk quality and quantity improvement at the farm level to be supported under IDPIP.

(iii) ***Support for awareness raising among public officials by business sector representatives is important to achieve greater impact at the regulatory level.*** Citizen engagement is crucial to ensure efficient dialogue between the public and private sectors, as shown by the ongoing activities assisting the Government of the Kyrgyz Republic with the introduction of the business feedback

mechanism with major inspectorates. These activities will be supported by the project under the PPD platform.

(iv) ***A Community-Support Approach in agri-rural projects contributes to a high likelihood of project success***. By fostering a strong sense of community among potential beneficiaries through the mechanism of the Community Seed Funds (CSFs) and Self-Help Groups (SHGs), the project was able to engender a high level of interest for participation in project activities among the farming community. Working in communities, members benefited from each other's knowledge and experiences which contributed to improving their farming practices and thereby agricultural productivity. Similarly, IPDIP is also following the group-based approach in working with farmers.

(v) ***Women participation in projects improves prospects of project success, and require tailored approach to address their needs***. Among all activities under the project, the SHGs comprising mostly women were very successful. The women exhibited a strong sense of common purpose and commitment and worked closely to ensure successful implementation of SHG activities. Their group ethos was much stronger than that of CSF members (largely male). Their determination for success and can-do attitude and spirit of cooperation was infectious, bringing an increasing number of beneficiaries into the fold of the project. To address the women-specific needs, for example, the project introduced biological pest control, as vegetable production took place in the household backyards, and children had access to it. The IDPIP also takes this approach by, for example, ensuring that veterinary and other service providers are open for business during the times convenient for the female beneficiaries of the project.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

25. **The Ministry of Agriculture, Food Industry and Melioration (MOAFIMM) and the Ministry of Finance (MOF) will be the Implementing Agencies for the project**. Both Ministries have prior extensive experience with implementation of Bank-financed projects.

26. **At the implementing unit level, the Agribusiness Competitiveness Center (ABCC) reporting to MOAFIM, and the Credit Line Management Unit (CLMU) at MOF would be responsible for implementation of the technical assistance, and Revolving Fund activities, respectively**. Both implementing units have extensive experience in implementing Bank-financed projects. The technical assistance activities (Components 1 and 2) would be implemented through ABCC, which has been successfully implementing technical assistance activities in the agriculture sector in three Bank-financed projects (Agribusiness and Marketing Project, Agricultural Productivity Assistance Project, and the JSDF-financed Support to the Community Seed Funds Project). The Revolving Fund for farmers, farmer associations, agro-processors and traders would be managed by the CLMU which has successfully managed credit lines in three previous Bank-financed projects (Rural Finance II Project, Agribusiness and Marketing Project, and Agricultural Productivity Assistance Project). Similar to the previous projects, procurement functions for the proposed project would be carried out by ABCC and the overall Financial Management would be the responsibility of CLMU. Safeguards support would be the responsibility of the ABCC. ABCC

would also open a regional office in Issyk-Kul, where the technical staff and Environmental Specialist would be located. Both PMUs, in particular ABCC, would closely liaise with the other projects under the KDSDP, to ensure that all necessary activities are implemented, and no duplications occur.

27. **A Steering Committee would be set up to provide strategic guidance for project implementation, as well as ensure that key issues that need to be resolved are brought to the attention of the Government and their resolution facilitated**. The Steering Committee would consist of representatives of the Prime Minister's Office, MOAFIM, Ministry of Economy, MOF, Issyk-Kul Region Governor's Office, and private sector representatives.

28. **The project will draw extensively on the experience of the local consulting industry**. A local consulting firm with selected key international expertise in dairy sector development, in particular, in working with farmers to improve on-farm productivity and milk quality, would be contracted under the project to support project implementation. The consultants would have the following main responsibilities: (i) identify the locations for the service points for the Dairy Model Villages (Component 2); (ii) support the establishment of the service points (Component 2); (iii) provide training-of-trainers to local consulting companies that would train farmers in the project area (Component 2); (iv) provide advisory services to individual larger farmers; or groups of farmers, on specific areas related to the improvement of milk quality and quantity on beneficiary farms (Component 2); and, (v) assist ABCC in coordinating the project activities with other activities of the program financed by other donors (Component 1 and Component 4). To ensure outreach to farmers, training and advisory services on the ground, local consulting companies and/or NGOs would be hired under Component 2. Finally, a local consulting company or NGO experienced in group mobilization and group lending arrangements would be hired to provide the necessary training to the groups of beneficiaries of the Revolving Fund, as well as help with ensuring collection of repayments due to the Revolving Fund (Component 3).

B. Results Monitoring and Evaluation

29. **Monitoring and Evaluation will be conducted at two levels: (i) monitoring of the project's progress and results; (ii) independent assessment of the project's results**.

(i) *Results Monitoring*. A Baseline Survey is expected to be completed under an ECAPDEV Preparation Grant. Monitoring of the progress of implementation of the project activities will be carried out by the respective PMUs: ABCC for Components 1 and 2, and CLMU for Component 3. The results of the monitoring will be reflected in quarterly progress reports to be submitted to the GOK and the World Bank. As part of the monitoring activities, potential issues such as (i) elite capture, (ii) ethnic capture, and (iii) gender discrimination would also be monitored. In addition to the indicators reflected in Annex 1, the project will track other relevant indicators, including the project's and program's impact on household incomes and jobs/employment creation, "better", and/or "more" jobs/employment, as well as inclusivity, i.e., the jobs/employment created for women and youth.

(ii) *Results Assessment*/*Survey.* An independent results assessment would be carried out at the end of the project, by an independent consulting firm. Interviews with selected beneficiaries would

be conducted to assess the results of the project on the ground as well as establish any cases of: (i) elite capture, (ii) ethnic capture, and (iii) gender discrimination.

30. **M&E of project activities would be carried out during the regular (semi-annual) implementation support missions by the project team at the World Bank**.

C. Sustainability

31. **All project activities are designed to enhance the capacity and incentives of dairy farmers in Issyk-Kul Region to connect to the dairy value chain – during and after project implementation**. Small-scale farmers would be equipped with knowledge, skills and the organizational infrastructure to actively engage in the value chain, and would have access to the capital required for investment to upgrade their activities in the dairy sector. Equally, processors and traders working in the dairy value chain would have an opportunity to receive advice and support to obtain funding from the financial sector, which will complement the advisory and technical assistance activities provided by the CAAP- supported activities. The agribusiness firms selected through these efforts to catalyze growth of the dairy value chains would have a demonstrated commitment to value chain development. Farmer incentives to use this transfer of knowledge and capital sustainably would also be increased by the project's emphasis on demand-driven investment and the requirement for beneficiary co-financing, which is expected to improve ownership and commitment to successful commercial outcomes. The project will also seek to improve environmental sustainability of the livestock production in the Issyk-Kul Region by reducing the associated green-house gas (GHG) emissions. Project support to all agents in the value chain would be based on these principles.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

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

32. **The overall risk for the operation is assessed as Moderate**. The country-related risks are rated as Substantial due to the current economic volatility influenced by downward pressure on

the currency and regional headwinds. Sector risks and policies are rated as Moderate. The government, through its policies, is facilitating private sector development, which forms the basis for this project. Agribusiness sector development is a declared priority of the government, and the support for KDSDP activities - at the national, regional (Issyk-Kul Region) and local aiyl okmoty level - has been substantial. All project design and implementation-related risks are also rated as Moderate. Fiduciary risks are rated as Substantial, on account of the Procurement-related risks which are rated as Substantial whereas Financial Management-related risks are rated as Moderate. The Implementing Agencies (MOF and MOAFIM), and the Implementing Units have extensive experience in implementing World Bank financed project and extensive knowledge of the agricultural sector.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

33. **The economic analysis has been undertaken by estimating the ERR for the entire value chain, and the income generated within a reasonable time-frame vs. the total costs of the project.** The proposed project is expected to generate jobs along the dairy value chain, increased sales and income at the producer and agro-processor level, as well as increased export revenues for the country. The Revolving Fund is expected to come back in reflows to the MOF in accordance with the repayment schedule. The other costs – TA, training, demonstrations, – have been treated as long-term investment in sector development, which would be repaid over time from increased sales, incomes and jobs generated in the dairy sub-sector. The analysis also uses dairy farm budgets, estimating the increases in income at the farm level. The project may also serve as a pilot value chain demonstration activity, setting a precedent, which can then be replicated (in this or other sub-sectors) in other parts of the country, encouraging economic development.

34. **Expected Benefits.** The analysis attempts to identify quantifiable benefits directly related to the increased milk productivity of cows in the region or that can be attributed to the project's implementation. The financial and economic analysis of the project is based on the expectation that, during the Phase I, the average milk yield per household will be increased by 15 percent. This assumption reflects increases of milk production in the Issyk-Kul region of the country. The scenario presented in the analysis is conservative and based on conditions prevailing at the time of project preparation.

35. **Financial Analysis**. In order to estimate the economic benefits of the increase of production of milk, a financial model presenting milk yield increase by 15 percent per household was developed for the Phase I. This model includes revenues, operating costs and the calculation of gross margins “before” and “after” the implementation of the project. The model shows that the financial benefit from the increased milk yield is US$81.6 per cow per year, expressed in the form of increased financial margin of milk production. The analysis was based on the assumption that the farm gate price of fresh milk will be 12.5 soms/liter in summer and 18.5 soms /liter in winter. There was a steady increase in the number of cows from 91.4 thousand to 106.4 thousand heads[10] over the period 2010- 2014. The number of cows has grown at an accelerated rate over the past

[10] As of year-end.

five years (from 1.1 percent in 2010 to 5.6 percent in 2014) and averaged 3.3 percent[11] per year. The projection of the number of cows in the region over the next eight years, including a six-year period of the project, is developed as part of this analysis. The forecast is based on a conservative estimate of the growth rate of the number of dairy cows number at 2.3 percent[12] per year. According to the forecast, by the end of the project (2021) the number of dairy cows in the region will be increased by about 12 percent, i.e. it will reach 127.3 thousand heads. It is estimated that the share of milking cows in the project area in the total number of cows is 60 percent. Thus, in the first year of the project there will be about 68.1 thousand heads of milking cows. It is expected that by the end of the project implementation there will be about 76.4 thousand of milking cows, out of which about 60 percent will increase milking productivity by 15 percent. Over the past five years, the average milk yield in the Issyk-Kul region varied from 2.06 to 2.08 tons/cow. It is assumed that due to the project activities, milk production of 30 percent of the milking cows in the region will be increased by 15 percent and will reach 2.4 tons/cow.

36. **Economic Analysis** was conducted: (i) for Phase I, on the basis of the above data, as well as (ii) for the entire program cost of US$25 million, with a 6-year duration and potential milk yield increase of 25 percent. The result for Phase I (US$5 million total cost) with the milk yield increase of 15 percent in three years is a very high ERR of about 44 percent.[13] The ERR for the entire 6-year program (Phases I and II) with US$25 million of total cost and with the milk yield increase of 25 percent, is estimated around 17 percent. The economic NPV for Phase I is positive and amounts to around US$1.6 million. The planning horizon of 15 years was selected to allow for the long-term benefits of the project. A discount rate of 6 percent was used. As the above economic analysis has showed, the project has a good economic return and the investment would be well justified from the economic point of view.

37. **Sensitivity analysis.** Economic returns were tested against changes in benefits and costs and for various lags in the realization of benefits. In relative terms, the ERR is equally sensitive to changes in costs and in benefits. In absolute terms, these changes do not have a significant impact on the ERR, and the economic viability is not threatened by either a 10 percent decline in benefits or by a 10 percent increase in costs. A one-year delay in project implementation will reduce the base ERR to about 6.6 percent. The project is quite sensitive to the reduction of milk yields. For example, an increase in the milk yield by only 10 percent (not 15 percent as expected), would make the ERR drop to 2.7 percent, and the project would no longer be acceptable from the economic point of view. To avoid this risk and ensure achievement of the planned milk yield increase, the project provides a comprehensive set of measures, not just selected few measures. A significant reduction in the number of milking cows would also make the project unacceptable from the economic point of view.

[11] The statistics on the number of cows as of at the end of the year 2015 is delayed, and an estimate of the growth of number of cows in 2015 has therefore been made. Particularly it was based on the average growth in the number of cows in the last three years (2012-2014 years), which amounted to 4.3 percent.

[12] Calculated on the basis of growth in the total number of cows in the Kyrgyz Republic for the last five years.

[13] The high ERR for Phase I is explained by the relatively high number of cows reached and the relatively high milk yield increase, against the relatively low investment cost, a large portion of which is Revolving Fund. The scale-up program also included public sector investment, which reduces the overall ERR, but also allows to reach a much larger number of animals.

B. Technical

38. **The proposed project is technically sound as its design takes into full consideration the technological, operational, and institutional barriers that currently restrict dairy development in the country and the project area.** Based on a comprehensive assessment of the highly informative baseline developed during preparation, project design has addressed all major technical variables, while adopting a reasonable and realistic approach in terms of productive targets. The main pillars supporting the technical soundness of the project are as follows:

(i) **the adoption of a value chain approach**, linking the expected productive growth at farm-level with market potential and the participation of the processors is a key element which should be further strengthened by the World Bank's partnership with IFC and complementarity with other activities under KDSDP;

(ii) **the focus on small-scale dairy farmers**, both in terms of the identification and promotion of agro-climatically appropriate technologies, as well as the understanding of the prevailing socio-economic conditions of the beneficiaries, in particular the role of dairy farming in the household economy;

(iii) **the provision of an integrated support package** to beneficiaries, combining intensive and training and technical assistance with practical demonstrations and financial support –in the form of a sustainable Revolving Fund - for beneficiaries to acquire demand-driven technologies;

(iv) **the use of a proven implementation model** (fully described in a detailed Project Operational Manual) which replicates and adapts the successful results achieved with similar beneficiaries by other World Bank-supported interventions in rural areas of the country;

(v) **applying a phased approach**, which gradually incorporates the key technological packages for improved production (animal feed and nutrition, herd management and husbandry, health, reproduction, etc.) but also addresses the need for a balanced improvement of the public goods required to develop a sustainable dairy sector; and

(vi) **an effective fiduciary support system**, delivered by the Implementing Units with staff experienced in procurement and financial management, as well as safeguards and M&E.

39. **Revolving Fund**. The modalities of operation of the Revolving Fund were presented for OP10.0 FIL compliance review. Given that the operations of the Revolving Fund are proposed outside the formal financial sector (the arrangement involves a Servicing Bank which does not assume any credit risk), it was deemed that the OP10.0 FIL compliance review is not required.

C. Financial Management

40. **Financial Management (FM) arrangements for the project, including budgeting and planning, internal control procedures, staffing of the FM function, are adequate**. The overall FM of the project will be the responsibility of the CLMU. ABCC's Financial Manager will carry out financial management for the ABCC. The project's FM assessment established that the FM arrangements existing in both agencies meet World Bank requirements, especially taking into account their significant past experience in implementation of Bank funded projects, adequate FM staffing and documentation of the FM arrangements in the Project Operational Manuals (POM) for recent Bank projects, which will be slightly modified to meet specific requirements of the Project. With respect to accounting and reporting, it has been agreed that both agencies will use systems based on existing accounting software, which should be also modified for accounting and

financial reporting purposes of the proposed project. The accounting software will be designed to meet World Bank-financed projects requirements including ability to generate Interim Financial Reports (IFR), withdrawal applications, Statements of Expenditure (SOE), and annual financial statements. Annual audits of project financial statements will be provided to the Bank within six months after the end of each fiscal year as well as at project closure. The Borrower has agreed to disclose the audit reports for the project within one month of their receipt from the auditors, by posting the reports on websites of both implementing agencies. Following the Bank's formal receipt of these reports from the Borrower, the Bank will make them publicly available in accordance with World Bank Policy on Access to Information. As part of project implementation support and supervision missions, quarterly IFRs will be reviewed and regular risk-based FM missions will be conducted. More details on FM arrangements are provided in Annexes 3 and 4. The overall FM risk is assessed as Moderate.

D. Procurement

41. **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 the PPD will become a regulatory body for public procurement. The Bank is supporting the institutional development of the PPD and the complaint review commission, as well as capacity building of all stakeholders. The Government is developing Electronic Government Procurement (e-GP) with the World Bank technical assistance and ADB financing. Detailed procurement arrangements are reflected in Annex 3.

42. **Procurement for the proposed project will 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).

43. **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 will be 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. The overall procurement risk is assessed as Substantial.

E. Social (including Safeguards)

44. **The proposed project is expected to have positive social impact as it aims to strengthen the dairy sector of the Kyrgyz Republic, which is expected to result in greater employment opportunities for the population in the project areas, particularly for rural women and youth**. As the dairy sector is labor-intensive, project activities are expected to result

in creation of new jobs and consequently, greater employment opportunities, including along the value chain, where farmers, processors and finally consumers will experience benefits. Farmers and processors are expected to build partnerships and, thus, expand opportunities for greater knowledge generation and investments for the value chain participants. These new employment opportunities will be particularly welcome at the time when many labor migrants return homes as traditional migrant hosting economies such as Russia and Kazakhstan experience a slowdown. Young people may be encouraged to stay close to home if there are jobs available, instead of migrating to urban centers or abroad in search of employment. The trainings and information sharing under the project will strengthen capacity and knowledge of farmers on innovative farm practices, animal health care management and animal husbandry practices, among others.

45. **The proposed project is expected to provide a number of benefits for women and youth**. Women and youth play marginal roles in both national and local development planning in the Kyrgyz Republic. Across the country, the voices of women and youth are often ignored because they are underrepresented at the national and local levels. According to the Ministry of Social Development statistics, only 4.6 percent of 460 heads of local governments are female. In addition, both women and youth have been adversely affected by rising unemployment. A 2011 study by World Bank found that "women's economic behavior and strategies are complicated by the lack of opportunities for advancement and the [societal] requirement to carry out their traditional family roles." In recent years, unable to find employment at home, thousands of young Kyrgyz men and women have migrated to Kazakhstan and Russia in search of seasonal jobs.

46. **Dairy farming is a labor-intensive industry, and milk collection, animal feed preparation and other activities are expected to generate additional employment and contribute to small business development.** The employment generation and small business activities may encourage young people to stay in the villages and take up farming and generate (additional) income through provision of services (such as grass cutting and foder preparation, shed cleaning, milk collection and testing, etc.). The project will provide direct benefits to women, who tend to be responsible for households activities (animal tending, provision of food and water, cleaning and sanitation).

47. **The project would also include gender informed activities to support inclusion and equality more generally.** Under Component 2, women's groups would be actively involved to provide gender perspective and give voice to women in improving knowledge on good dairy farming practices among beneficiaries. The number of women's groups is low (around 10-20 percent of the total number of groups) in the Kyrgyz Republic, and yet they are active. Under Component 3 (the Revolving Fund), the project would pay particular attention to the involvement of women and youth in determining priorities for their communities, in monitoring and evaluation by communities of project activities to address specific gender related needs. The project will include gender-disaggregated monitoring of the project's beneficiaries. A gender indicator is included in the Results Framework (number of women farmers trained in improved animal husbandry practices).

48. **Citizen engagement and feedback**. The engagement of the beneficiaries in project implementation will be ensured through community participation and communication campaigns. The project includes the following stakeholder engagement activities: (i) national-level

consultations with central government agencies, donor community representatives and civil society organizations; and (ii) local-level consultations with representatives of Local Self-Government bodies, community-based organizations (associations of farmers or dairy producers, neighborhood committees, courts of elderly), and ordinary community members. A citizen engagement indicator is included in the Results Framework - percentage of beneficiaries satisfied with project activities (gender disaggregated).

49. **These information/awareness building and demand-side processes will be supplemented by a GRM covering all aspects of project implementation**. The GRM will include a proactive element through which the counterparts will seek comments from beneficiaries once a year, as well as establishing the system for receiving and processing unsolicited comments/ complaints. The GRM data will be collected, compiled and reported in quarterly reports including an analysis of the different types of complaints. Grievances would be discussed during World Bank implementation support missions, to respond to feedback and adapt project procedures to improve project outcomes. The GRM will be supplemented by a third-party monitoring mechanism (TPM) to be carried out annually under the project.

50. **Involuntary Resettlement:** The OP 4.12 on Involuntary Resettlement was not triggered as no resettlement and/or land acquisition is envisioned under this project.

F. Environment[14] (including Safeguards)

51. **The Environmental Assessment Safeguard Policy (OP/BP4.01) and Pest Management Safeguard Policy (OP 4.09) have been triggered for this project.** The proposed project activities (investments in improving the animal herd; purchasing of inputs and machinery for feed and fodder production; animal shelter improvement; milk collection and cooling equipment; etc.) might generate a series of various environmental and social impacts, associated with biodiversity degradation, noise, dust, air and water pollution, health hazards and labor safety issues, etc. These are typical for small scale construction/rehabilitation works or for various agricultural processing activities, temporary by nature and site specific, and can be easily mitigated by applying best construction and/or agro-processing practices and relevant mitigation measures. The sub-financings to be implemented under the on-farm investments will generate a number of direct and indirect positive impacts. Direct positive impacts will be generated by increased milk production, which would result in creation of new jobs and respectively, and increased incomes. Indirect positive impacts will relate to overall improvement of business environment, introduction of advanced agricultural/dairy technologies, and contribution to poverty reduction and food safety.

52. **In accordance with the Bank's safeguard policies and procedures, the project's Environmental Category is B**. As it was not possible during the appraisal to identify which subproject will be financed, the Borrower prepared an Environmental and Social Management Framework (ESMF) which will guide the project activities EA pprocess. The document provides the World Bank's and national rules and procedures for project Environmental Impacts Assessment (EIA), identifies potential environmental impacts of the project (both positive and negative), and outlines rules and procedure for the sub-projects environmental screening,

[14] See Annex 3 on Implementation Arrangement for more details on the ESMF framework and implementation arrangements.

specifying appropriate preventive actions and mitigation measures (including appropriate monitoring plan) to prevent, eliminate or minimize any anticipated adverse impacts on environment. The ESMF also suggests a series of environmental issues to be included in the proposed project TA activities - training, preparing and disseminating guidebooks and implementing demonstrational activities on the following: (i) education of veterinary specialists on managing sector environmental and social impacts; (ii) sound manure management; (iii) silage production and measures to ensure appropriate handling and disposal of the "silage liquor"; (iv) promoting Integrated Pest Management while producing fodder and usage of acaricides in livestock production; and (v) TA activities for the NGO responsible for group mobilization activities on conducting EA of selected subprojects. The ESMF Environmental Guidelines provide rules and procedures for EA of selected financings provided under the Revolving Fund, as well as on preparing an EMP and/or an EMP Checklist which should be disclosed and consulted as well as submitted to the State Ecological Expertise for their review and approval. Lastly, the ESMF provides a set of training activities to strengthen the project environmental performance.

53. **GHG Accounting for Agricultural Projects** exercise was carried out for this project**.** Below is the summary of results obtained; full information is included in Annex 7: (i) *Net carbon balance***.** The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the without project scenario. Over the project duration of 20 years, the project constitutes a carbon source of 1,212,546 t-CO2-eq. Per hectare, the project provides a source of 5 t-CO2-eq, which is 0.2 t-CO2-eq each year. (ii) *Carbon sources and sinks*. The main carbon sources are primarily from increased number of dairy cattle and increased fertilizer use on pastoral lands. Improved grasslands and land use change will lead to increased carbon sequestration. (iii) *Emissions intensity*. In terms of emissions intensity, the introduction of improved livestock management practices to 60 percent of livestock is estimated to decreased emissions intensity from 18.1kg-CO2/kg of milk to 15.5kg-CO2/kg of milk.

G. Other Safeguards Policies Triggered

54. No other safeguard policies have been triggered.

H. World Bank Grievance Redress

55. 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: Integrated Dairy Productivity Improvement Project (P155412)

Results Framework

Project Development Objectives

PDO Statement

The Development Objective of the Project it to enhance dairy animal productivity and milk quality on beneficiary farms.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Baseline[15]	Cumulative Target Values			
		YR1	YR2	YR3	End Target
Increase in the average lactation period milk yield per cow in the beneficiary farms (Percentage)	0.00 (2013 kg; GOK data, 2013)	5.00	10.00	15.00	15.00
Direct project beneficiaries (Number) (Core)	0.00	4,000 HH	8,000 HH	12,000 HH	12,000 HH

[15] The Baseline will be established during the Baseline Survey.

Direct Female beneficiaries (Percentage Sub-Type: Supplemental) (Core)	0.00	50.00	55.00	60.00	60.00
Direct Youth (18 – 29 years old) beneficiaries (Percentage)	0.00	5.0	7.00	10.00	10.00
Dairy producers have adopted improved animal feeding, health, breeding, and management practices (Percentage)	0.00	20.00	30.00	40.00	40.00
Percentage of the milk produced on the participating farms meets or exceeds processor quality requirements (Percentage)	0.00	20.00	30.00	40.00	40.00

Intermediate Results Indicators

		Cumulative Target Values			
Indicator Name	Baseline	YR1	YR2	YR3	End Target
Increase in the average milk output per household in the beneficiary farms (Percentage)	0.00 (2627 kg per year per HH)	0.00	5.00	10.00	10.00
Dairy producers have adopted improved animal feeding, and/or health, and/or breeding, and/or management practices (Percentage)	0.00	20.00	30.00	40.00	40.00

Percentage of male beneficiaries satisfied with project activities	0.00	50.00	70.00	90.00	90.00
Percentage of female beneficiaries satisfied with project activities	0.00	50.00	70.00	90.00	90.00
The operational PPD platform is created at the regional administration	no	no	yes	yes	yes
Number of service points of MDVs created	0.00	0.00	20.00	30.00	30.00
Clients who have adopted an improved agricultural technology promoted by the project (Number) (Core)	0.00	1,200	2,700	4,800	4,800
Clients who adopted an improved agricultural technology promoted by the project – Female (Number - Sub-Type: Breakdown) - (Core)	0.00	600	1,485	2,880	2,880
Number of women farmers trained in improved animal husbandry practices	0.00	3,000	4,950	7,200	7,200
Number of beneficiaries who received sub-financing from the Revolving Fund	0	200	800	1,500	1,500

Repayment of sub-financing (percentage)	0.00	80.00	90.00	95.00	95.00
Grievances registered related to delivery of project benefits that are actually addressed (Percentage) (Core)	0.00	100	100	100	100

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Increase in the average lactation period milk yield per cow in the beneficiary farms (Percentage)	Standard lactation period yield of individual cow on the beneficiary farm.	Annual	Baseline of the specific beneficiaries will be recorded as they enter the project. Percentage increase will be measured on annual basis through a beneficiary survey. Sample test day milk recording of individual cow	ABCC
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention. Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Semi-annual	Progress reports	ABCC and CLMU
Direct female beneficiaries (Percentage Sub-Type: Supplemental) (Core)	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Semi-annual	Progress Reports	ABCC and CLMU
Direct youth (18-29) beneficiaries (Percentage)	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are youth.	Semi-annual	Progress Reports	ABCC and CLMU
Percentage of the milk produced on the participating farms meets or exceeds	Two types of quality assessment – Standard Plate Count and Somatic Cell Count readings on a defined period, tested at collection points – will be used as a result for this indicator	Quarterly	Baseline of the specific beneficiaries will be recorded as they enter the project. Percentage increase will be	Processing companies

processor quality requirements			measured through a processor / milk collection agent survey. Sample testing by the processing companies	

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Increase in the average milk output per household in the beneficiary farms (Percentage)	Overall farm milk output including household consumption of the farm	Annual	Baseline of the specific beneficiaries will be recorded as they enter the project. Sample farm household survey.	ABCC
Percent of dairy producers who have adopted improved animal feeding, and/or health, and/or breeding, and/or management practices	Documentation of adoption of specific husbandry practices demonstrated through training sessions. Adoption of even one practice – feeding/ breeding/ health & hygiene/ management considered as adoption.	Semi-annual	Farm survey	ABCC
Percentage of male beneficiaries satisfied with project activities	The indicator measures to what extent the project addresses the needs of male project beneficiaries.	Annual	Beneficiary survey	ABCC and CLMU
Percentage of female beneficiaries satisfied with project activities	The indicator measures to what extent the project addresses the needs of female project beneficiaries.	Annual	Beneficiary survey	ABCC and CLMU
The operational PPD platform is created at the regional administration	The regional administrative platform for efficient dialogue on development of sector between private and public sectors in Issyk-Kul is created.	Semi-annual	Progress Reports	ABCC
Number of service points of MDVs created	Model Dairy Village (MDV) includes a milk collection point, a veterinary doctor/services point, an AI services point, a service center	Semi-annual	Progress Reports	ABCC

	providing access to inputs, medications, farm equipment, training, etc. The indicator measures progress of the establishment of the key service points in the various villages of Issyk-Kul.			
Clients who have adopted an improved agricultural technology promoted by the project (Number) (Core)	This indicator measures the number of clients of the project who have adopted an improved agricultural technology promoted by the project.	Semi-annual	Progress Reports	ABCC
Clients who adopted an improved agricultural technology promoted by the project – Female (Number - Sub-Type: Breakdown) - (Core)	This indicator measures the number of female clients of the project who have adopted an improved agricultural technology promoted by the project.	Semi-annual	Progress Reports	ABCC
Number of women farmers trained in improved animal husbandry practices	This indicator measures the number of female famers trained in improved animal husbandry practices.	Semi-annual	Progress Reports	ABCC
Number of beneficiaries who received financing from the Revolving Fund	This indicator measures the number of beneficiaries in the project area receiving sub-financing from the Revolving Fund. The beneficiaries will be able to receive the Revolving Fund after the necessary training.	Semi-annual	Progress Reports	CLMU
Repayment of sub-financing (percentage)	Amounts collected during a certain time period, minus prepayments; divided by the amounts due during the same period. Will be calculated at the end of the annual period, based on the repayments transferred to the group accounts with the financial institution.	Semi-annual	Progress Reports	CLMU
Grievances registered related to delivery of project benefits	This indicator measures the transparency and accountability mechanisms established by the project so the target beneficiaries have trust in	Semi-annual	Progress Reports	ABCC

that are actually addressed (Percentage) (Core)	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.			

Annex 2: Detailed Project Description

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

1. The proposed Project (Phases I and II) would contribute to the implementation of the overall KDSDP, by supporting the necessary public investments: the AI services and breeding infrastructure, cattle identification and registration, but also farmer training and advice, and providing a small Revolving Fund Facility to support on-farm investments. The project is built on the following strategic elements:

(i) The project is part of a larger KSDS Program, financed by a number of donors, - that adopts an integrated/holistic approach to improved productivity and performance of the dairy value chain in the project area.

(ii) Complementarity of all project activities under the larger program would be ensured: improvement of the main livestock-related public goods (zoning, identification, registration, disease surveillance, AI, etc.), as well as access to financing, would ensure effective and sustainable improvement of dairy productivity at the farm level.

(iii) Entry points. The project would ensure outreach to farmers in the following ways:

- Work with farmers already linked to a milk collection point and/or processor who will act as facilitators for training, dissemination of inputs and knowledge, etc.
- Through the existing interested groups such as Self-Help Groups (SHG), Community Seed Funds (CSF), Cooperatives, etc. The groups would be supported so that they can re-organize / merge / expanded towards an economically viable level. These groups would be linked to the milk processors of the Issyk-Kul region through formal agreements.

(iv) The primary intervention unit would be individual villages where the provision of private services (training, technical assistance, and demonstration for improved feeding, animal health, breeding and husbandry, input supply, on-farm investments, and marketing, etc.) to household groups and small/medium dairy farmers would be supported, with the aim of, ultimately developing Model Dairy Villages (MDVs).[16]

(v) The project's main target of productivity improvement would be achieved, firstly, by increased the milk yield per animal. Ultimately, it is expected that farmers will also increase the number of milking animals on farm.

(vi) Improved feeding would be the main pillar of the project's strategy, with specific elements to address the dramatic differences in seasonal conditions, together with a series of breeding and

[16] A "template" Model Dairy Village" includes: a milk collection point, a veterinary doctor/services point, an AI services point, a service center providing access to inputs, medications, farm equipment, training, etc. Such DMV can cover one (sufficiently large) village, or several smaller villages. Financial sustainability of the services provided would be ensured. This has been be explored during the further project preparation in collaboration with other donors and private sector players.

husbandry improvement measures to maximize the milk production potential of the region. Through improved feeding methods (cultivated annual and perennial forage production, seasonal supplementation, and differentiated management of dairy herd categories), the target of higher number of milking animals would be achieved while reducing the pressure on natural mountain pastures.

(vii) Consistent with the phased financing structure, the project would adopt a modular approach to on-farm interventions. While the initial focus is on improving the public good elements of the strategy, the first phase would implement the field level interventions on a pilot basis in selected villages, to be expanded to all villages in the project area during the second phase based on the results and lessons learned of the first phase.

Overall IDPIP (Phases I and II)

Component 1: Strengthening Public and Private Services in the Dairy Sector

2. This component would contribute to the PDO by improving the public-private dialogue on private sector development issues, and traceability and health of the animals as well as by supporting the improvements in the breed stock of the dairy cows. Among other things, this component would address the issues of deteriorating genetic quality of the dairy animal population and ensuring animal health and traceability in the Issyk-Kul region. The expected outputs of this component would be improved public-private dialogue, genetic improvement in the dairy cattle population, and ensuring traceability of the animals and animal products in order to fulfil the export requirements. Further this component would help the ongoing efforts of the Government in disease free zoning, OIE accreditation and finally export promotion of dairy and other livestock products from this region. The component would consist of the following four subcomponents:

Sub-component 1.A: Improving the Public-Private Dialogue[17]

3. Agriculture sector development requires intensive work with small farmers, who usually do not have appropriate access to information, cannot participate in policy decision-making, and cannot always promote their interests with the public authorities. In many cases, collective efforts of local communities are needed to improve production processes and infrastructure (e.g., installation and use of cooling tanks) and engage in dialogue about policy-making in the sector. However, regions of the Kyrgyz Republic do not fully possess the capacity, resources, and institutional strength to support a platform for such stakeholder dialogue. There is a crucial need for flexible and multi-faceted mechanisms to facilitate productive private sector participation in the project cycle.

4. The Sub-component would facilitate the creation and implementation of a well-structured and organized PPD platform that would help build capacity and ensure coordination between all stakeholders, especially small and unorganized farmers, and ensure that these stakeholders are involved in all projects activities. The role of this platform would be to facilitate a broad based reform discussion among key government agencies and private sector representatives.

[17] This sub-component complements activities carried out by IFC.

5. The proposed sub-component aims to improve the quality and sustainability of policy reforms by providing flexible and robust mechanisms that address shortfalls in representation, communication, and coordination between relevant stakeholders, and would finance the following:

- technical assistance in strategic communication, development of the necessary documents about the reforms;
- organizing inclusive dialogue process, involving key business associations, entrepreneurs, regional government bodies, regional governors and development partners.;
- capacity building for the regional governor's office and PPD Secretariat to facilitate all necessary reforms implementation;
- development and implementation of the outreach campaign to ensure strong awareness about the PPD mechanism and agri-sector reforms among farmers; in order to disseminate and keep stakeholders involved, communication materials would be prepared to describe the project and the reforms and distributed to the relevant stakeholders.

6. The project would build on the existing platform in Issyk-Kul region and the national Council on Business Development and Investments.

Sub-component 1.B: Support to Animal Identification and Registration

7. The Sub-component will complement the national efforts to establish an animal identification and registration system by supporting identification and registration of about 220,000 heads of cattle in the Issyk-Kul Region. The project will finance the tags, tagging, about 300 smartphones for the identifiers, and training of the veterinarians to enter the information in the database.

8. To date, the National Animal Identification and Registration Software has been developed by a French company hired under the respective FAO project. Some 38 people were trained on using the software but the functionality of software has not been fully tested yet. Few local staff have been running through the software and sending the identified bugs to the developers in France. Actual use of the software in practice may reveal more things that need to be fixed or redesigned. However, lack of additional funding experienced by FAO for the pilot testing stage left the "software project" at incomplete stage.

9. Targeted trainings and awareness camping will be conducted for the farmers. Assistance of Local Village Administration and District Veterinary Inspection will be sought in effective implementation of this activity.

Sub-component 1.C: Establishment of an OIE-certified Zone Free of Animal Diseases

10. Ultimately, the project aims to establish an OIE-certified Zone Free of Animal Diseases (with a focus on FMD control in the initial phase). As part of this aim, the project will assist with a set of measures towards this goal, including the establishment and operation of animal movement control posts, animal quarantine and preliminary disease investigation facilities at three (3) strategic cattle exit/entry points within Issyk-Kul Region, and other complementary measures (digitalized animal traceability system, issuance of animal passport, vaccinations, etc.) to be defined during project design. The project would assist with a set of measures towards this goal,

including the legal framework for three strategic cattle exit/entry points in Issyk-Kul Region, and other necessary measures. The physical investment (the facilities, equipment and operational costs related to the establishment of the three veterinary posts and the quarantine facilities) will be financed under the project. The Issyk-Kul office of the State Veterinary Inspection (SVI) and the Issyk-Kul Province administration would put in place necessary policies and regulations for monitoring the movement of animals into Issyk-Kul province. The Issyk-Kul office of the SVI would provide required staff to manage the check posts on a continuous basis.

Sub-component 1.D: Support to Artificial Insemination (AI) Service Providers

11. ***Establishment of Regional AI input delivery system for the AI points:*** There is a gap between AI points and the Regional distribution office in terms of receiving AI inputs in time. The Regional AI office does not have sufficient infrastructure to deliver required AI inputs (frozen semen, liquid nitrogen and other AI consumables) as and when required by the AI centres. The project envisages fulfilling this gap. The regional HQ in Karakol or a central point decided by the government would be equipped with a liquid nitrogen plant, jumbo semen storage tank, liquid nitrogen silo, and transportation vehicle with a small tanker for semen and liquid nitrogen delivery. The project would also import good quality frozen semen (around 20000 semen straws) of Brown Swiss breed which could help in outcrossing the genetically deteriorating Ala-Tau population with an objective to improve milk production. Around 10,000 cows would be targeted under this genetic upgrade program. It is expected that the Government would second the required personnel to implement the AI delivery system in Issyk-Kul. Mechanisms would be worked out to self-sustain the entire operation over a period of time.

12. ***Establishment of additional 20 AI centres in three districts of Issyk-Kul*****:** In addition to the existing AI points, the project plans to add another 20 AI centres in remote areas in order to promote AI coverage. The strategic locations for the AI centres would be decided in consultation with Farmers' groups, processing companies and regional breeding organization. The AI centres would be equipped with AI equipment, liquid nitrogen containers, frozen semen and other consumables. Local youth from the AI centre area will be selected and provided necessary training to perform AI on door to door basis.

Component 2: On-farm Productivity Enhancement

13. The objective of this component would be to achieve overall productivity enhancements in the small holder dairy farms which would lead to increase in household incomes. This component would improve knowledge on good dairy farming practices among direct and indirect beneficiaries, including through demonstrations, and facilitate the adoption of necessary inputs, services and equipment in a timely manner, feed and fodder management plan, breeding and animal health care services and better market linkage with the processors. These activities would mostly focus on small and household farms. The project also envisages utilizing the farmers' groups promoted under other projects such as SHGs, CSFs, Co-operatives, and the groups formed by the milk processors. The entry point for the project would be the milk collection agents at the milk cooling points established by the milk processing companies and the existing farmers' groups. Milk collection agents and dairy processing companies would be encouraged to organize farmers' groups and the existing farmers' groups would be supported so that they can be consolidated

towards an economically viable level and further linked to the processors. The Project would leverage CAAP's work with business farms (which has started in January 2015 and will include demonstrations of good practices), replicate the suitable methodologies, and use the (larger) business farms as demonstration farms to entice the households and smaller farms to adopt the good practices. Component implementation will be supported by three key pillars:

(i) **Initiating the concept of Model Dairy Villages (MDVs)**. Such Model Dairy Village includes: a milk collection point, a veterinary doctor/services point, an AI services point, a service center providing access to inputs, medications, farm equipment, training, etc. The activities financed under the project will initiate of the establishment of the key service points in the various villages of the Region. The work would be done in collaboration with other donors and private sector players.

(ii) **Model / Demonstration farms**: Model / demonstration smallholder dairy farms (with 3-5 dairy animals) would be developed by promoting selected "lead" farms in each of the existing smallholder dairy farmers' group. The group would decide on the selection of lead farmers among the group members. The selected lead farmers would be provided with input assistance and infrastructure to develop his / her farm into a model farm. The model farm would demonstrate improved housing management, fodder production, silage preparation, best feeding practices, planned breeding (oestrous synchronization), reproductive and animal health care management, calf and heifer management, clean milk production, manure management, record maintenance and tracking farm economic performance on a regular basis. This whole set of good dairy farming practices would constitute training contents for the farmers' training program. These demonstration farms would be used as Livestock Field Schools (LFS) for the continued provision of training to the farmers in the village.

(iii) **Farmer training**: The training would be held in the village itself utilizing the demonstration farm platforms. The Livestock Field School (LFS) concept would be used for farmers' training on a continued basis. A local consulting company or NGO with experience in conducting participatory farmers' training would be engaged as a service provider to conduct the training program. For each of the farmers' group, a series of 10 one day training sessions would be held covering different topics. During the training, a review would be held with trainees on the level of adoption of practices demonstrated during the previous sessions and issues related to adoption of good practices. The farmers' group would be motivated to work out solutions for the adoption issues as a group activity. Field days would be organized to orient large number of farmers on the adoption success. The consulting company/NGO would document the whole training process and, at the end, would show the adoption levels, productivity improvements, issues in adoption and how the issues were resolved.

14. The four pillars of the component will be instrumental for the implementation of activities categorized in the following subcomponents:

<u>Sub-component 2.A: Fodder production and feeding management</u>

15. The component would facilitate and make available knowledge and training for eligible groups of dairy farmers to improve the nutritional condition of their herds throughout the year,

with emphasis on the winter season. A series of demonstrations will be organized, supported by a broad training program, to ensure that the farmers have access to the necessary knowledge to improve on-farm milk quality and quantity. Project will provide financial support to demonstrations and finance purchase of quality forage/pasture seeds, inputs, equipment for training and demonstrations to support farmers in feed and fodder development and fodder preservation activities (Revolving Fund under Component 3 will provide access to finance for farmers to procure these much-needed high quality inputs). The support would also include the development of feeding programs focused on optimizing the use of existing forage resources as well as incorporating additional sources of higher nutritional value. Training activities related to high quality fodder production, hay and silage production and preparation, improved feeding practices (production-based balanced feeding), access to pre-formulated concentrate feed and mineral supplements. The main strategy for implementation of this subcomponent involves the establishment of differential feeding methods, ingredients and management adapted to the requirements of the different categories of the dairy herd (milking cows, dry cows, heifers, fattening bulls, male and female calves, etc.) and taking into consideration the seasonal variations in feed and forage availability.

16. The system to be promoted by the project among smallholder dairy farmers would be based on a combination of (i) improving the existing forage base (mainly mountain pastures for summer grazing); (ii) establishment of on farm improved pastures; (iii) production of winter fodder (pasture hay and crop silage); and, (iv) use of complementary feed and supplements for lactating cows and selected herd categories. A number of demonstration farms would be established for practical training and dissemination of results of improved practices where the project would support, on matching grant basis, demonstrations of sound practices. Demonstration farm/households would share the results achieved with farmers and other interested parties, to disseminate good practices.

17. Regarding the improvement of the existing forage base, on farm training would be provided on improved agronomical practices related to fodder production, conservation and utilization. Appropriate varieties of fodder would be promoted for cultivation on beneficiary farmland, and wherever possible, access to public lands belonging to the local village administration would be promoted for community-based fodder production. Farmers cultivating fodder would be trained in proper silage and hay making techniques. Where community fodder production is implemented, efforts will be made to prepare community silo pits or use the existing silos of the old cooperative dairy units on a rental / contract basis.

18. Wherever possible, common lands belonging to local village administration would be promoted for community based fodder cultivation. The cultivated fodder primarily would be used to cater to the needs of winter fodder scarcity. Farmers cultivating fodder would be trained in proper ensiling and hay making techniques. Where community fodder production is possible, efforts would be made to prepare community silo pits or use the existing silos of the old co-operative dairy units on a rental / contract basis.

19. For lactating cows, the project would promote improved feeding practices (production-based balanced feeding), including direct grazing of improved on-farm pastures and the adoption of pre-formulated concentrate feed and mineral supplements to complement the grazing and winter fodder resources.

20. The implementation of this subcomponent would be supported by the three pillars described in the introduction to the component. As such, project support to eligible beneficiary groups of smallholder farmers (or villages) would include a "integrated package" consisting of a combination of dairy-specific training, practical demonstration of improved practices and technologies, and financial support (on a matching grant basis with resources from Component 3B) for the adoption of improved feed and fodder-related inputs and/or equipment aimed at improving overall nutrition and productivity of dairy herds. For larger commercial farms, the support "package" would be conceptually similar in terms of access to training and demonstration, with the exception of the acquisition of inputs and equipment, which would be procured either with the farmers own, or borrowed, funds.

21. Operationally, the implementation of the subcomponent would be mainly the responsibility of the service provider, who – under the supervision of ABCC central and regional offices - would deliver the overall training program, organize the demonstration activities, and support the beneficiary groups in the identification of inputs and/or equipment to be adopted with project support, and the subsequent preparation of the subproject proposals. It is expected that, consistent with the value chain approach to be followed by the project, the dairy processors would also play an important role in the implementation of this component, collaborating with the project on structuring the payments for milk, acting as service providers for input supply and dissemination of knowledge, and other such important key functions.

22. The detailed description of roles and responsibilities of all participating entities, as well as the details of the training modules, group formation criteria and the subproject cycle would be included in the Project Operational Manual (POM). A draft of the POM would be available for Bank's review at appraisal.

Sub-component 2.B: Animal husbandry and farm management

23. *(i) Animal housing, general management and handling.* Technical support and advice would be provided to the farmers on improved housing (shelter, flooring, feed and water troughs, drainage systems) which could ensure animal comfort, hygiene and adopting efficient management practices (care and nutrition of dry and pregnant cows, heifers, male and female calves, reproductive management, animal identification, preventive animal health care and farm records).

24. **Animal Housing**: Comfortable and hygienic animal housing is important to ensure cow comfort, disease control and clean milk production. The project would demonstrate (through the model farms) appropriate housing design (flooring, watering system, feed troughs, drainage systems, manure pits) suited for the Issyk-Kul region. Through facilitating access to finance, interested farmers would be assisted in animal housing improvement.

25. *(ii) Animal Health, Farm Hygiene & clean milk production.* Training and support would be provided to the farmers for implementing farm hygiene system which would ensure improved herd health, reduction in mastitis and clean milk production with minimum microbial load. Use and proper handling of inputs such as disinfectants, teat dip systems required for ensuring farm hygiene and clean milk production would be promoted. Where appropriate, the project would

promote knowledge on mechanization of milking (through small-scale milking machines in which the farmers would invest themselves).

26. **Animal Health Care & Farm hygiene**: Farmers would be regularly oriented on preventive animal health care using the state vaccination service. Thrust animal health care activities would be to control mastitis, foot and mouth, brucellosis and helminthic infestations. Farm hygiene would be promoted among the participating farms which could reduce disease incidence and production of clean milk. Linkage would be established through private veterinary system for regular disease monitoring of the small holder farms through a scheduled farm visit. Regular vaccination, disease testing, deworming will be carried out during these visits and a certification system would be introduced. The farmers would be taught on the importance of quarantining the newly introduced animals and the farmers' groups would be encouraged to monitor the entry of new animals.

27. **Clean milk production**: In collaboration with milk processors, farmers would be continuously trained and monitored on the quality of milk produced at farm gate. Processing companies would be encouraged to evolve incentive systems for the milk quality (based on Somatic Cell Count, antibiotic residues) which could promote overall improvements in milk quality among the members of the Farmers' group.

28. *(iii) Breeding management***.** A major issue in the dairy production system in Issyk-Kul is the uneven breeding management resulting in large gap between summer and winter milk production. To minimize the gap, farmers would be trained to adopt planned breeding which could aid in uniform milk production. Technologies such as estrous synchronization would be demonstrated as a mean to plan the breeding. Further, farmers would be trained in heat detection methods and be motivated to adopt artificial insemination which would help in accelerating the genetic improvement of the existing dairy herd.

29. **Breeding and reproductive management**: The training process and Artificial Insemination (AI) delivery system would assist the farmer to breed desired type of cows suited to his/her farm in tandem with the breeding objectives of the farmer (such as Alatau breed, which is a Brown Swiss cross). The location of the AI service centre would be in close proximity of the villages. The farmers would be continuously oriented on heat detection as it is a critical component for the success of the AI. Maximum percentage of smallholder farms would be brought under the AI service with pedigreed bulls. Selected farmers would be assisted with breeding their cows using imported frozen semen of high pedigree from the international market and the progenies produced through these mating could be used to produce bulls and bull mothers for future semen production of the country. One of the major problems in Issyk-Kul is uneven calving ratio in summer and winter resulting in skewed milk production. Project envisages demonstrating planned breeding approach (Oestrous Synchronization) which could aid in reducing the calving ratio between summer and winter. Efforts would be made to educate the farmer to produce one calf a year to have better farm economics.

30. **Calf and heifer management**: This activity would aim to reduce young animal mortality and achieve better growth rates resulting in producing sufficient numbers of replacement heifers

as well as surplus male and female animals for market. Farmers would be trained to take up proper preventive health care measures and growth monitoring to ensure better farm profitability

31. **Record keeping**: Farmers would be encouraged to maintain records of production, breeding, health activities, calf growth, revenues and expenses on a day to basis and will be assisted to analyse the profit / loss of the dairy farm activity on a regular basis. Desiring farmers would be encouraged to maintain record through computerized systems. The Project would design required formats, distribute and train the farmers and record maintenance and analysis.

32. **Manure management**: Proper disposal of manure is important in terms of farm hygiene, nutrient overload, soil health and using it as manure. Appropriate manure pit design and composting would be demonstrated for proper utilization of manure in the farm, pastures and croplands. Farmers would be trained on practices to handle the manure adhering to farm hygiene and environmental principles. The project would also promote such practices as composting and bio-gas production.

Sub-component 2.C: Milk collection, cooling and handling

33. Improved on-farm milk handling would be promoted, including through demonstrations of milk collection and testing equipment. In addition, farmers' groups/interested individuals, and/or processors would be assisted with establishing and/or improving existing milk collection systems, through milk testing, weighing and cooling for ensuring milk quality and transparent milk pricing. Where required, project beneficiaries within the groups would be selected and trained in milk collection, testing and cooling practices. An enabling environment / mechanism (negotiation platform) would be created for a better and transparent milk pricing system.

34. In addition to providing financing for establishment of milk cooling tanks through the Revolving Fund, the project is planning to establish co-operative milk collection and chilling units on a pilot basis. These milk collection units would be linked to the nearby milk processors.

Component 3: Farm-level Investments

35. The objective of this component would be to promote on-farm investments in increasing productivity of dairy cows and milk quality. The component would be implemented by the Credit Line Management Unit (CLMU) under the Ministry of Finance. The CLMU would liaise with the group mobilization and service providers, as well as ensure the M&E (including sub-borrower field visits) and reporting on the component activities. The component would cover the following activities:

Sub-component 3.A: Revolving Fund

36. The Revolving Fund (RF) would facilitate access to finance for small farmers and milk collection agents for the purchase of inputs and small equipment. US$1.20 million have been allocated for the purposes of the Revolving Fund, and the amount is expected to increase under Phase II based on the actual demand under Phase I. The RF would provide financing to groups of beneficiaries, based on social collateral principles. Detailed eligibility criteria for investments and

beneficiaries, and procedures for operation of the Revolving Fund, and ensuring repayment of the Revolving Fund resources to the GOK at the end of the project shall be provided in a Revolving Fund Operational Manual, which will be part of the Project's Operational Manual.

37. The Revolving Fund would provide two products:

(i) Working capital loans, providing access to short-term financing for seeds, fertilizer and other inputs for spring and winter planting, and harvesting activities, animal feed, as well as other short-term needs to improve dairy animal productivity on beneficiary farms;

(ii) Investment loans with a repayment schedule of up to three years, to enable farmers and milk collection agents to procure more productive animals for herd improvement, animal housing improvements, milk quality testing equipment, equipment for fodder production, and other investments towards improvement of the dairy animal productivity and milk quality improvement.

Group Mobilization and Member Selection Criteria

38. To obtain the support from this financing facility under the project, the potential beneficiaries would be organized into Dairy Borrowing Groups (DBG). The establishment of eligible Dairy Borrowing Groups (DBG) would be assisted by a consulting company or NGO hired under the project with prior experience in formation of similar groups and provision of assistance with repayments. The project would support existing groups, provided they meet the qualification criteria, as well as the formation and training of new groups. It is expected that each DBG will consist of six to eight people.

39. To be a member of the DBG a household should meet the following criteria:

1) It should not be from a "wealthy" strata who have three or more dairy cows, large land plots (5 ha or more), a running business or any other source of income and assets that would not qualify it as a low-income household. Meeting of this criteria should be confirmed by the representative of the local self-governance body (Aiyl Okmotu), representative by the Court of Elders (Aksakals), and by the representative of the NGO/consulting company assisting with the mobilization of groups;
2) It should not have any outstanding loan or private debt;
3) It should have an able and willing family member(s) who can do the farming work;
4) It must agree to use the funding from the DRF only for the purpose of developing and/or improving its small-holder dairy practice;
5) It must be accepted by other members of the group and must be willing to observe the group rules;
6) It must be willing to provide the required share of its own co-financing to get the funding from the DBG;
7) It must agree in writing to repay the received funding back to the DBG within a specified time period on specified terms and conditions;
8) It must agree in writing to bear solidary liability for the repayment of the obligations of any other member of the group should the latter fail to honor its obligations;

9) It must agree to participate in trainings conducted by the project, apply the received knowledge, and cooperate with the project and ail okmotu representatives in collecting the information and monitoring of the results of this activity;
10) It must agree to and follow to relevant veterinary requirements to ensure proper animal health and food safety measures; and,
11) It should abide by the internal rules of the group.

Financial Instrument

40. Each member of the DBG can receive up to US$1,000, the total amount per group not exceeding US$8,000. The funding would be available in KG Som, given that the beneficiaries would be purchasing assets and inputs, as well as selling milk, in the domestic market. The DBG members would have to provide 10 percent as co-financing to the project (which can be in the form of cash, in kind, or monetized labor).

41. There would be no physical collateral required except for signed solidary obligations by each group member. However, upon receipt of the funds, 1 percent from every sub-financing would be set aside into a separate account, held by the MOF/CLMU at the Servicing Bank, which would be used to repay any sub-financings that the other group members are not able to repay on behalf of the group's failing member. These funds will be returned to be members of the DBG upon repayment of the Revolving Fund resources to the MOF at the end of the project, minus any amounts used for repayment to the MOF on behalf of the groups' failing members. The majority of loans are expected to be for working capital, with maturity of up to 10 months. However, those farmers borrowing for animals or other productive assets would be able to receive financing for up to 3 years. A group member would only be allowed to have one such loan (long-term or short-term) at a time.

Implementation Mechanism

42. The following implementation mechanism is proposed:

1) Interested potential members of the group would work with the Community Mobilizer (NGO or consulting firm hired under the project), to form a group and receive relevant training.
2) Upon establishment and initial training (relevant training received under prior projects would also be acceptable), each group (or its members, as the case may be) would sign a Memorandum of Understanding (MOU) with the NGO/consulting firm on participation in the project. The MOU would set forth the responsibilities of both the DBG/its members and the NGO/consulting company under the project, as well as those of the Credit Line Management Unit (CLMU), which will be responsible for disbursement of funds to the DBGs (or its members, as the case may be), monitoring of repayments, and, together with the NGO – for collection of amounts due for repayment.
3) The group would prepare its investment plan, specifying the purpose of funds needed for each member, required repayment period, as well as repayment schedule. All group members would have to agree to this investment plan. The investment plan, which will also contain the commitment of the group's joint and several responsibility to repay the sub-

financing, will be signed by each member of the DBG. These investment plans would be reviewed by the Community Mobilizer, and approved by the CLMU.

4) Each group would open an account in a Servicing Bank, which would be selected by the project, for Revolving Fund administration purposes.
5) The funds would be disbursed by the CLMU to the DBG's account with the Servicing Bank.
6) The DBG (members) would use the funds for the intended purpose, procure the assets or inputs, and make repayment of funds back into the account of the Servicing Bank strictly in accordance with the schedule. Any amounts not repaid by the individual members of the group would have to be covered by the other members of the group. Failure to do so would disqualify the BDG from receiving future amounts, and any amounts still remaining with the DBG members would be repayable immediately. All amounts due (except when the repayment schedule is more than 10 months) would have to be repaid by the end of the calendar year.
7) The following year the process would be repeated, using the funds accumulating in accounts.
8) All Revolving Fund resources collected by the CLMU would be transferred back to the MOF at the end of project period, unless another decision will be made during the project implementation period.
9) Records pertaining to the repayment record of each member would be maintained by the DBG, and used towards building a positive "credit history" to become a bankable client of the formal financial sector in the future.

Sub-component 3.B: Technical assistance and capacity building of the beneficiaries and participating financial intermediaries

43. The following training under this Component would be provided to beneficiaries:

(i) For the groups of beneficiaries borrowing from the Revolving Fund:

   (a) Financial literacy training for the beneficiaries;
   (b) Adherence to the procurement procedures for financings received from the Revolving Fund; and,
   (c) Awareness of Environmental and Social Issues.

(ii) For the larger farmers, milk collection agents and dairy processors from the project area, the project would provide training to enable tapping into existing financing schemes, such as the credit lines provided by the Kyrgyz-Russian Development Fund;

44. Subject to demand identified during Phase I, a Credit Line for investment by farmers, milk collectors, service providers, and agro-processors may also be an option under Phase II. This financing facility would be complemented by CAAP's work with financial institutions to build their capacity in financing agriculture, including dairy supply chain.

Component 4: Project Management

45. The component would cover the costs associated with project management, including Monitoring and Evaluation, and results assessment. The project will have two PMUs: the Agribusiness Competitiveness Center (ABCC) reporting to the Ministry of Agriculture, Food Industry and Melioration, and the Credit Line Management Unit (CLMU) at the Ministry of Finance would implement the technical assistance and Revolving Fund activities, respectively. In addition, the ABCC would be responsible for procurement activities under the project, and CLMU for the financial management of the project. ABCC would also open a regional office in Issyk-Kul consisting of three specialists: Livestock Specialist, Training Specialist, and Environmental Specialist. Both PMUs would closely liaise with the other projects under the KDSDP program. The Grievance Redress Mechanism (GRM) would be established and maintained by the ABCC.

PHASE I OF THE IDPIP

46. Based on the overall approach under various components described above, Phase I of the IDPIP would cover the following activities:

47. ***Component 1: Strengthening Public and Private Services in the Dairy Sector*** (estimated cost US$ 1.65 million, all IDA). Phase I of this component would focus on the following activities: Sub-component 1.A: Improving the Public-Private Dialogue (US$50,000, all IDA). The sub-component will focus on organizing inclusive dialog process, involving key business associations, entrepreneurs, regional government bodies, regional governors and development partners. The Sub-component will also ensure development and implementation of the outreach campaign to ensure strong awareness about the PPD mechanism and agri-sector reforms among farmers; in order to disseminate and keep stakeholders involved, communication materials will be prepared to describe the project and the reforms and distributed to the relevant stakeholders.

48. Sub-component 1.B: Support to Animal Identification and Registration (US$1.1 million, all IDA) will complement the national efforts to establish an animal identification and registration system by supporting identification and registration of about 220,000 heads of cattle in the Issyk-Kul Region. The project will finance the public awareness campaign, tags, tagging, about 300 smartphones for the identifiers, and training of the veterinarians to enter the information in the database.

49. Sub-component 1.C: Procurement of high quality semen straws (US$200,000, all IDA) to ensure early breeding improvement in the project area. The project would import good quality frozen semen (around 20000 semen straws) of Brown Swiss breed which could help in outcrossing the genetically deteriorating Ala-Tau population with an objective to improve milk production. Around 10,000 cows would be targeted under this genetic upgrade program. It is expected that the Government would second the required personnel to implement the AI delivery system in Issyk-Kul.

50. Sub-component 1.D: Establishment of up to three veterinary check-points in the project area (US$300,000, all IDA). The specific location of the check-points will be selected at a later stage.

51. ***Component 2: On-farm Productivity Enhancement*** (estimated cost US$1.48 million, all IDA)**.** During Phase I, the MDV concept would be introduced, determining the locations of the MDV service points, and providing the initial support to these services. The component would start with the most-needed services (which could be a veterinarian, a milking center, a milk collection point, etc.). The component would work predominantly with groups of beneficiaries. The component would provide training, demonstrations and advice to farmers on good animal breeding practices, including: (i) fodder production and feeding management; (ii) animal husbandry and farm management, including (a) animal housing, general management and handling; (b) animal health, farm hygiene & clean milk production; (c) breeding management; and (d) manure management; and (iii) milk collection, cooling and handling.

52. The component would finance consulting services to (i) mobilize and train groups of beneficiaries; (ii) start the provision of training, technical assistance and advice to farmers on the required on-farm upgrades to improve the milk quantity and quality on farmers; and (iii) map the MDV, as well the locations of the required service points. It is expected that the 12,000 households will be reached by the end of Phase I. The project will finance consulting services for group mobilization, as well as provision of training and advice. Demonstrations will be supported through procurement of necessary goods and services to ensure sound results of the demonstration and satisfactory dissemination of results.

53. ***Component 3: Farm-level Investments*** (estimated cost US$1.39 million, of which IDA US$1.27 million and US$120,000 beneficiaries). Phase I would finance:

54. Sub-component 3.A: Revolving Fund. A US$1.20 million Revolving Fund to facilitate access to finance for small farmer for the purchase of inputs and small equipment has been included in this Phase; During Phase I, the Revolving Fund will be established and start operations. It is expected that 3,000 beneficiaries (formerly largely unbankable) will be reached through the Revolving Fund. The project will also identify the needs of bankable farmers to propose support services to help them access financing from existing credit lines. These could include preparation of business plans, investment plans, as well as support for on-farm budgeting and accounting.

55. Sub-component 3.B: Technical assistance and capacity building to project beneficiaries to enable them to access existing financing programs (US$70,000, all IDA). For the groups of beneficiaries borrowing from the Revolving Fund:

(a) Financial literacy training for the beneficiaries;
(b) Adherence to the procurement procedures for financings received from the Revolving Fund;
(c) Awareness of Environmental and Social Issues.

56. For the larger farmers, milk collection agents and dairy processors from the project area, the project would provide training to enable tapping into existing financing schemes, such as the credit lines provided by the Kyrgyz-Russian Development Fund;

57. ***Component 4: Project Management*** (estimated cost US$0.60 million, all IDA). The component would cover the costs associated with project management, including Monitoring and Evaluation for the project implementation, as well as the establishment and maintenance of the Grievance Redress Mechanism (GRM).

Annex 3: Implementation Arrangements

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

Project Institutional and Implementation Arrangements

Project Administration Mechanisms

1. The Ministry of Agriculture, Food Industry and Melioration (MOAFIM) and the Ministry of Finance (MOF) would be the Implementing Agencies for the project. Both Ministries have prior extensive experience with implementation of Bank-financed projects.

2. The Agribusiness Competitiveness Center (ABCC) reporting to MOAFIM, and the Credit Line Management Unit (CLMU) at MOF would be responsible for implementation of the technical assistance, and Revolving Fund, activities, respectively. Both implementing units have extensive experience in implementing Bank-financed projects. The technical assistance activities (Components 1 and 2) would be implemented through the ABCC, which has been successfully implementing technical assistance activities in the agriculture sector in three projects of the Bank (Agribusiness and Marketing Project, Agricultural Productivity Assistance Project, and the JSDF-financed Support to the Community Seed Funds Project). The Revolving Fund for farmers, farmer associations, agro-processors and traders would be managed by the CLMU which has successfully managed credit lines in three previous Bank-financed projects (Rural Finance II Project, Agribusiness and Marketing Project, and Agricultural Productivity Assistance Project). Similar to the previous projects, procurement functions for the proposed project would be carried out by ABCC and the overall Financial Management would be the responsibility of CLMU. Safeguards support would be the responsibility of the ABCC. ABCC would also open a regional office in Issyk-Kul, where the technical staff and Environmental Specialist would be located. Both PMUs, but, in particular, ABCC would closely liaise with the other projects under the KDSDP, to ensure that all necessary activities are implemented, and no duplications occur.

3. A Steering Committee would be set up to provide strategic guidance for project implementation, as well as ensure that key issues that need to be resolved are brought to the attention of the Government and their resolution facilitated. The Steering Committee would consist of representatives of the Prime Minister's Office, MOAFIM, Ministry of Economy, MOF, Issyk-Kul Region Governor's Office, and private sector representatives.

4. A local consulting firm with selected key international expertise in dairy sector development, in particular, in how to improve on-farm productivity and milk quality, would be contracted under the project to support project implementation. The consultants would have the following main responsibilities: (i) identify the locations for the service points for the Dairy Model Villages (Component 2); (ii) provide training-of-trainers to local consulting companies that would train farmers in the project area (Component 2); (iii) provide advisory services to individual larger farmers; or groups of farmers, on specific areas related to the improvement of milk quality and quantity on beneficiary farms (Component 2); and (iv) assist ABCC in coordinating the project

activities with other activities of the program, in particular, those financed by other donors (Component 1 and Component 4).

5. In addition, local consulting companies and/or NGOs would be hired under the project to ensure outreach to farmers, training and advisory services on the ground (under Component 2).

6. Finally, a local consulting company or NGO experienced in group mobilization and group lending arrangements would be hired under the project to provide the necessary training to the groups of beneficiaries of the Revolving Fund, as well as help with ensuring collection of repayments due to the Revolving Fund (Component 3).

Financial Management, Disbursements and Procurement

Financial Management

7. **Implementing Entities.** Financial Management (FM) including the flow of funds, budgeting, accounting, reporting, internal controls and external audit, would be implemented by the two project implementing agencies, the CLMU and ABCC. An FM assessment was carried out to determine the FM implementation risk and FM arrangements at both implementing agencies, including accounting, reporting, planning, budgeting, and internal controls and staffing. The FM arrangements were assessed to be overall satisfactory to the Bank. The inherent risk of the Project after applying risk mitigation measures is rated as *Moderate*; the Control Risk and the overall residual FM Risk are also considered to be *Moderate*.

8. **Strengths and Weaknesses:** The significant strengths that provide a basis for reliance on the FM systems of both Implementing Agencies include: (i) FM arrangements similar to existing projects being implemented by them and found to be satisfactory; (ii) experienced FM staff; (iii) proper internal controls and good operational accounting system in place. There are no major weaknesses at the CLMU and ABCC. The following capacity building actions have been agreed to be implemented:

Actions for capacity building	**Responsible**	**Completion date**
Update the FM Chapter of the Project Operational Manuals to reflect the Project related internal control, budgeting, external auditing, financial reporting and accounting policies and procedures	CLMU, ABCC	Agreed by effectiveness
Procure and install accounting software for accounting and financial reporting purposes of the Project. The accounting software will be specially designed to meet World-Bank-financed projects requirements including ability to generate IFRs, attachments to withdrawal applications including SOEs, and annual financial statements	CLMU and ABCC	60 days after effectiveness

9. **Budgeting and planning.** The CLMU and ABCC have, in general, acceptable budgeting and planning capacity to carry out the Project. The final procurement plan that is to be discussed

and agreed with the CLMU and ABCC Directors, and approved by the World Bank would be based on the annual budget of the IDPIP. All changes to the procurement plan would be reviewed by the Directors and approved by the World Bank. The Directors, the FM specialists, and the procurement specialists would be involved in the preparation of the annual budget for their respective components. The budget would form the basis for allocating funds to project activities. The budgets would be prepared according to the IFR format (disbursement categories, components and activities, account codes, and broken down by quarters).

10. **Accounting and Reporting.** Cash basis of accounting would be applied for the project's accounting. Both implementing agencies would maintain their current accounting systems. Project-management-oriented Interim unaudited Financial Reports (IFRs) would be prepared under the IDPIP. The CLMU would produce a full set of IFRs (using inter alia information submitted by the ABCC) every calendar quarter throughout the life of the IDPIP. The CLMU would be responsible for their submission to the Bank. The format of IFRs would be agreed before negotiations and would include (i) Project Sources and Uses of Funds, (ii) Uses of Funds by Project Activities, (iii) Project Balance Sheet, (iv) DA Statement, (v) Revolving Fund Statement, and (vi) Withdrawal Schedule. IFRs would be produced by the accounting software. These financial reports would 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 would be provided to the Bank within six months of the end of each fiscal year as well as at the closing of the IDPIP by the CLMU.

11. **Internal Controls**. The CLMU's and ABCC internal controls systems were assessed to be capable of providing timely information and reporting on the IDPIP. The FM chapter of the Project Operational Manual (POM) is well prepared and fully document accounting and financial reporting policies and procedures of existing projects such as internal control procedures, including authorization of expenditures and approval of the payments; bank reconciliations, verification of expenditures eligibility by the Financial Managers; description of financial documents flow/circulation; indication of eligible cash transactions, budgeting procedures, formal reconciliation procedures of project records with Client Connection and XDR/USD reconciliation, safeguards for assets, etc. Similar internal control systems would be maintained for the purpose of the Project. Expenditures incurred by the CLMU and ABCC would be authorized by the Directors of the implementing agencies for their respective components and verified for the eligibility and accuracy by the financial managers. Similar POM would be prepared by the CLMU with ABCC's assistance to reflect specific activities of the IDPIP, including Chart of Accounts, Audit TOR, frequency of submission, format of IFRs, and so forth.

12. **Staffing.** The CLMU and ABCC have experienced FM staff, consisting of Financial Managers responsible for overall FM arrangements of all projects, implemented by the respective agencies. Both Financial managers have many years of experience working in WB-financed projects. FM Managers would be in charge for the overall FM arrangements of the IDPIP as well. The Financial Manager of the CLMU would be responsible for preparation of the quarterly IFRs and their submission to the Bank. There are also experienced disbursement specialists at the CLMU and an experienced accountant at the ABCC working for different projects, such arrangement is considered to be adequate and no additional staff is required at the beginning of the

project. At a later stage, an additional regional accountant could be hired by the ABCC depending on further workload.

13. **External Audit:** The IDPIP audit would be conducted (i) by independent private auditors acceptable to the Bank, on the TOR acceptable to the Bank, and selected by the CLMU; and (ii) according to the ISA issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants. The TOR would include (i) audits of financial statements, (ii) assessments of the accounting system, and (iii) a review of the internal control mechanisms. The following table identifies the required audit reports that would be submitted by the CLMU together with the due date for submission.

Audit Report	**Due date**
The Project Financial Statements include Project Sources and Uses of Funds, Uses of Funds by Project Activities, Project Balance Sheet, Withdrawal Schedule, DA Statement, Notes to the Financial Statements, and Reconciliation Statement	Within 6 months of the end of each fiscal year as well as at the closing of the Project.

14. The audited financial statements would be disclosed to the public in a manner acceptable to the Bank. Following the Bank's formal receipt of these statements from the borrower, the Bank makes them available to the public in accordance with the World Bank Policy on Access to Information.

Disbursements

15. Disbursements from the IDA Credit and IDA Grant Accounts would follow the transaction-based method, i.e., traditional Bank procedures including advances to designated accounts, direct payments, Special Commitments and reimbursement (with full documentation and against Statements of Expenditures - SOEs). Two designated account would be opened by the CLMU in a commercial bank acceptable to the World Bank, one for IDA Credit resources, and one for IDA Grant resources. For payments above the minimum application size, as will be specified in the Disbursement Letter, the CLMU may submit withdrawal applications to the World Bank for payments to suppliers/contactors/consultants directly from the Credit Account or Grant Account, as applicable. Disbursement arrangements will be detailed in the Disbursement Letter. The ABCC would open special accounts for IDPIP in the same commercial bank. The ABCC would apply from time to time to CLMU to get advances from the DA to ABCC's special account(s). The ABCC would use the account(s) only for IDPIP eligible payments and report about expenditures from time to time to the CLMU. Details of cash flow arrangements would be described in FM part of the POM.

Procurement

16. 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.

17. 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.

18. 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.

19. *Procurement of Works:* Works procured under this project will include establishment of the veterinary check-points in the project area.

20. *Procurement of Goods*: Goods procured under this project will include procurement of consumables (semen straws) for artificial insemination; equipment kits for veterinarians, milking equipment, as well as farming inputs for demonstrations and knowledge dissemination activities.

21. *Selection of Consultants:* Consulting services will include: (i) consolidated technical assistance; (ii) technical assistance in strategic communication to improve Public-Private Dialogue;(iii) farmer outreach and training service providers; (iv) service providers for group mobilization; (v) local consultants to work with the ABCC and consultants hired under the project, and (vi) financial audit of project accounts.

22. Short-lists of consultants for services estimated to cost less than U$300,000 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.

23. *Training*: Training will cover (i) training-of-trainers and farmer training in improved dairy farming; (ii) group mobilization-related training, and support to the utilization of the Revolving Fund; (iii) study tours (as feasible) for vets and staff of the labs, as well as dairy farmers and processors; (iv) training of PMU and relevant government staff on procurement, financial management, M&E, and other project management related activities (as needed).

24. *Operating Costs*: The grant will finance incremental operating costs. Incremental Operating Costs means incremental costs incurred by ABCC and CLMU on account of the Project coordination, implementation and monitoring, including the costs of salaries and Social Charges for ABCC and CMLU staff (excluding salaries of the Recipient's civil servants, and other miscellaneous costs directly associated with the Project implementation), including expenditures for vehicle operation and maintenance, office supplies and consumables, utilities, communication, translation and interpretation, bank charges, Project related travel, including per diem and accommodation, all based on periodic budgets acceptable to the Association. Some of ABCC and CLMU staff hired under APAP will continue working for implementation of proposed IDPIP.

25. *Commercial Practices:* In case of Revolving Fund financings for procurement of short-term inputs and minor investments, beneficiaries of the financings may follow commercial practices that have been determined acceptable by the Bank. Revolving Fund Operational Manual (RFOM) will describe the basic guiding principles and acceptable procedures applicable to this facility. The Guidelines shall define the main responsibilities and functions of the group members, NGO providing the mobilization services to groups, as well as the CLMU, as well as the detailed procedures applicable to the operation of the Revolving Fund.

26. The legal documents signed between the participants of the Revolving Fund will refer to the Bank's Anti-Corruption Guidelines as well as the Procurement Guidelines. The NGO in charge of the mobilization services will check the contracts submitted by the Revolving Fund financing recipients so that the contracted firms are not in the World Bank list of debarred or suspended firms[18]. Contracts placed by Revolving Grant financing recipients on their subsidiary or affiliated companies will not be eligible for financing. The procurement of second hand goods shall not be eligible for financing.

27. **Assessment of the agencies' capacity to implement procurement.** Procurement will be the responsibility of ABCC, and there is a slight risk that they may not be able to cope with the additional responsibilities assigned under the proposed project. The procurement performance under completed APAP was rated satisfactory at the time of preparation for IDPIP. Risk assessment rating was done through Procurement Risk Assessment and Management System (P-RAMS). The procurement specialist hired recently by ABCC will require additional training and Bank's supervision. The Bank's Procurement staff from Country Office will provide advice and assistance on a regular basis. The procurement packaging and plans will be carefully developed with a review to attract international participation in bidding process; and procurement notices will be advertised widely. The procurement risk is rated as Substantial after mitigation.

28. The Credit Line Management Unit (CLMU) under the Ministry of Finance will be responsible for implementation of Component 3, including the Revolving Fund. The NGO working on group mobilization will be responsible for ensuring that the DBG beneficiaries comply with the agreed procurement rules and procedures for Revolving Fund financings. Existing commercial practice requires that beneficiaries obtain several competitive bids before making the decision. The general rule is to procure the least cost goods, works and services consistent with minimum quality requirements.

[18] The debarred or suspended firms is available on the external website of the World Bank.

29. A General Procurement Notice (GPN) covering the project procurement activities will be prepared and published at the negotiations. More details on the procurement arrangements will be provided in the Procurement Section of Project Operational Manual.

30. *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.

31. *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 DC contracts
Goods	>= 1, 000 000	ICB	All ICB contracts
	<1, 000 000	NCB	First contract
	<100 000	Shopping	First contract
	NA	DC	All DC contracts
Sub-financings	*<= 500,000*	*Commercial Practice*	*1st two contracts*
Consultant Services	Irrespective of value	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

32. *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.

33. *Procurement plan.* A procurement plan has been developed covering procurement activities for the project period. 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. Due to the demand-driven nature of the Revolving Fund, it is not possible to estimate the procurement requirements for the sub-projects. Therefore, it is not possible for the sub-borrowers to develop a Procurement Plan which would provide the basis for the procurement methods. Each DBG member will provide a list of items to be procured using the sub-financing proceeds.

PROCUREMENT PLAN

Goods

Item №	Contract Ref. №	Contract Description	Contract Description	Plan vs Actual	Procu. Method	WB Review (Prior/ Post)	Date of Draft BD to WB	Date of Contract Signing	Date of Contract Completion
№ Пункта	№ Контракта	Описание контракта	Описание контракта	План и Факт	Метод закупок	Обзор Банка (предварит./последующ)	На рассмотрение ВБ.	Подписание контракта	Завершение контракта
1	IDPIP/G-1	Computer equipment for Karakol office	Компьютерное оборудование для офиса в Караколе	plan	Shopping	Post	1-Jun-17	1-Sep-17	20-Sep-17
				actual					
2	IDPIP/G-2	Computer equipment for ABCC head office	Компьютерное оборудование для головного офиса ЦКА	plan	Shopping	Post	1-Jun-17	1-Sep-17	20-Sep-17
				actual					
3	IDPIP/G-3	1C accountant program for ABCC	Бухгалтерская программа 1С для ЦКА	plan	Shopping	Prior	1-Mar-17	25-May-17	15-Jun-17
				actual					
4	IDPIP/G-4	Training materials 2017	Учебные материалы 2017	plan	Shopping	Post	1-Jul-17	1-Oct-17	20-Nov-17
				actual					
5	IDPIP/G-5	Training materials 2018	Учебные материалы 2018	plan	Shopping	Post	1-Jan-18	1-Apr-18	20-May-18
				actual					
6	IDPIP/G-6	Training materials 2019-2020	Учебные материалы 2019-2020	plan	Shopping	Post	1-Jan-19	1-Apr-19	20-May-19
				actual					
7	IDPIP/G-7	Computer equipment for MoAM	Компьютерное оборудование для МСХМ	plan	Shopping	Post	1-Jun-17	1-Sep-17	20-Sep-17
				actual					
8	IDPIP/G-8	Semen, equipment 2017-2018	семенной материал, оборудование 2017-2018 гг.	plan	NCB	Post	1-Jul-17	10-Dec-17	10-Mar-18
				actual					
9	IDPIP/G-9	1C accounting program for CLMU	Бухгалтерская программа 1С для ОУКЛ	plan	Shopping	Post	1-Mar-17	25-May-17	15-Jun-17
				actual					
10	IDPIP/G-10	Tags and taging	Бирки	plan	NCB	Prior	1-Jul-17	10-Dec-17	10-Mar-18
				actial					
11	IDPIP/G-11	Equipment for tagging registration		plan	Shopping	Post	1-Jun-17	1-Sep-17	20-Sep-17
				actual					
12	IDPIP/G-12	Computer equipment for CLMU	Компьютерное оборудование для ЦКА	plan	Shopping	Post	1-Jun-17	1-Sep-17	20-Sep-17
				actual					

Consulting Services

Item №	Contract Ref. №	Contract Description	Contract Description	Plan vs Actual	Firm or Ind.	Select. Method	WB Review (Prior/ Post)	Draft TOR	WB No-objection to TOR	Request for Exp. Of Interest	Date of Contract Signing	Date of Contract Completion
№ Пункта	№ Контракта	Описание контракта	Описание контракта	План и Факт	Фирма или Индивидуал	Метод отбора	Обзор Банка (предвари т./последующ.)	Проект ТЗ	Одобрение ВБ	Запрос на выраж. заинт	Подписание контракта	Завершение контракта
1	IDPIP/CS-1	ABCC Trainers on farmers traning (4 people)	Тренер ЦКА по обучению фермеров	plan	IND	IC	Post	1-May-17	10-May-17	20-May-17	1-Aug-17	31-Dec-20
				actial								
2	IDPIP/CS-2	Contract with consulting company on Impact Assessment at the end of the project	Контракт с консультационной компанией по оценке воздействия в конце проекта	plan	FIRM	CQS	Post	1-Jul-19	10-Jul-19	20-Sep-19	1-Jan-20	31-Dec-20
				actial								
3	IDPIP/CS-3	Contract on development of training materials 2017	Контракт на разработку учебных материалов 2017 г.	plan	IND	IC	Post	1-May-17	10-May-17	20-May-17	1-Aug-17	30-Oct-17
				actial								
4	IDPIP/CS-4	ABCC Karakol Livestock specialist - head of regional office	Специалист по животноводству ЦКА в Караколе - руководитель регионального офиса	plan	IND	IC	Post	1-Mar-17	10-Mar-17	20-Mar-17	1-Jul-17	31-Dec-20
				actial								
5	IDPIP/CS-5	ABCC Karakol Training specialist - office manager	Специалист по обучению ЦКА Каракол - офис менеджер	plan	IND	IC	Post	1-Mar-17	10-Mar-17	20-Mar-17	1-Jul-17	31-Dec-20
				actial								
6	IDPIP/CS-6	ABCC Karakol Environmental specialist	Специалист по экологии ЦКА Каракол	plan	IND	IC	Post	1-Mar-17	10-Mar-17	20-Mar-17	1-Jul-17	31-Dec-20
				actial								
7	IDPIP/CS-7	ABCC Livestock specialist - veterinary - Component manager	Специалист по животноводству- ветеринар ЦКА - руководитель компонента	plan	IND	IC	Post	1-Mar-17	10-Mar-17	20-Mar-17	1-Jul-17	31-Dec-20
				actial								
8	IDPIP/CS-8	ABCC Livestock specialist - fodder specialist	Специалист по животноводству - специалист по кормам ЦКА	plan	IND	IC	Post	1-Mar-17	10-Mar-17	20-Mar-17	1-Jul-17	31-Dec-20
				actial								
9	IDPIP/CS-9	ABCC Training specialist	Специалист по обучению ЦКА	plan	IND	SSS	Prior	1-Mar-17	10-Mar-17		1-May-17	31-Dec-20
				actial								
10	IDPIP/CS-10	ABCC Public - Private Dialog specialist	Специалист по государственно-частному диалогу ЦКА	plan	IND	IC	Prior	1-May-17	10-May-17	20-May-17	1-Aug-17	31-Dec-20
				actial								
11	IDPIP/CS-11	Contract on development of p training materials 2018	Контракт на разработку учебных материалов 2018	plan	IND	IC	Post	1-May-18	10-May-18	20-May-18	1-Aug-18	30-Oct-18
				actial								
12	IDPIP/CS-12	Consulting company for technical assistance	Контракт с консультационной компанией по техпомощи	plan	FIRM	CQS	Prior	1-May-17	10-May-17	20-Jun-17	1-Jul-17	31-Dec-20
				actial								
13	IDPIP/CS-13	Consulting companies for outreach to farmers	Контракт с консультационной компанией по кампании для фермеров	plan	FIRM	CQS	Post	1-May-17	10-May-17	20-Jun-17	1-Jul-17	31-Dec-20
				actial								
14	IDPIP/CS-14	Consulting company to support Revolving Fund	Контракт с консультационной компанией по оборотному фонду	plan	FIRM	CQS	Post	1-May-17	10-May-17	20-Jun-17	1-Jul-17	31-Dec-20
				actial								
15	IDPIP/CS-15	Consulting company to support financing applications	Контракт с консультационной компанией по поддержке финансовых заявок	plan	FIRM	CQS	Post	1-May-17	10-May-17	20-Jun-17	1-Jul-17	31-Dec-20
				actial								
16	IDPIP/CS-16	Audit	Аудит	plan	FIRM	LCS	Prior	1-May-17	10-May-17	20-Jun-17	1-Jul-17	31-Dec-20
				actial								

TRAINING

Item №	Contract Ref.	Contract Description	Описание контракта	Plan vs Actual	Select. Method	WB Review (Prior/ Post)	Draft TOR	Date of Contract Signing	Date of Contract Completion
№ Пункта	№ Контракта			План и Факт	Метод отбора	Обзор Банка (предварит./последующ.)	Проект ТЗ	Подписание контракта	Завершение контракта
1	IDPIP/T-1	Training for farmers 2017	Обучение для фермеров 2017	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
2	IDPIP/T-2	Training for farmers 2018	Обучение для фермеров 2018	plan	n/a	n/a	n/a	n/a	2-Feb-18
				actual					
3	IDPIP/T-3	Training for farmers 2019	Обучение для фермеров 2019	plan	n/a	n/a	n/a	n/a	2-Feb-19
				actual					
4	IDPIP/T-6	Training for Karakol labaratory Personal	Обучение для персонала лабораторий Каракола	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
5	IDPIP/T-7	Training for MoAM	Обучение МСХМ	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
6	IDPIP/T-8	Training for MoAM	Обучение МСХМ	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
7	IDPIP/T-9	Study tour	Ознакомительная поездка	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
8	IDPIP/T-10	Anual meetings on the base of PPD platform 2017	Ежегодные заседания на основе платформы ГЧД 2017 г.	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
9	IDPIP/T-11	Anual meetings on the base of PPD 2018	Ежегодные заседания на основе платформы ГЧД 2018 г.	plan	n/a	n/a	n/a	n/a	2-May-18
				actual					
10	IDPIP/T-12	Anual meetings on the base of PPD 2019	Ежегодные заседания на основе платформы ГЧД 2019 г.	plan	n/a	n/a	n/a	n/a	2-May-19
				actual					
11	IDPIP/T-14	Steering committee 2017	Руководящий комитет 2017 г.	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
12	IDPIP/T-15	Steering committee 2018	Руководящий комитет 2018 г.	plan	n/a	n/a	n/a	n/a	2-May-18
				actual					
13	IDPIP/T-16	Steering committee 2019	Руководящий комитет 2019 г.	plan	n/a	n/a	n/a	n/a	2-May-19
				actual					
14	IDPIP/T-17	TOT 2017	Обучение тренеров 2017 г.	plan	n/a	n/a	n/a	n/a	2-May-17
				actual					
15	IDPIP/T-18	TOT 2018	Обучение тренеров 2018 г.	plan	n/a	n/a	n/a	n/a	2-Feb-18
				actual					
16	IDPIP/T-19	TOT 2019	Обучение тренеров 2019 г.	plan	n/a	n/a	n/a	n/a	2-Feb-19
				actual					
17	IDPIP/T-20	Final conference	Заключительная конференция	plan	n/a	n/a	n/a	n/a	2-Feb-20
				actual					

WORKS

Item №	Contract Ref. №	Contract Description	Plan vs Actual	Procu. Method	WB Review (Prior/ Post)	Date of Draft BD to WB	Date of Contract Signing	Date of Contract Completion
№ Пункта	№ Контракта	Описание контракта	План и Факт	Метод закупок	Обзор Банка (предварит./последующ)	На рассмотрение ВБ.	Подписание контракта	Завершение контракта
1	IDPIP/W-1	Veterinary posts	plan	NCB	Prior	1-Dec-18	10-Jun-19	31-Dec-19
			actial					

Environmental and Social (including safeguards)

Environment

34. *Implementing arrangements and EA Institutional capacities to perform environmental safeguards.* The Ministry of Agriculture, Food Industry and Melioration (MOAFIM) and the Ministry of Finance (MOF) would be the Implementing Agencies for the project. The Agribusiness Competitiveness Center (ABCC) reporting to the MOAFIM, and the Credit Line Management Unit (CLMU) at the Ministry of Finance would be responsible for the project implementation, i.e., the technical assistance and sub-financing facility in the form of a Revolving Fund, respectively. The ABCC has prior extensive experience in implementing Bank-financed projects. Similar to the previous projects, the ABCC would be responsible for project-related procurement activities, financial management as well as for Environmental Assessment (EA). The evaluation of the EA institutional capacity has shown that although the ABCC has basic capacities to perform its duties concerning EA and enforcing the ESMF provisions, there is a need for additional capacity building activities, especially for the new Environmental Specialist to be hired at the ABCC, and the beneficiaries.

35. *ABCC Environment Specialist.* The ABCC would hire an Environmental Specialist (ES) which would be in charge of compliance monitoring with the credit agreement regarding the EA process, including conducting the screening process. The ABCC ES would assist the project beneficiaries in all aspects of environmental compliance and s/he would be responsible for reporting to both the Government and the World Bank on ESMF implementation. The role of the ABCC ES would be following: (i) Under the Revolving Fund, providing assistance to the NGO(s) and project beneficiaries to determine the exact impacts that can be generated by proposed activities for which sub-financing is being sought as well as prescribing in specific terms the required mitigation actions to be taken; (ii) conducting environmental screening and ensuring EA for all activities that requires such EAs; (iii) reviewing EA documents and approving them (those which do not require special State Ecological Expertise approval); (iv) monitoring and reporting on a regular basis the effects on the environment that financed activities may provoke and to ensure that mitigation specified in the Environmental Management Plans is appropriately carried out; (v) raising awareness on environmental issues and strengthening the capacity of project stakeholders toward ensuring that potential environmental impacts could be recognized, avoided or at least minimized through mitigation. In this regard, the ES would: design the environmental training programs on national environmental legislation, World Bank Safeguard Policies, Environmental Impact Assessment, etc.; organize the preparation of a reference manual which would include the list of national environmental legislation, the list of economic activities requiring permits, compliance procedures and/or compliance inspections; organize the delivery of training through a series of seminars to the target audience on environmental issues associated with this project.

36. *Ensuring compliance with the ESMF*. The ESMF and subprojects EMPs implementation would remain under the direct responsibility of the sub-financing recipients, as well as the Group Mobilization NGO, including responsibilities for supervision and monitoring of selected subprojects, if required). ABCC Environmental Specialist would carry out environmental supervision of the project activities as part of his/her contract supervisory duties.

37. *Integration of ESMF requirements into project documents*. The project Operational Manual would set forth not only the criteria for the selection of sub-financings from the Revolving Fund, criteria for the eligible use of funds, terms and conditions of the sub-financings and other modalities and agreements of the access to finance, but also the rules and procedures for subprojects EA that are in details provided in the ESMF. This document should be satisfactory to IDA and would be an effectiveness condition. The subproject EMPs would be also integrated into the contracts for approved activities, both into specifications and bills of quantities and the contractors would be required to include the cost in their financial bids and grant proposals.

38. *World Bank EA prior review.* The EA documentation for the first two Category B subprojects from each participating bank would be subject to prior review and approval by the World Bank. The project would also provide participating banks capacity building activities prior to approving of any subprojects. During sub-project appraisal, participating banks would have to ensure that proposed sub-projects are in compliance with all national environmental laws and standards, as certified by the relevant local or national authorities of the country, and the OM. All relevant documents and permits should be kept in each sub-borrower document file maintained by the banks, and be made available for review by IDA representatives.

39. *EA capacity building.* A training program targeting the ABCC ES, farmers and other interested parties would be implemented in the framework of the Project's TA activities.

40. *Training for the ABCC Environmental Specialist.* He/she should receive training on EA techniques and procedures. For that purpose he/she might visit similar WB projects in other countries in the region and/or the project may hire a consultant who might provide him/her on the job training. The training should cover the following issues: (a) national and World Bank requirements for environmental assessment; (b) screening and scoping procedures including checklists of potential environmental impacts of the proposed activities and potential agro-processing activities; (c) main provisions of environmental management plans for proposed sub projects, including mitigation and monitoring requirements. The training program should also be practical and include work with realistic case studies, based on actual loan proposals and types of business activities supported by the Project. It should also cover an explanation and practical application of the environmental standards and ESMF forms designed for use by the participating financial institutions. Field studies also may be included. Such training will enable these target groups to recognize and assess potential negative environmental impacts and set of measures to mitigate them.

41. *ABCC awareness raising.* As the ABCC would be trained on environmental issues of the sector as well as on EA rules and procedures. For this purpose it would be necessary at the initial stage of the project implementation to organize a half a day workshop on specified issues.

42. *Training for Sub-financing Recipients.* The most critical group to be trained about the importance of environmental compliance includes farmers and entrepreneurs from agricultural and agro-processing sectors who will be receiving the sub-loans, and whom should be provided advice on the use of best available techniques to prevent/ mitigate impact of the fodder production and agro-processing technologies. The workshops for this group would include environmental

awareness and a practical exercise to observe and learn about sustainable and best available techniques in fodder production and diary and agro-processing activities.

43. *EMF disclosure and consultation.* The ABCC and CLMU disseminated the draft summary ESMF to the MOAFIM and MOF on February 10, 2016. Public consultations were held in Karakol on February 26, 2016. The final ESMF will be posted on the website of the ABCC and disclosed in the World Bank Infoshop on March 8, 2016.

Monitoring & Evaluation

44. A Baseline survey is expected completed under the ECAPDEV Grant for preparation of activities. Monitoring and Evaluation will be conducted at two levels: (i) monitoring of the project's progress and results; (ii) independent assessment of the project's results.

i. *Results Monitoring*. Monitoring of the progress of implementation of the project activities will be carried out by the respective PMUs: ABCC for Components 1 and 2, and CLMU for Component 3. The results of the monitoring will be reflected in quarterly progress reports to be submitted to the GOK and the World Bank. In the process of monitoring potential issues such as (i) elite capture, (ii) ethnic capture, and (iii) gender discrimination will also be monitored. In addition to the indicators reflected in Annex 1, the project will track other relevant indicators, including the project's and program's impact on household incomes and jobs/employment creation "better", and/or "more" jobs/employment, as well inclusivity, i.e., the jobs/employment created for women and youth.

ii. *Results Assessment*/*Survey.* An independent results assessment (inclusive of a beneficiary assessment) will be carried out at the end of the project, by a local consulting companies. Interviews with selected beneficiaries will be conducted to assess the results of the project, impact of the project's activities on the ground as well as establish any cases of: (i) elite capture, (ii) ethnic capture, and (iii) gender discrimination.

45. Independent M&E of project activities will be carried out during the regular (semi-annual) implementation support missions by the project team at the World Bank.

Role of Partners (if applicable)

46. Role of Partners is described in details in Annex 6.

Annex 4: Implementation Support Plan

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

Strategy and Approach for Implementation Support

1. *Overall Implementation Support*. The project is part of a larger program, and is responsible for the activities related to animal productivity and milk quality improvement on dairy farms. The Implementation Support Plan (ISP) has been designed based on the following considerations:

a) The project offers a comprehensive approach to support productivity improvements on dairy farms, which translates into the need to implement a large number of small-scale activities, and requires a broad set of expertise into the subject;
b) The multi-GP collaboration on this project will require planning of overlapping implementation support missions.
c) The multitude of other donors supporting the KDSDP will require regular dialogue and coordination of efforts.

Implementation Support Plan

2. The ISP is as follows:

(a) *Technical Implementation Support Team* (Task Team Leader(s), Livestock Specialist, Natural Resource Management and Farmer Training and Extension Specialist, Rural Finance Specialist, and Animal Health Specialist) will visit the country at least twice a year (on average, every six months), on implementation support missions. More frequent implementation support missions may take place during the first part of the project, as needed. Support of the Bank staff based in Bishkek will be used extensively, at minimum during the first year of the project implementation. The missions will review the implementation progress, provide recommendations and guidance, and agree on the action plan/next steps. Advice and guidance from the World Bank team will be available at other times through videoconferencing and local staff support.

(b) *Financial Management Implementation Support*: As part of its project implementation support mission, the Bank's Financial Management Specialist (FMS) will 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: (a) review the project's quarterly Interim Financial Reports as well as annual audited financial statements and auditor's management letter including remedial actions recommended in the auditor's Management Letters; and (b) during the Bank's on-site supervision missions, review the following key areas: (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) disbursement management and financial flows, including counterpart funds, as applicable; and (iv) 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.

(c) **Procurement support**. The World Bank's Procurement Specialist (PS) will join the regular implementation support mission. Separate procurement supervision missions will take place twice a year. The reports will be submitted to the Borrower.

(d) **Safeguards**. World Bank's Social and Environmental Specialists will join implementation support missions at least once a year throughout the project implementation period. More frequent missions may be organized, as needed.

3. The main focus in terms of support to implementation during:

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	- Selection and hiring of the consulting contractor with international experience - Hiring of the group mobilization and support contractor - Mapping of the project implementation coverage (sequence of villages); identification of specific needs - Selection of locations for veterinary posts - Singing of the MOUs with the DBGs, disbursement of funds to beneficiaries; utilization of funds received - Design and implementation of training programs - Training of trainers and beneficiaries M&E of the project results	Project Management Livestock Specialist Natural Resource Management/Farmer Training and Extension Specialist Rural Finance Specialist Animal Health Specialist Procurement Specialist Financial Management Specialist Environmental Specialist Social Specialist	US$130,000	Close coordination and joint supervision missions
13-30 months	- Implementation of technical assistance and training on farms - Continues utilization of the Revolving Fund - M&E of project results and impact.	Project Management Livestock Specialist Natural Resource Management/Farmer Training and Extension Specialist Rural Finance Specialist Animal Health Specialist Procurement Specialist Financial Management Specialist Environmental Specialist Social Specialist	US$120,000 per year	Close coordination and joint supervision missions
31-36 months	- Completion of project activities - Project results assessment - Data collection and preparation of the ICR	Project Management Livestock Specialist Natural Resource Management/Farmer Training and Extension Specialist Rural Finance Specialist	US$60,000	Close coordination and joint supervision missions

		Animal Health Specialist Procurement Specialist Financial Management Specialist Environmental Specialist Social Specialist		

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Project Management and Support	20 s/weeks a year	2/3 cost-shared missions per year	HQ and Field based
Livestock Specialist	6 s/ws per year	2 cost-shared missions per year	
NRM/Training and Extension Specialist	7 s/ws per year	2 cost-shared missions per year	
Rural Finance Specialist	4 s/ws per year	2 cost-shared missions per year	
Animal Health Specialist	2s/w per year	One mission per year	
Procurement Specialist	4 s/ws per year	None	Field based
Financial Management Specialist	4 s/ws per year	None	Field based
Environmental Specialist	2 s/ws per year	1 cost-shared mission per year	
Social Specialist	2 s/ws per year	None	Field based

Partners

Name	Institution/Country	Role
TBD		

Annex 5: Financial and Economic Analysis

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

1. The analysis attempts to identify quantifiable benefits directly relating to the increased milk productivity of cows in the region or that can be attributed to the project's implementation. The financial and economic analysis of the project is based on the expectation that the average milk output per household will be increased by 15 percent. This assumption reflects increases of milk production in the Issyk-Kul region of the country. The scenario presented in the analysis is conservative (based on conservative assumptions and estimates) and based on conditions prevailing at the time of the project preparation.

Financial Analysis

2. In order to estimate the economic benefits of the increase of production of milk a financial model presenting milk yield increase by 15 percent per one household was developed. This model includes revenues, operating costs and the calculation of gross margins "before" and "after" the implementation of the project. The model shows that the financial benefit from the increased milk yield is US$81.6 per cow per year, expressed in the form of increased financial margin of milk production. The analysis was based on the assumption that the farm gate price of fresh milk will be 12.5 soms/litre in summer and 18.5 soms /litre in winter.[19]

3. According to the official statistics, in 2010-2014 the number of cattle in the Issyk-Kul region grew from 179.2 thousand to 209.9 thousand heads, including cows the number of which increased from 91.4 thousand to 106.4 thousand heads[20]. There was a steady increase in the number of animals. As can be seen from the Table 1 below, the number of cows has grown at an accelerated rate over the past five years (from 1.1 percent in 2010 to 5.6 percent in 2014) and averaged to 3.3 percent [21] per year. As a result, over the past five years, the number of cows increased by about 15 thousand heads. The projection of the number of cows in the region over the next eight years, including a six-year period of the project, is developed as part of this analysis. The forecast is based on a conservative estimate of the growth rate of cows number - 2.3 percent [22] per year. According to the forecast, by the end of the project (2021) the number of cows in the region will be increased by about 12 percent, i.e. it will reach 127.3 thousand heads.

[19] In 2014, farm gate milk prices were 22 soms/litre in the summer and 15 soms/litre in winter. However, in 2015, prices fell dramatically down to 10 soms /litre in summer and 15 soms/litre in winter. Due to strong volatility of prices in the past two years, an average prices for 2014-2015 were used in the analysis.
[20] As of year-end.
[21] The official statistics on the number of cows as of at the end of the year 2015 will only be available in early 2016, thus a rough estimate of the growth of number of cows in 2015 was made. It was based on the average growth in the number of cows in the last three years (2012-2014 years), which amounted to 4.3 percent.
[22] Calculated on the basis of growth in the total number of cows in the Kyrgyz Republic for the last five years.

Table 1. Population of cattle and cows in Issyk-Kul region in 2010-2023 (including forecast for 2016- 2023).

Calendar years	2010	2011	2012	2013	2014	2015 (f)	2016 (f)	2017 (f)	2018 (f)	2019 (f)	2020 (f)	2021 (f)	2022 (f)	2023 (f)
Project years							PY1	PY2	PY3	PY4	PY5	PY6		
Cattle, 000s heads	179.2	184.9	192.0	200.0	209.9	218.2	223.2	228.4	233.7	239.0	244.6	250.2	256.0	261.9
Including:														
Cows, 000s heads	91.4	93.7	97.1	100.8	106.4	111.0	113.5	116.2	118.8	121.6	124.4	127.3	130.2	133.2
Growth rate	1.1%	2.5%	3.6%	3.8%	5.6%	4.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%

4. It is estimated that the share of milking cows in the total number of cows is about 60 percent. Thus, in the first year of the project there will be about 68.1 thousand heads of milking cows (see Table 2 below). It is expected that by the end of the project implementation there will be about 76.4 thousand of milking cows, out of which about 60 percent will increase milking productivity by 15 percent.

Table 2. Projection of population of milking cows in project area with milk yield increased by 15 percent.

Years	All cows, 000s heads	Milking cows, 000s heads	Milking cows with increased productivity by 15 percent	
			%	000s heads
2016 (PY 1)	113.5	68.1	10%	6.8
2017 (PY 2)	116.2	69.7	20%	13.9
2018 (PY 3)	118.8	71.3	30%	21.4
2019 (PY 4)	121.6	72.9	40%	29.2
2020 (PY 5)	124.4	74.6	50%	37.3
2021 (PY 6)	127.3	76.4	60%	45.8
2022	130.2	78.1		
2023	133.2	79.9		

5. Over the past five years the average milk yield in the Issyk-Kul region varied from 2.06 to 2.08 tons/cow. It is assumed that due to the project activities, milk productivity will be increased by 15 percent and will reach 2.4 tons/cow.

Table 3. Milk yield in Issyk-Kul region in 2010-2014.

	2010	2011	2012	2013	2014	Project target
Milk yield, tons/cow (average)	2.08	2.07	2.08	2.06	2.08	2.4

Economic Analysis

(d) Economic Analysis was conducted: (i) for Phase I, on the basis of the above data, as well as (ii) for the entire program cost of US$25 million, with a 6 years duration and potential milk yield increase of 25 percent. The result for Phase I (US$ 5 million total cost) with the milk yield increase

of 15 percent in three years is a very high ERR of about 44 percent. The ERR for the entire 6-year program (Phases I and II) with US$25 million of total cost and with the milk yield increase of 25 percent, is estimated around 17 percent. The economic NPV for Phase I is positive and amounts to around US$1.6 million. The planning horizon of 15 years was selected to allow for the long-term benefits of the project. The discount rate of 6 percent was used. Economic analysis showed that the project has a good economic return and the investment is well justified from the economic point of view.

6. **Sensitivity analysis.** Economic returns were tested against changes in benefits and costs and for various lags in the realization of benefits. In relative terms, the ERR is equally sensitive to changes in costs and in benefits. In absolute terms, these changes do not have a significant impact on the ERR, and the economic viability is not threatened by either a 10 percent decline in benefits or by a 10 percent increase in costs. A one-year delay in project implementation will reduce the base ERR to about 6.6 percent.

7. The project is quite sensitive to the reduction of milk yields. For example, a decrease of milk yield by only 10 percent (not 15 percent as expected) would make the ERR to drop to 2.7 percent, and the project would no longer be acceptable from the economic point of view. A significant reduction in the number of milking cows would also make the project unacceptable from the economic point of view.

Table 4. Sensitivity analysis.

Sensitivity Analysis (15-year period)	Base case	Costs Increase			Increase of Benefits		Decrease of Benefits			Delay of Benefits	
		+10%	+20%	+50%	+10%	+20%	-10%	-20%	- 30%	1 year	2 years
ERR	8.5%	7.3%	5.4%	1.2%	10.7%	12.8%	6.2%	3.7%	1.2%	6.6%	5.1%
ENPV (US$ mln)	1.6	0.9	-0.4	-4.3	3.1	4.7	0.1	-1.4	-2.9	0.5	-0.8

Annex 6: Description of the Kyrgyz Dairy Sector Development Program

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

Program Description

1. To help the country capitalize on market opportunities presented by the Eurasian Economic Union, the Kyrgyz Dairy Sector Development Program (KDSDP) was initiated with support from IFC in 2015, to help ensure steady milk exports to Kazakhstan through building a dedicated dairy value chain.

2. Value chain development requires a holistic approach, covering the technical knowledge and capacity building of aggregators, providing access to knowledge, information and finance to both aggregators and farmers, improving the investment climate to enable and facilitate export of agricultural production, and development of the necessary supporting public services. This is the approach adopted under the KDSDP.

3. ***The overall development objective of the Dairy Sector Development Program*** in the Kyrgyz Republic is to increase export of Kyrgyz dairy products to neighboring countries (primarily Kazakhstan and Russia), increase incomes of dairy farmers, and create new jobs along the dairy supply chain.

4. The strength of a supply chain depends on the ability and willingness of its aggregator (a processor, exporter or large retailer), the pull factor that keeps the supply chain together, to support and invest in developing its suppliers. Yet, oftentimes, their competitiveness remains limited due to lack of sufficient and high quality raw materials, access to sub-financing, to markets and lack of public infrastructure. To increase the capacity and competitiveness of all value chain participants in a sustainable manner, both public and private investment are required. Then, to fuel the business rationale for greater investment by private sector, wide range of public sector reforms in support of the sub-sectors are also needed, as well as commercially sustainable linkages between all players in the supply chains.

5. The initial effort by IFC's Central Asia Agrifinance Project (CAAP) in exploring the dairy sector development was funded by the Austrian Government (around US$1 million allocated to Kyrgyzstan), with additional funding for the project provided in 2015 by the Government of Japan. The focus has been mostly to support processors and their larger farms/suppliers. The issues related to animal health and low productivity of primary production were and remain key concerns that require a more comprehensive approach. To make the value chain development successful, it is imperative that on-farm improvements are supported to ensure high quality and increased volume of milk, as well as necessary public sector investments. Thus, in 2015, the initiative grew into a comprehensive[23] program – now called Kyrgyz Dairy Sector Development Program. The Program

[23] The approach stems from a joint World Bank-IFC Kyrgyz Republic Agribusiness Study[23] (2014), which identified that there is not one single issue in the agricultural sector, the resolution of which would unlock the potential for sector development. A comprehensive approach is required to resolve the multitude of issues hindering sector development, which was the approach adopted for the Kyrgyz Dairy Sector Development Program.

is expected to cover all aspects of the dairy value chain: cattle breed improvement, animal feed improvement, improvements of animal productivity and milk quality, animal health and hygiene, milk collection upgrades, laboratory and testing capacity (animal disease control, food safety and milk quality) upgrades processing capacity upgrades, food safety standard upgrades, enabling regulatory framework, and export promotion. The KDSDP further developed under the leadership of the Ministry of Agriculture, Food Industry and Melioration (MOAFIM), which promoted the Program within the Government. In May 2015, the KDSDP was presented to the Investment Council chaired by the Prime Minister of Kyrgyz Republic who instructed the MOAFIM to work on a draft decree on the implementation of the KDSDP. The draft decree and the proposed implementation plan have gone through several rounds of comments by relevant ministries and the decree is currently pending the final clearance from the Ministry of Justice before the signing for implementation by the Prime Minister.

6. A key feature of the KDSDP is the implementation of the dairy zone in Issyk Kul Province as a pilot. Dairy zoning program will start with animal identification, registration and vaccination activities that aims at placing a control over the animal health and movement in the zone.

Program Financing

7. The pilot Program in Issyk-Kul is expected to be funded by a number of financiers, including WBG, Governments of Austria and Japan, FAO, IFAD, DFID and other donors, private sector and GOK. The total cost of the IDA contribution is estimated at US$25 million. Each donor/participant in the program will focus on a specific area, in order to ensure efficient use of the funding and avoid financing the same activity twice.

8. The entire program is financed by the following agencies/donors:

Financier/Donor	Amount, US$ equivalent	Implementing Agency	Key Area of Activities	Status of Activities
Government of Austria	1.0 million	IFC	Strengthening the food safety regulations and private sector capacity	Completed
Government of Austria	1.0 million	F&M GP/IFC	(1) Support to dairy processors; (2) Support to Financial institutions	On-going
Government of Japan	0.4 million	F&M GP/IFC	(1) Support to dairy processors; (2) Support to Financial institutions	On-going
DFID/SECO	2.33 million	T&C GP/IFC	(1) Legislative and regulatory reforms for animal health;	On-going

			(2) Institutional reforms for animal health	
IFAD/GOK	Total: 25 million in 3 Regions	GOK	(1) Support to private veterinarians (2) Milk cooling equipment	On-going
FAO	0.6 million	FAO	(1) On-farm dairy practices improvement (2) Software for animal identification	On-going
JICA	1.57 million	JICA	(1) Development of Milk and Dairy inspection Master plan (2) Trainings for vets and other dairy sector participants	On-going
IDA	5 million + (estimated: up to 25 million)	GOK	(1) Productivity improvement on dairy farms; (2) Support to veterinary services (3) Support to the AI system	Proposed
Islamic Development Bank	5 million	GOK	(1) Animal Registration and identification in Issyk-Kul (2) Vaccinations (3) Regional laboratory upgrades	Requested

9. Detailed Description of the Program Components:

(a) WBG/IFC: Central Asia Agri-Finance Project (US$5.0 million, including US$1.4 million for the Kyrgyz Republic, funded by Governments of Austria and Japan)

10. The project has two key components. The first component is to work on improving the capacity and competitiveness of the participants of select agri-supply chains to avail them increase export market opportunities and get better access to financing**.** The second, to work on improving the capacity of FIs to provide financing and solutions to supply chains to boost their competitiveness and increase their opportunities to reach the export market. CAAP has been spearheading the development of the dairy sector initiative to achieve the following results:

- Agreement with MOAFIM and the Governor's office on the dairy zoning pilot in Issyk-Kul;

- Together with MOAFIM, presented the KDSDP to the Investment Council; the Prime Minister instructed MOAFIM to prepare a draft of decree and start implementation; Draft decree is at the final stage of clearances (with Ministry of Justice);
- Donors' Dairy Sector Coordination Group formed, co-chaired by the WB and FAO; the donors have agreed to interact with the Government as a group and leverage each other's projects in dairy /meat sector; IFAD and GIZ have agreed to align projects in Issyk-Kul dairy zone;
- The KDSDP's pilot was presented to key stakeholders in 2-day round table in Issyk-Kul (July 2015);
- Three main processors in Issyk Kul assessed (July – August 2015); two processors have agreed to work on their supply chains; one advisory services agreement signed (January 2016);
- 2 processors were taken on a study tour to see dairy production facilities in Belarus (January 2016).
- Studies: zoning concept feasibility study (completed); Kazakhstan dairy sector and import of dairy products from KG (completed).
- A web-based agri-risk assessment tool for financial institutions adapted for the Kyrgyz Republic; design of supply chain solution for dairy supply chain started.

(b) WBG/IFC: Kyrgyzstan Investment Climate Improvement Project (US$2.5 million, funded by Governments of Switzerland (SECO) and UK (DFID))

11. There are two major components - Legislative and Regulatory Reforms for Animal Health, and Institutional Reforms for Animal Health. These two components aim to rationalize the institutional mandates for supervision of the sector, while improving regulation and building capacity among implementing officials. Thus far, project has achieved following key results:

- Policy note on improving the agribusiness environment in the Kyrgyz Republic was prepared in 2014;
- The Review of the Regulatory Environment for the Dairy Sector in the Kyrgyz Republic was prepared in 2015;
- The draft Program on development of the dairy sector and creation of the zone, free of animal diseases, in the Issyk-Kul region was developed.

(c) IFC: Agribusiness Standards Advisory Program in Europe and Central Asia (US$4.5 million, funded by Austrian Government, approximately US$1.0 million allocated to the **Kyrgyz Republic)**

12. The IFC Agribusiness Standards Advisory Program assists local companies in applying food safety standards throughout the agribusiness value chain while strengthening the capacity of local consultants. Improved standards help agribusiness firms meet regional and export market requirements while building a foundation to mobilize investments and help the agribusiness industry realize its full potential. The project completed the following activities in the Kyrgyz Republic:

- Organized IFC's International Food Safety Forum and five training events for food processors in Bishkek and Issyk-Kul;
- Assessed three main processors in Issyk-Kul in regards of food safety standards;
- Advised one dairy processor in Issyk-Kul in implementing HACCP;

- Sponsored a study tour for two possessors to IFC's clients dairy processing companies in Belorussia.

(d) WBG/IDA: Integrated Dairy Productivity Improvement Project (US$5.0 million, up to US$25.0 million)

13. The project is aimed at supporting the necessary public investments (such as veterinary posts and animal health laboratory upgrades), as well as private sector investments (such as support the AI services and breeding infrastructure, farmer training), and provide a small financing facility (Revolving Fund) to support on-farm investments. Project will be implemented in two phases with the total finding of US$20.0 million. First phase (Phase I) amount is US$5.0 million, to be followed by the second phase (Phase II) in the amount of US$20.0 million through Additional Financing instrument.

(e) Islamic Development Bank (US$5.0 million – TBC)

14. Islamic Development Bank (IsDB) has been approached to provide financing in the amount of US$5-6 million, for the following activities:

- Animal Registration and Identification in Issyk-Kul Region, but also providing support to the State Enterprise Malaman, planned to be created for the operation of the Animal Identification and Registration System.
- Vaccinations of 100 percent of cattle in the project area, as well as sheep and goats (FMD for the entire region and anthrax in the endemic areas), including procurement of vaccines as needed, vaccine quality testing, pre and post-vaccination sero monitoring as well as regular sample collection and cattle herd testing for brucellosis and tuberculosis.
- Animal Disease Diagnosis and Monitoring, supporting the upgrading of the regional veterinary laboratory located in Karakol, Issyk-Kul Region. This will include construction of a new compact laboratory, procurement of modern equipment, chemicals, reagents and diagnostic inputs for animal disease diagnosis and surveillance, vaccine quality control, as well as laboratory staff training.

(f) FAO

15. FAO has been working with the MOAFIM since 2014 to design the animal identification software program and cost out the implementation of the animal identification program on the national level. In addition, FAO has started two smaller projects, which also contribute to the KDSDP: the implementation of National Kyrgyz Veterinary Association, aimed at institutional development through establishing and strengthening regional veterinary associations, and a sustainable agriculture development project in the Issyk-Kul region, targeted at a small group of dairy producing households. As animal identification and registration is crucial component of the KDSDP and the zoning concept, the WBG is working closely with FAO and MOAFIM to start implementing the registration in the Issyk-Kul region as soon as the funding for the implementation is secured.[24]

[24] The Kazakh funds initially earmarked for this work has been withheld by the Kazakh Government. As a result, the WBG is working with other donors (IsDB, DFID) to identify funding for this activity.

(g) IFAD

16. IFAD launched its Livestock and Market Development Project in 2013. The project aims to support community pastures with 3 components: (i) Community-based pasture management (regulatory reform, mapping, improving pasture management plans), (ii) Improving the livestock productivity and animal health services (development of private veterinary services in each local authorities, capacity building of private veterinarians, community mobilization), and (iii) Market Initiatives / value chain development (Business planning of SMEs and investment). The project's goals well complement the WBG's dairy sector program and both teams have been coordinating the project activities.

(h) JICA

17. JICA project's provides technical assistance to the MOAFIM in developing a Master Plan on Inspection of quality and safety on Milk and Dairy Products by the end of 2016. The Master Plan will form an important part of the KDSDP.

Program Participants

18. The table below provides a more comprehensive list of potential partners and their roles:

No	Agency	Expected role
01	MOAFIM	Lead ministry for the KDSDP
02	Ministry of Economic Development and Trade	Trade, policies, inter-cooperation, export guidelines
03	GOST – Kyrgyzstan Standard Organization (NISM)	Food safety , inspection, food quality control laboratory, food safety regulations, HACCP audit
04	State Inspectorate on Veterinary and Phyto-sanitary safety under the gov't	Veterinary sanitary regulation, veterinary inspection , disease free zoning, drug and vaccine quality control
05	Department of state Veterinary under the MOAFIM	Vaccination, pre& post vaccination sero monitoring, disease control and disease monitoring, border check posts, animal identification & registration
06	Kyrgyz Veterinary Research Institute	R&D development, veterinary disease diagnostic laboratory, drug and vaccine quality control, OIE protocols & accreditation, linkage with international livestock institutes
07	Veterinary Chamber	Veterinarian certification, OIE accreditation
08	Private / community veterinarians, veterinarian associations	Field implementation of animal identification, registration, vaccination,

		animal health and breeding, advisory and extension services
09	Ministry of Health – Department of Sanitary	
10	Local administrative bodies	Certification for farmers, milk collecting agents, milk processing companies
11	State selection and breeding Centre, Kyrgyz Research Institute of Livestock and fodder	Bull stud and breeding farm , frozen semen production, field level artificial insemination centres, breeding service to the farmers
12	Training, Advisory and Innovation Centre (TAIC), Rural Advisory Services	Farmers' training, extension and advisory services
13	Rural Advisory Services, Livestock Farmers' Association	Organization of Farmers' groups and advisory
14	Suit-Bulak (Dairy Spring), Ak-Bulak, Ak-Jalga	Milk collection, processing, export
15	The Investment Council (chaired by the Prime Minister)	Approval of investment programs
16	Local authorities	
17	FAO	Animal identification, data management systems
18	WBG and other International donors	Funds, Project support, policies, investment assistance, export facilitation

Annex 7: GHG Accounting for Agricultural Projects

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

Background and Methodology

1. In its 2012 Environment Strategy, the World Bank has adopted a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment lending. The quantification of GHG emission is an important step in managing and ultimately reducing GHG emission, and is becoming a common practice for many international financial institutions.

2. To estimate the impact of agricultural investment lending on GHG emission and carbon sequestration, the World Bank has adopted the Ex-Ante Carbon-balance Tool (EX-ACT), which was developed by the Food and Agriculture Organization of the United Nations (FAO) in 2010. EX-ACT allows the assessment of a project's net carbon-balance, defined as the net balance of CO_2 equivalent GHG that were emitted or sequestered as a result of project implementation compared to a without project (WOP) scenario. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in equivalent tons of CO_2 per hectare and year.

Application of EX-ACT

3. Project boundaries. The Development Objective of the Project it to contribute to achievement of the Dairy Sector Development Program's objectives by improving animal feeding, breeding and management practices in the project area, as well as animal health care and veterinary services, through investments and training support. The GHG accounting considers various aspects of integrated dairy which includes improved grasslands, improved pastoral lands, and better livestock management practices.

4. **Data source.** Data is provided from field visits conducted by the team.

5. **Basic assumptions**. Kyrgyz Republic has boreal climate with dry moisture regime. The dominant soil type is High Activity Clay (HAC) soils. The project implementation phase is three years and the capitalization phase is assumed to be 17 years. The "without project scenario" (WOP) is assumed not to differ from the "initial scenario". This default assumption is deemed reasonable as changes in livestock activity and management is crucially dependent on the technology available, which is a contribution of the project. The analysis further assumes the dynamics of change to be linear over the duration of the project.

6. **Land use change.** The project aims to increase the total area of alfalfa production currently in the region by 500 ha. To achieve this, it will convert 400 ha of land currently used for annual crops and 100 ha of set aside land.

7. **Grassland systems**. Grasslands are currently severely degraded in the region. The project will improve 300 ha of grasslands with inputs improvement

8. **Livestock**. There are currently 103,570 heads of dairy cattle in the project zone. The project aims to increase the number of dairy cattle to 150,000. Additionally the project will implement improved feeding practices, specific agents, improved breeding to 60 percent of the targeted 150,000 heads.

9. Inputs investments. Currently there is negligible use of fertilizer on grasslands and pastoral lands. To improve the alfalfa production in the project area, it is estimated that 6 tons of phosphorus and 37 tons of potassium will be applied. This estimation is based on the ideal rates of fertilization of alfalfa on lands with poor soil health.[25]

Results

10. **Net carbon balance.** The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the without project scenario. Over the project duration of 20 years, the project constitutes a carbon source of 1,212,546 t-CO2-eq. Per hectare, the project provides a source of 5 t-CO2-eq, which is 0.2 t-CO2-eq each year (Table 1).

Table 1: Results of the ex-ante GHG analysis in tCO_2-eq

Components of the project	Gross fluxes		GHG Balance
	Without	With	
	All GHG in tCO2eq		
	Positive = source / negative = sink		
Land conversion (500ha) from annual crops and set-aside land to alfalfa	0	-14,748	-14,748
Perennials converted from annual crops and set-aside land	0	-70,688	-70,688
Improved grasslands	0	-39,120	-39,120
Increased number of dairy cows and improved livestock management	12,177,139	13,513,783	1,336,644
Inputs intensification - fertilizers			
Phosphorus	0	81	81
Potassium	0	376	376
Total	12,177,139	13,389,685	**1,212,546**
Per hectare	49	54	5
Per hectare per year	2.4	2.7	**0.2**

[25] Lissbrant, Sofia, W. Kess Berg, Jeffrey Volenec, Sylvie Brouder, Brad Joern, Suzanne Cunningham, and Keith Johnson. "Phosphorus and potassium fertilization of alfalfa." Ay-331-W. Purdue University Extension, West Lafayette, IN (2009).

11. **Carbon sources and sinks**. The main carbon sources are primarily from increased number of dairy cattle and increased fertilizer use on pastoral lands. Improved grasslands and land use change will lead to a carbon sink for the project.

12. **Emissions intensity**. In terms of emissions intensity (Table 2), the introduction of improved livestock management practices to 60 percent of livestock is estimated to decreased emissions intensity from 18.1kg-CO2/kg of milk to 15.5kg-CO2/kg of milk.

Table 2: GHG emissions intensity

	Number of cows	**Milk yield per cow (kg)**	**Carbon balance (tCO_2eq)**	**Emissions intensity ($kgCO_2eq$ /kg of milk)**
Without project (current dairy cows)	103,570	2,013	3,772,001	18.1
With project (60% with improved livestock practices)	90,000 (improved livestock practices) + 60,000 (without improved livestock practices)	2,314 (improved livestock practices) + 2013 (without improved livestock practices)	5,018,645	15.5

Annex 8: Market Potential for Kyrgyz Dairy Products

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

1. **Milk production is a key source of food and income for the rural population in Kyrgyzstan.** Agriculture is an important sector for the country from the economic as well as from the social point of view. It contributes 15.2 percent (in 2015) to the country's GDP, and the livestock (milk and meat) sector is one of the most important subsector in agriculture comprising 46 percent of agricultural output. 90 percent of agricultural lands are used for pastures and for mowing hay (9.6 million ha). In terms of caloric contribution, after wheat, which provides 38 percent of caloric energy, milk comes in second at 12 percent, while sugar (8 percent), potatoes, meat and maize are on par with a 7 percent contribution each. Milk production is a key source of food and income for the rural population in the country, comprising of 3.9 million people (67 percent of the country's population).

2. **Domestic market supply and demand indicate significant investment opportunities in the milk processing industry. The** Kyrgyz Republic produced 1.45 million ton of raw milk in 2014, but ***less than 10 percent of the milk was processed*** in the country (table 1). Although overall production growth was on average +2.0 percent per year (table 2), most of the milk is individually consumed as liquid milk (table 1) with per capita milk consumption of 215 kg, which is one of the highest levels globally (table 3). However, this can be changed because there is a significant domestic urban market for processed milk products - around 2 million people. All this indicates that there is a significant investment opportunities in the milk processing industry in the Kyrgyz Republic.

Table 1. Country Milk Balance, 2013[26]

	000 t
Beginning stocks	62.3
Production	1,408.2
Import	25.7
Total "In":	**1,496.2**
Individual consumption	1,175.0
Processed	122.9
Export	126.7
Losses	1.7
Year-end stocks	69.9
Total "Out"	**1,496.2**

Table 2. Milk production growth[27]

Milk Production, 000 t		% Growth to Previous Year
2010	1,359.9	
2011	1,358.1	-0.13%
2012	1,382.4	1.79%
2013	1,408.2	1.87%
2014	1,445.5	2.65%

[26] Kyrgyzstan in numbers, 2015, Kyrgyzstan National Statistics Committee
[27] Kyrgyzstan in numbers, 2015, Kyrgyzstan National Statistics Committee

Table 3. Milk and dairy products consumption per capita of population (milk equivalent)[28]

Year	Kg/yr	% change to previous year
2010	212	
2011	213	1.71%
2012	212	1.21%
2013	215	3.44%
2014	216	2.50%
2015	215.6	0.74%

3. **The structure of domestic milk processing places Issyk-Kul region in the three largest in the country.** According to the Kyrgyzstan State Statistics Agency there are ***40 dairy processing companies*** operating in the country (the list of companies is not publicly available). The distribution of milk processing by regions shows that the three largest processing regions in the country are Chui, Talas and Issyk-Kul (table 4, FAOSTAT). Chui region and Bishkek city make up 66 percent of the processed milk in the country, followed by 20 percent in Talas and 12 percent in Issyk-Kul Regions. All three regions are located close to the Kazakhstan border and make up for the entire export volume of dairy products to Kazakhstan.

Table 4. Raw milk quantities received for processing by the dairy industry[29]

Province	2010	2011	2012	2013	2014	Share
Issyk-Kul	17,357	13,405	15,202	16,628	16,346	12%
Jalal-abad	132	173	104	1,823	1,899	1.3%
Naryn	648	719	715	775	956	0.7%
Batkent	2	2	2	2	2	0.002%
Osh	29	44	40	39	95	0.1%
Talas	17,600	22,358	23,832	23,715	27,925	20%
Chui	64,404	55,338	51,553	53,588	62,428	44%
Bishkek city	32,355	26,144	29,374	25,543	31,214	22%
Osh city	316	527	359	514	429	0.3%
National level:	**132,842**	**118,709**	**121,179**	**122,626**	**141,292**	100%

4. Milk production in the Kyrgyz Republic is globally competitive. The Kyrgyz Republic is able to produce milk at competitive cost compared to global average and global high values (table 5). Further analysis of the cost of milk production in the Kyrgyz Republic shows the lowest among its close neighbors such as Kazakhstan, Belarus and Russia (table 6).

[28] Kyrgyzstan National Statistics Committee
[29] Kyrgyzstan National Statistics Committee

Table 5. Global milk production cost[30]

Cost of Milk Production	USD/kg
Kyrgyzstan (9-10 som)	0.15
Global max (Switzerland)	1.18
Global min (Cameroon)	0.05
Global average	0.46
China	0.60

Table 6. Regional Farm Gate Milk Price[31]

Countries	2015
Russia	0.31
China	0.57
Belarus	0.20
Kazakhstan	0.24
Kyrgyz Republic	0.15

5. There are several factors contributing to such competitive edge:

- **First**, the largely pasture-based production system of the Kyrgyz Republic places the country in the unique position in the production of the cost-efficient and high quality milk. The Kyrgyz Republic has 5-6 months of pasture grazing period in the year (April – September) and can produce as much as 3 tons of milk per head with the production economics of as low as US$0.09/L of milk during the pasture period. Similar production parameters are found in Switzerland and New Zealand. Pastures can also be taken advantage of for winter-feeding if properly managed. Farmers can store enough hay coming from both pastures and irrigated land.
- **Second**, natural grass fed milk is best suitable for high quality cheese production such as Parmesan. Such quality milk can be highly competitive globally.
- **Third**, other resources such as water is in abundance for the cultivation of feed crops, labor is cheaper and inputs costs are at lower compared to those in the neighboring countries.
- **Forth,** the macroeconomic conditions. Because the Kyrgyz Republic's general export base – and hence, its ability to generate foreign currency reserves – is limited compared to those of the other three countries, the relative strength of KG Som cannot be sustained for too long.

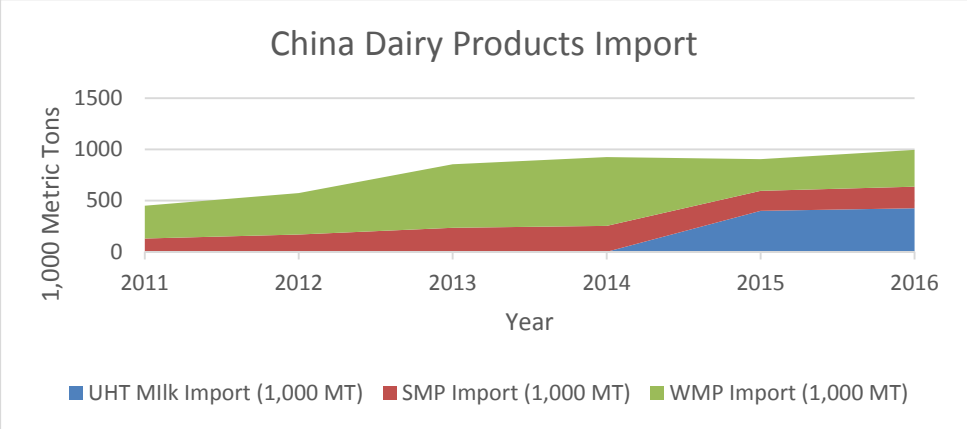
6. Considering these advantages, further improvements in farm productivity through improved breeding, feeding and general husbandry practices, smoothing out the seasonality of production, adoption of food safety standards, obtaining proper quality and food safety certifications, will ease the competition for Kyrgyz producers against the low-cost processed dairy products coming from countries such as Russia, Belarus and Ukraine. For example, Belarus has not been able to pass the EU quality requirements due to higher than allowed levels of antibiotics and microbial counts.

7. **Kyrgyz dairy products can potentially tap into huge export markets.** Currently, Kyrgyz dairy products' export volume is not significant (table 1). With improvements in food safety and traceability, the list and volume can increase substantially. The increase in volume will come from the increase in farm productivity by 2-3 times and utilization of the processor capacity by at least 50 percent (most processors are operating at 50 percent of their capacity in the summer and 20 percent in the winter). Market opportunities exist in at least three neighboring counties.

[30] IFCN Dairy Report 2015
[31] IFCN Dairy Report 2015

8. China will provide of additional 13 million consumers of milk in the short period. During 2014-2015, due to reduced milk demand globally, milk prices were soft. The most important change came on Oct. 29, 2015 when the Chinese government announced that Chinese families would be allowed to have two children (for the last 30 years only one child was allowed). If we look at the current population of China (1.3 billion people), a 1 percent birth rate would lead to 13 million additional consumers of milk in a short period of time. As a result, starting in about 9 months from this date, the market for dairy products is expected to start to improve on a long-term basis. Although China is already a market for the EU, Australia and New Zealand, the Kyrgyz Republic can still find its niches market in this country due to its close proximity and cheaper production economics. In 2016, forecasted import from China will be 425,000 tons of UHT Liquid Milk, 210,000 tons of Skim Milk Powder and 360,000 tons of Whole Milk Powder (figure 1).

Figure 1. China Dairy Import[32]



9. Russia is opening up for Kyrgyz Dairy Companies. Since the EU-Russia sanctions and the loss of the Russian market for Ukraine, a large share of the market in dairy products is potentially available for export from the Kyrgyz Republic. Even if Ukrainian product exports to the Russian market resume, they will be less competitive due to higher customs tax applied to Ukraine products that were recently introduced. Recently, 12 companies in the Kyrgyz Republic have received permission to export to Russia (table 7).

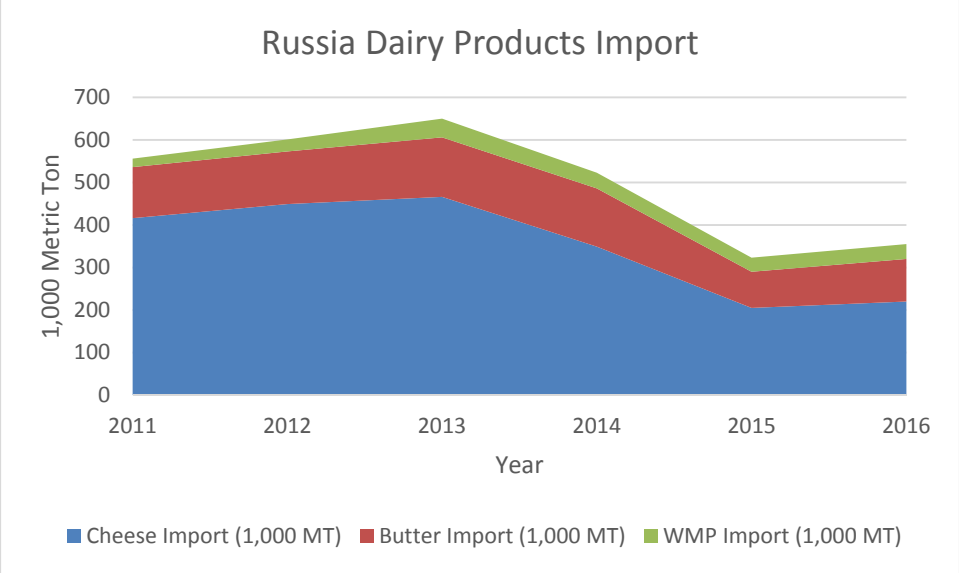
[32] Dairy: World Markets and Trade, Dec 2015, Foreign Agriculture Service, USDA

Table 7. Companies with the permission to Export to Russia and Kazakhstan

1	Ak-Sut LLC	CHUI
2	Bishkek sut JSC	CHUI
3	Umut & Co LLC	CHUI
4	Kant sut LLC	CHUI
5	Ursus LLC	CHUI
6	Artesian LLC	CHUI
7	Shin-Line LLC	CHUI
8	Emilia LLC	TAL
9	Tuganbaev private entrepreneur	TAL
10	Talas sut CJSC	TAL
11	Ak -Zhalgan LLC	IK
12	Sut-Bulak LLC	IK

10. In 2016, forecasted imports from Russia will be 220,000 tons of cheese, 100,000 tons of butter and 35,000 tons of Whole Milk Powder (Figure 2).

Figure 2. Russia Dairy Import[33]



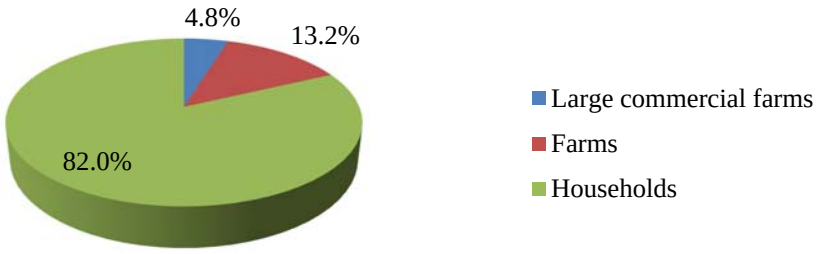
11. Kazakhstan's market is favorable for Kyrgyz milk. Currently, seven companies have the permission to export their products to Kazakhstan. The competitiveness of Kyrgyz milk is driven by the following key factors that are present in Kazakhstan:

- ***Unfavorable production structure.*** On the supply side, the Kazakh dairy sector is dominated by individual households with 2-3 cows (Figure 3). They constitute 85 percent of the total milking herd and 82% percent of total milk output. The emerging large commercial farms account for only 2.6 percent of the herd size and 4.8 percent of the raw milk production. Apart

[33] Dairy: World Markets and Trade, Dec 2015, Foreign Agriculture Service, USDA

from targeted government subsidies for the large farms, the structure of the dairy sector in Kazakhstan is about the same as in the Kyrgyz Republic and is facing the same issues related to low productivity, animal health, poor animal husbandry practices. This similarity makes possible for the Kyrgyz producers to be competitive in the Kazakh market.

Figure 3. Structure of the production of milk by types of farms, 2014[34]



- ***Insufficient output.*** Although the output has almost recovered to its 1992 level due to some improvement in breed composition and higher milk yields, it remains insufficient to meet the domestic demand. Kazakhstan's milk balance shows that ***only 25 percent of its milk is processed*** (table 8). This means that processing companies are operating at less than their capacity. Overall, it is estimated that the country experiences a shortage of milk for processing at 500 thousand tons. With prospects of growing demand due to factors such as increased income, change in taste and nutrition preferences, the size of the Kazakh market is only to get bigger.

Table 8. Kazakhstan's milk balance trend 2009-2013

000 t	**2009**	**2010**	**2011**	**2012**	**2013**
Beg. Stocks	609	620	610	609	574
Production	5,304	5,381	5,233	4,852	4,930
Import	544	357	502	521	539
Total IN	**6,457**	**6,358**	**6,345**	**5,982**	**6,043**
Individual consumption	4,168.3	4,065.4	4,098.5	3,886.3	4,077.7
Processing	1,621.5	1,645.1	1,599.7	1,483.2	1,507.3
Export	14	5	5	8	30
Losses	32	32	32	30	30
Ending stocks	620	610	609	574	397
Total Out	**6,456**	**6,357**	**6,344**	**5,981**	**6,043**

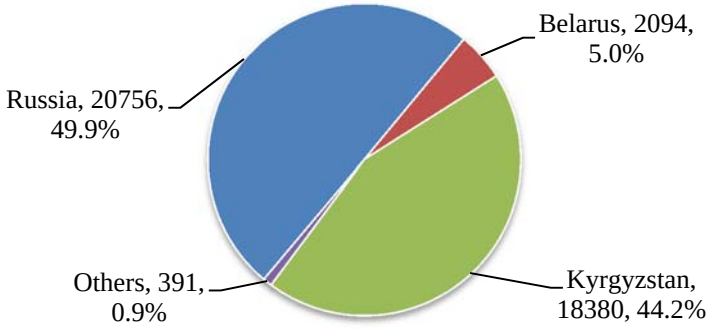
- ***Cost of Kyrgyz milk is lowest among the milk imported to Kazakhstan.*** These factors can be seen in the following price comparison. The cost of Kyrgyz milk (pastoralized) landing price in Kazakhstan (Almaty) was US$0.33/kg during the winter time, while the cost of locally produced milk was US$0.43/kg in winter (2015). Further comparison to other importing countries such as Russia and Belarus depicts a winning position of Kyrgyz milk price (table 9). In 2014, Kyrgyz dairy products import to Kazakhstan came in second after Russia, making up the 44 percent of the total dairy import in the country (Figure 4).

[34] Analysis of dairy products market in Kazakhstan, 2015, Report produced by SANGE research Center in Kazakhstan for IFC.

Table 9. The price of imported milk per Country, 2014

	US$/kg			US$/kg
Russia	1,001		Lithuania	1,244
Kyrgyzstan	0,614		Belgium	2,328
Belarus	1,308		Italy	5,000
France	3,297		Turkey	3,448
Poland	2,962		Iran	3,364

Figure 4. Structure of imports of processed milk and cream by countries, 2014 tons and percentages



Most recent situation in Kazakhstan shows that Ukraine dairy products export to the country has been cut significantly due to difficulties of transit through Russia. Overall, Ukrainian dairy export to Kazakhstan has been hit with additional US$200/ton due to the logistical issues. Further, transit through the Black Sea to Kazakhstan increases the cost two fold and makes the transit longer by one month compared to that through Russia.

- ***Milk quality in Kazakhstan is poor.*** As the OECD reports[35], Kazakhstan is dependent on milk imports due to low quality of local milk. About 38 percent of the surveyed companies indicated the lack of quality milk inputs as the most important constraint. As a result, imports of concentrated milk and milk powder increased by 90 percent between 2002 and 2008; import of fermented dairy products went up by 350 percent and of cheese and curd by 819 percent.

12. However, the more recent strengthening of KGS against the significantly depreciated Russian Ruble, Kazakh Tenge and the Belarus Ruble has affected the price competitiveness of Kyrgyz products. While Kyrgyz milk export price stood at 26 KGS/kg in February 2016, the milk from Russia is selling at 23 KGS/kg and 18 KGS/kg from Belarus. With Belarus, the world's 5th largest trader of milk products, entering the Kazakh market, the export of dairy products from Kyrgyzstan fell by half. Nevertheless, in the medium to longer term the Kyrgyz dairy industry can regain its competitive position for several reasons as described above.

[35] Competitiveness and Private Sector Development: Kazakhstan 2010

Annex 9: Social Aspects of the Project

KYRGYZ REPUBLIC: INTEGRATED DAIRY PRODUCTIVITY IMPROVEMENT PROJECT

The Borrower has prepared a Social Assessment (SA) which (i) provides insights into the social context within which the project will be operating, (ii) summarizes the potential impacts of the project on households and communities, and (iii) suggests project design elements. The SA was prepared with a wide range of input including that from local government authorities, community leaders, non-governmental organizations and community members.[36] This annex provides details on two elements of project design – gender and grievance redress.

Gender

Recent country-level surveys indicate that women are earning less than men (earning on average 30 percent less than men) despite having better qualification and better level of education. Similarly, women are underrepresented in the country's labor force (only half of women aged 16-65) are officially employed. The causes of the lower rates of remuneration and employment of women include a short supply of childcare facilities as well as the societal pressure on women to assume family and household responsibilities.

Women in Issyk-Kul region, similar to other regions of the country, face the risk of old age poverty because of meager state pensions and compensations. Majority of Issyk-Kul region's workforce, including women, is involved in the informal tourism sector. Moreover, half of female workforce stays at home taking care of household responsibilities and child-rearing. Given Kyrgyz Republic's convoluted Soviet-era system of record-keeping of employment status, informal employment is not entered into citizens' employment history. As a result, at retirement, many women end up with small pensions. As the Bank research indicates that even women engage in formal sectors face lower pensions "due to their lower average wages and fewer years of service resulting from the lower retirement age and generous maternity leave." Because women on average live longer than men, they are particularly exposed to the risk of old age poverty.

Although women make up a significant proportion of entrepreneurs (recent studies indicate they make up a fifth of all entrepreneurs in the country), they are woefully underrepresented in management positions, and they are less likely to be listed as owners of assets. In the Issyk Kul region, women are engaged in variety of hospitality services, but the owners of these enterprises are usually men.

Similar to other regions of the Kyrgyz Republic, the Issyk-Kul region witnessed a rise in maternal mortality rates due to a variety of reasons, including the provision of inadequate healthcare. According to Bank estimates, "the number of women dying in childbirth for every 100,000 live births in the Kyrgyz Republic is 75, down only slightly from about 85 in 1990."

[36] The draft SA was subject to public consultations and was disclosed in in-country and in the Infoshop on April 30, 2014.

The project will provide a number of benefits for women. Because dairy farming is a labor-intensive industry, the milk collection, animal feed preparation and other activities are expected to generate additional employment and contribute to small business development. Thus, the proejct will provide advantages to women, who tend to be responsible for households activities (animal tending, provision of food and water, cleaning and sanitation). The employment generation and small business activities may encorage young women and men to stay in the villages and take up farming and generate (additional) income through provision of services (such as grass cutting and foder preparation, shed cleaning, milk collection and testing, etc.).

The project will also include gender informed activities to support inclusion and equality more generally. Under component 2, in improving knowledge on good dairy farming practices among beneficiaries, women's groups will be actively involved to provide gender perspective and give voice to women. In the Kyrgyz Republic, the number of women's groups is low, (around 10-20 percent), and yet they are active, and they focus on specific needs of women in the country. Under Component 3 (the Revolving Fund), the project will pay particular attention to the involvement of women and youth in determining priorities for their communities, in monitoring and evaluation by communities of project activities to address specific gender related needs. The project will include gender-disaggregated measures for the project's beneficiaries. A gender indicator is included in the Results Framework (number of women farmers trained in improved animal husbandry practices).

Citizen Engagement and Feedback

In many parts of the country, citizens and public servants, including elected local government officials, report a low level of awareness as the primary obstacle in ensuring greater citizen engagement and accountability of service providers to beneficiaries. Across the country, citizens raise the following complaints: a) state actors are not fully aware of their obligations and responsibility toward constituents; b) citizens have limited knowledge about their rights and the processes by which to keep officials accountable. Although these problems exists across the country, they are particularly acute in remote highland areas, particularly in Issyk-Kul region.

Social assessment indicates that in the Issyk-Kul region, quality of grievance redress and dispute resolution systems varies from one village to another. In some cases, local authorities pay insufficient attention to grievance redress and dispute resolution mechanisms. In other cases, the weakness of GRMs is due to elite capture of local government bodies. For example, in several villages in Issyk-Kul region, local residents said that wealthy and well-connected local power-brokers control local tax policy (including land and property tax) and the provision of public services. Interviews with local residents indicate that transparent policy-making processes pose a threat to local power distribution in some villages where local power-brokers elites are averse to measures that would increase social accountability. They can utilize a variety of measures to block access to information, including utilization of kinship and neighborhood ties, peer-pressure, and the threat of retaliation. In some cases, elites can use local bureaucracy to reward those residents who cooperate with them and they punish those who criticize local authorities.

The project will seek to identify vocal, active, and trustworthy individuals (including leaders of women's groups) who serve as community leaders and who can assist in disseminating information

about project activities and benefits. The project will also consider the use of community radios to support the inclusivity of information channels and dissemination to reach all segments of the population, especially vulnerable groups. The PMUs will also engage in partnerships with the local media for dissemination of information on project activities, including budget information and grievance handling.

The project team will pay increased attention on the impacts of the project on local political economy. In places where local power holders use community development programs for their own interests, benefits generated by the project be captured by local elites, thus increasing social divisions and community discontent. The project will engage in systematic consultations with local experts on ways to offset elite capture.

Grievance Redress Mechanisms

An assessment of grievance management and feedback processes will be undertaken as part of the detailed design of the grievance mechanism. The shortcomings of the existing system and the extent to which satisfactory outcomes can be boosted will be examined. A Grievance Redress and Feedback Mechanism will subsequently be established to allow for feedback and complaints. The GRM will reflect successful elements of existing systems and will include good practice principles such as confidentiality, anonymity in making complaints, documentation, tracking, and monitoring. For example, the use of a hotline (as suggested in the Social Assessment), anonymous feedback boxes (as used in other projects), and NGOs as interlocutors will be explored. The project at its outset will work with the local authorities and NGOs to ensure that the feedback from the rural population is passed on to the PMUs. The GRM will be designed in consultation with the project stakeholders (including farmers, agro-processors, commercially-oriented producer associations, agro-input dealers and traders engaged in the activities supported by the project).