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Report No: PAD1743

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 9.30 MILLION
(US$12.92 MILLION EQUIVALENT)

AND A

PROPOSED GRANT

IN THE AMOUNT OF SDR 7.60 MILLION
(US$10.58 MILLION EQUIVALENT)

TO THE

KYRGYZ REPUBLIC

FOR A

SUSTAINABLE RURAL WATER SUPPLY AND SANITATION DEVELOPMENT PROJECT

SEPTEMBER 9, 2016

Water Global Practice
EUROPE AND CENTRAL ASIA

CURRENCY EQUIVALENTS

(Exchange Rate Effective 31 July, 2016)

Currency Unit	=	KGS Som
KGS 67.58	=	US$1.00
US$0.72	=	SDR 1.00

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ACM	Asbestos-Contained Materials
ADB	Asian Development Bank
AO	Ayil Okmotu (village administration – Local Self Government Body)
ARIS	*Agentstvo Razvitiya I Investirovanya Soobschtv Kyrgyzkoi Respubliki* (Community Development and Investment Agency)
BOUIP	Bishkek and Osh Urban Infrastructure Project
CAS / CPS	Country Assistance Strategy / Country Partnership Strategy
CBISSP	Community Based Infrastructure Sustainable Services Project
CDWUU	Community Drinking Water Users Union
CLTS	Community Lead Total Sanitation
DFID	Department for International Development (UK)
DDWSWD	Department of Drinking Water Supply and Wastewater Disposal
EA	Environmental Assessment
EBRD	European Bank for Reconstruction and Development
ECAPDev	Eastern Europe and Central Asia Capacity Development
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ERR	Economic Rate of Return
FM	Financial Management
GIS	Geographic Information Systems
GNI	Gross National Income
GoKR	Government of Kyrgyz Republic
GRM	Grievance Redress Mechanism
GRS	Grievance Redress System
ICR	Implementation Completion Report
IDA	International Development Association
IPF	Investment Project Financing
IsDB	Islamic Development Bank
KIHS	Kyrgyz Integrated Household Survey
M&E	Monitoring and Evaluation
MoE	Ministry of Education
MoF	Ministry of Finance

MoH	Ministry of Health
MTR	Mid Term Review
NGO	Non-Government Organization
NSDS	National Sustainable Development Strategy
NPV	Net Present Value
PDO	Project Development Objective
PIU	Project Implementation Unit
PHAST	Participatory Hygiene and Sanitation Transformation
POM	Project Operating Manual
PRAMS	Procurement Risk Assessment and Management System
RWSSP	Rural Water Supply and Sanitation Projects (RWSSP1 & 2)
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SAACCS	State Agency for Architecture, Construction and Communal Services
SECO	Swiss State Secretariat for Economic Affairs
SES	Sanitary Epidemiological Surveillance
SRWSSDP	Sustainable Rural Water Supply and Sanitation Development Project
STICBP	Small Towns Infrastructure and Capacity Building Project
TA	Technical Assistance
UDP	Urban Development Project
VHC	Village Health Committee
VIP	Village Investment Projects (VIP I, II, and III)
WASH	Water Supply, Sanitation and Hygiene
WSS	Water Supply and Sanitation

Regional Vice President:	Cyril E. Muller
Country Director:	Lilia Burunciuc
Senior Global Practice Director:	Jennifer J. Sara
Practice Manager:	Michael Haney
Task Team Leader:	David M. Lord

KYRGYZ REPUBLIC
SUSTAINABLE RURAL WATER SUPPLY AND SANITATION DEVELOPMENT PROJECT

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Sustainable Rural Water Supply and Sanitation Project (P154778)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

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Report No.: PAD1743

Basic Information			
Project ID P154778	EA Category B - Partial Assessment		Team Leader(s) David Malcolm Lord
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 30-Sep-2016	Project Implementation End Date 31-Dec-2021		
Expected Effectiveness Date 29-Mar-2017	Expected Closing Date 30-Jun-2022		
Joint IFC No			
Practice Manager/Manager Michael Haney	Senior Global Practice Director Jennifer J. Sara	Country Director Lilia Burunciuc	Regional Vice President Cyril E Muller

Borrower: Ministry of Finance					
Responsible Agency: Community Development and Investment Agency (ARIS)					
Contact:	Kubanychbek Ismailov		Title:	Executive Director	
Telephone No.:	996312301805		Email:	office@aris.kg	

Project Financing Data(in USD Million)					
[ ]	Loan	[X]	IDA Grant	[ ]	Guarantee
[X]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	28.00	Total Bank Financing:	23.50
Financing Gap:	0.00		

Financing Source	**Amount**

BORROWER/RECIPIENT	4.50
International Development Association (IDA)	23.50
Total	28.00

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	0000	0000	0000	0000
Annual	2.20	5.80	8.30	6.80	4.10	0.80	0.00	0.00	0.00	0.00
Cumulative	2.20	8.00	16.30	23.10	27.20	28.00	0.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Water

Contributing Practice Areas

Poverty and Equity

Proposed Development Objective(s)

The project development objectives (PDO) are to assist the Kyrgyz Republic to (i) improve access to and quality of water supply and sanitation services in the Participating Rural Communities; and (ii) strengthen capacity of the Recipient's institutions in the water supply and sanitation sector.

Components

Component Name	Cost (USD Millions)
Water Supply Investments	21.10
Sanitation Development	3.00
Institutional Strengthening	2.50
Project Management	1.40

Systematic Operations Risk- Rating Tool (SORT)

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

OVERALL	Substantial

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 [X]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

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

Legal Covenants

Name	Recurrent	Due Date	Frequency

Description of Covenant

Conditions

Source Of Fund	Name	Type
IDA	Subsidiary Agreement	Effectiveness

Description of Condition

The Subsidiary Agreement has been executed on behalf of the Recipient and the Project Implementing Entity.

Source Of Fund	Name	Type
IDA	Project Operations Manual	Effectiveness

Description of Condition
The Project Implementing Entity has adopted the Project Operations Manual pursuant to provisions set forth in paragraph 1 of Section I.D of Schedule 2 to the Financing Agreement, in form and substance acceptable to the Association.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
David Malcolm Lord	Team Leader (ADM Responsible)	Senior Water Supply and Sanitation Specialist		GWA09
Irina Goncharova	Procurement Specialist (ADM Responsible)	Procurement Specialist		GGO03
Nodar Mosashvili	Financial Management Specialist	Consultant		GGO21
Aidai Bayalieva	Team Member	Transport Specialist		GTI10
Alisher Khamidov	Safeguards Specialist			GSU03
Cesar Niculescu	Safeguards Specialist	Senior Environmental Specialist	Environmental Specialist	GEN03
Ekaterina Romanova	Safeguards Specialist	Social Development Specialist	Social Development Specialist	GSU03
Guy Tchakounte Tchabo	Team Member	Senior Program Assistant		GWA09
Jasna Mestnik	Team Member	Finance Officer	Finance Officer	WFALA
Jeren Kabayeva	Team Member	Agricultural Spec.		GFA03
Maryanne Leblanc	Team Member	Consultant		GWAWP
Natalya V. Iosipenko	Team Member	Communications Assistant		ECAEC
Nikolai Soubbotin	Team Member	Lead Counsel	Lawyer	LEGLE
Paula Restrepo Cadavid	Team Member	Urban Economist		GSU09

Extended Team

Name	Title	Office Phone	Location

Locations

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

Consultants (Will be disclosed in the Monthly Operational Summary)	
Consultants Required ?	Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. **The Kyrgyz Republic is, with a 2014 GNI per capita of US$1,040, one the poorest Former Soviet Union countries in Central Asia**. About 39 percent of its population of currently 6.2 million are considered to be living in poverty, with the rate widely varying both by region and between urban and rural areas (where the poverty rate in many areas exceeds 60 percent). Around one-third of the population lives in cities and small towns, with the population of Bishkek, the capital, reaching about 1.0 million, while the other two-thirds live in an estimated 1,805 rural villages of varying sizes. Many of them are scattered in remote and isolated mountainous areas.

2. **The country faces substantial challenges in addressing rural poverty alleviation and development.** Recent data indicates that rural (41 percent) and urban (29 percent) poverty rates are diverging, with the gap widening to more than 11 percentage points in 2013. Rural populations remain vulnerable, affected by volatile economic growth due to frequent internal and external shocks, including natural disasters, social unrest, fluctuating commodity prices and a deteriorating economic situation in Russia that affects remittances to the Kyrgyz Republic. Furthermore, it has been identified that access to safe drinking water and piped sewerage systems contributed most to multidimensional aspects of poverty. In 2008 those deprivations contributed 48 percent to overall non-monetary poverty; this share increased to 84 percent by 2012—providing an indication of the continued infrastructural problems faced by the population.[1]

3. **The Kyrgyz Republic has an administrative and territorial organizational governance structure,** divided into seven oblasts, which in turn are sub-divided into 40 rayons. The next level of administration is formed by local self-government units that currently include 31 urban municipalities (including the cities of Bishkek and Osh) and 453 Ayil Okmotus, which are responsible for, among other services, water supply and sanitation (WSS) within their territories in accordance with the 2011 law on local self-government.

4. **Since independence in 1991, the country has experienced a rather tumultuous political history** that has hindered economic growth and, in many sectors, has slowed the development of solid administration structures and institutional systems. The 'Tulip Revolution' in 2005 resulted in the ouster of President Akaev, a fate shared in the spring of 2010 by his successor, President Bakiyev. Moreover, in summer 2010 violent and widespread riots in the south of the country resulted in numerous casualties and economic losses. In the wake of the 2010 events, a new constitution was adopted by popular referendum and the country shifted from a presidential system to a parliamentary republic. Since then the country has been politically stable.

B. Sectoral and Institutional Context

[1] The Kyrgyz Republic: Poverty Profile for 2013, published by the Bank in May, 2015

5. **Basic public services such as water supply and sanitation have rapidly deteriorated since independence.** The Kyrgyz Republic had, inherited from Soviet times, a relatively well developed system of water supply. Access to piped water service (i.e., potable water piped into the dwelling, plot or yard or into a public tap/standpipe) was the standard of service for Central Asia. Existing infrastructure, majority of which was built prior to 1980's is now generally in poor condition and very inefficient, with losses estimated on average at 55 percent. Until 2014, there was no national (or local) budget for capital investments in WSS, except those provided by international donors on a credit or grant basis.

6. **In addition to low public expenditure in the sector, low tariffs, low collection rates, and limited metering coverage have led to unsustainable operation, maintenance and investments.** According to household surveys, even for the poorest households the expenditure on drinking water supply constitutes only 0.35 percent of income.[2] In addition to low tariffs, collection rates are exceedingly low, with average collection ratios below 25 percent in rural areas and below 50 percent in urban areas. Furthermore, metering coverage is very limited in rural areas—according to the Kyrgyz Integrated Household Survey (KIHS), only 1.6 percent of the rural population had water meters in 2012. Low metering leads to strong incentives to under-report usage, which further contributes to insufficient payments for water supply and low revenues of the service providers.[3] This situation, coupled with limited human resource capacity led to a deterioration in services, which in turn further exacerbates the issues - as collection rates decreased coinciding with a decline in customer satisfaction.

7. **Access to and quality of water supply and sanitation services, particularly in rural areas remains low.** Distances from a home to the nearest water source is much longer for rural households than for urban ones, which implies greater time spent by rural households transporting water for their basic needs. By 2000, a mere 40 percent of rural inhabitants were believed to have access to working water supply systems, while the remaining collected water from unprotected wells, springs, streams, or irrigation canals. According to KIHS, in 2012, not more than 5 percent of the poor rural population had in-house access to piped water. The survey also showed that rural sanitation conditions have remained very poor, with 96 percent of the rural population in 2012 relying exclusively on outdoor pit latrines. These difficult conditions are aggravated by the often harsh climatic conditions and result in significant hardship for the rural population in general, and for women and children in particular.

8. **Low access rates and deteriorating services are a constraint to the development process – particularly in rural areas.** The economic impact of poor WSS—in both urban and rural areas—is estimated to cost the country about US$116 million per year (or 1.79 percent of GDP, of which half is direct financial losses).[4] These economic costs reflect in part, the adverse effects of inadequate water services on public health and general quality of life. Among water-related diseases in the Kyrgyz Republic, the most frequent one is typhoid fever. In 2007 recorded

[2] State program for development of water supply and wastewater disposal in settlements of the Kyrgyz Republic for the period of 2014-2024, GoKR, 2014.
[3] The Kyrgyz Republic: Insights on household access to water supply and sanitation
[4] Central Asia Water Series – Volume 2: Economic Impact Assessment of Inadequate Water Supply and Sanitation Services in Central Asia, World Bank, June 2016 (unpublished analytical report).

typhoid fever and paratyphoid morbidity (186 and 90 cases respectively) increased by 140 percent and was mainly caused by inadequate access to safe drinking water. About 40–45 percent of infectious diseases are helminthosis, caused by poor personal hygiene practices as well as by poor quality of drinking water[5].

9. **In recognition of these issues, the Government of Kyrgyz Republic has directed financial and technical assistance from international donors towards infrastructure investments and institutional support for sector reforms.** In 2001 the Bank, in concert with the Asian Development Bank (ADB) and the UK Department for International Development (DFID), funded the "Taza Suu" rural water supply program. The program included the Bank's Rural Water Supply and Sanitation Project (RWSSP-1, US$10 million plus a DFID contribution of US$6.3 million) and ADB's Community Based Infrastructure Sustainable Services Project (CBISSP, US$36 million). Despite occasional difficulties in implementation and various shortcomings in technical designs and work execution, both projects progressed reasonably well and completed satisfactorily. As a result, in 2009, the Bank and DFID jointly agreed with ADB to put in place a follow-up program consisting of RWSSP-2[6] (US$13 million) and CBISSP (US$30 million)[7].

10. Together, RWSSP and CBISSP helped to partially address the needs of about 500 villages through an approach which focused on rehabilitation and upgrading of deteriorated assets. This first phase of the program also supported the creation of Community Drinking Water User Unions (CDWUUs), an alternative service delivery model. Based on lessons learnt, RWSSP-2 adopted a more focused approach, which involved construction of new water systems, to extended benefits of improved access to good quality water supply to around 83,000 people in 55 villages, allowing more than 3,900 households to obtain water supply connections on their premises. In addition, RWSSP-2 expanded support under the sanitation component for the rehabilitation of sanitation facilities in 18 schools along with complementary sanitation and hygiene education programs, together benefitting more than 5,000 children. The rural water supply program collectively supported the development of sector institutional capacity at the central level. Specifically, analytical outputs and technical assistance financed under the RWSSP-2, assisted the Government to resolve a number of ambiguities revolving around conflicting and overlapping mandates of various institutions within the sector. Thereafter, the responsibility for water supply and sanitation sector issues have clearly been concentrated within the Department of Drinking Water Supply and Wastewater Disposal (DDWSWD), in the State Committee for Architecture, Construction and Communal Services (GOSSTROY), a new department legally established in 2011.

[5] Global Water Solidarity: Improving Water and Sanitation through Decentralized Cooperation in the Republic of Kyrgyzstan, UNDP, March 2014.

[6] RWSSP - 1 & 2 focused on Naryn, Talas and Issykul oblasts. ADB financed CBISSP included Osh, Jalalabad, Bakten and Chui.

[7] In parallel, in 2004 the Bank approved a project to support the rehabilitation of water supply and other municipal service systems in small towns (STICBP US$15 million), followed by a 2008 operation supporting the rehabilitation of water supply systems in the cities of Bishkek and Osh (BOUIP US$12 million). More recently, the European Bank for Reconstruction and Development (EBRD), together with the Swiss State Secretariat for Economic Affairs (SECO), commenced an urban water supply rehabilitation program for Bishkek, Osh, and a number of other larger towns for a total of about US$35 million equivalent.

11. **In parallel with the stabilization of the political system, the past few years have seen a noticeable improvement in the institutional environment of the water sector.** The capacity and autonomy of DDWSWD has incrementally expanded, as demonstrated through the yearly increases in allocations from the central budget[8]. Furthermore, by early 2016 the DDWSWD had successfully completed, without donor support, water supply rehabilitation projects for 15 villages. Under the leadership of DDWSWD, the strategic and policy environment has also improved and with support of RWSSP-2, a Drinking Water Supply, Wastewater Disposal and Sanitation Strategy till 2026 was approved by the Government, in March 2016. The strategy provides guidance for sector developments, which under a delegated management framework promotes: (i) a clear separation of function (policy, operation and regulation), (ii) autonomy, accountability and efficiency in service delivery, (iii) principles of full cost-recovery and financial sustainability, and (iv) environmental sustainability and climate resilience. The long-term strategic objectives are to achieve universal coverage of water services; to support independence through enabling self- or private-sector financing; to protect the environment and improve public health; and to create robust institutional structures and supporting mechanisms that respond to local demands for sustainable water services.

12. **Despite this progress, a number of institutional capacity constraints still remain, limiting the transition towards sector sustainability.** The responsibility for water supply and sanitation service rests with local government authorities, in accordance with the 2011 law on self-government (i.e. Municipalities in small towns and Ayil Okmotus in rural areas) – who are in turn enabled to contract operational services on an agreement basis (most often to CDWUU's in rural villages). While the decentralization of service provision appears to be well advanced a number of issues still remain in terms of enabling sustainable service delivery in rural areas. This is evident through the results of the CDWUU operational performance analysis, carried out during preparation of the sector strategy, which indicates that only 25 percent of the 633 existing CDWUU's are operating on a financially sustainable basis. Key issues identified include limited technical guidance, insufficient service and financial regulation at the local and central levels, as well as inadequate equipment, human capital, and funding for maintenance and expansion of services – which in effect have made it difficult for service contract operators and local authorities to sustain and increase access to quality services. In response to this issue, the ADB initiated in 2015 a technical assistance program focused specifically on institutional structures and support mechanisms required to enable sustainable water service delivery in rural areas. This technical assistance program is on-going, but preliminary findings and recommendations have been considered in the design of SRWSSDP.

13. **Policy, regulatory and institutional developments, for the promotion of sustainable rural sanitation, are less advanced**. The Government's strategy recognizes a number of key challenges related to sanitation, it outlines general objectives, some priorities areas (including a focus on WASH at schools) and provides guiding principles. However, further analytical and technical support is required to 'map out' the way forward and to provide a more detailed implementation strategy to achieve sustainable results under this agenda. Specifically, this includes the development of comprehensive rural sanitation strategy which would focus on: (a)

[8] FY16 allocations to the DDWSWD increased by 100% from previous year to 200 million Kgs som.

strengthening the enabling environment; (b) changing and sustaining improved sanitation behaviors; (c) building markets and industry for improved sanitation; and (d) accelerating access – particularly for women, girls, the poor and vulnerable groups.

14. **The Community Drinking Water Supply and Wastewater Disposal Strategy till 2026 sets out ambitious targets for increasing access to potable water supply system and improved sanitation.** In rural areas, the goal is to reach 90 percent coverage for water services and 70 percent coverage for sanitation systems by 2026. A country wide assessment, including all 1805 villages, indicates that some 651 villages require new water supply systems, while some 760 villages require substantial investments for system rehabilitation and expansion. Initial cost estimates however exceed foreseeable resources, with investment needs estimated to be in excess of US$600 million – for water supply alone. Capital investments required to achieve sanitation coverage expansion targets have not yet been reliably estimated and will depend largely upon the adopted approach for promoting rural sanitation development, which requires further analysis and strategic planning.

15. **It is within this sector and institutional context that the Sustainable Rural Water Supply and Sanitation Development Project (SRWSSDP) has been defined.** Accordingly, through strategic infrastructure and institutional support activities, SRWSSDP will build upon and leverage recent advancements in the sector and lessons from previous projects to assist the Government to develop, implement and institutionalize sustainable models for improved rural water supply and sanitation services. This will involve strengthening the institutions and regulatory environment at the national level and establishing systems to support local operations (including capacity building of local government entities and CDWUUs). The project has been developed in close consultation with other donors and in response to strong demand from the Government to support the rural development agenda and is informed by poverty and sector analytics.

C. Higher Level Objectives to which the Project Contributes

16. Water supply and sanitation services are an integral part of the World Bank's support toward the Twin Goals of ending extreme poverty and promoting shared prosperity. There is a direct link between access to improved water services (including hygiene promotion) and the incidence of water-borne diseases and public health. Improving access reduces coping costs, leads to time savings, and increase productivity—wide economic impacts with disproportionate and direct benefits to the poor. Women and children are among those who benefit most from improved access to services.[9]

17. More specifically, the project contributes to the Twin Goals and has a poverty focus, which includes design elements to target and extend benefits to the poorest households. At a programmatic level, it contributes to poverty reduction by concentrating on rural areas, which have the highest rates of poverty and vulnerability—specifically addressing access to services, which has been identified as the most significant multidimensional aspect of poverty in the

[9] Surveys carried out under previous project in the series (RWSSP-2), indicated that some 80 percent of those who were tasked with collecting household water for household needs were women[9].

country. At the activity and component level, infrastructure investments have been screened to consider existing service conditions and data related to incidents of waterborne diseases. The project will also support the development of a connection subsidy strategy and tariff mechanisms to address the needs of poorest and most vulnerable groups. Monitoring and evaluation systems have been designed to identify the proportion of project beneficiaries considered poor or in the lowest two income quintiles to track and evaluate impacts at project completion, including results across income groups.

18. The project contributes towards Sustainable Development Goal No.6, which calls for universal and equitable access to safe and affordable drinking water, sanitation and hygiene for all by 2030. It also contributes to and is fully aligned with the World Bank's Country Partnership Strategy for the Kyrgyz Republic 2014-2017. The planned project activities, specifically support the development of Area of Engagement 1: Public Administration and Service Delivery. At the request of the Government, SRWSSDP was introduced into the CPS programing in 2015 through a reallocation, to address urgent investment needs in the sector, ensure continuity of support after successful completion of RWSSP-2 (closed 31 October, 2014), and in recognition of the critical link between improved water services, rural development and poverty alleviation.

19. The National Sustainable Development Strategy (NSDS) for the Kyrgyz Republic 2013-2017 emphasizes the importance of improving the system of delivery of water supply and sanitation services and recognizes the objective to achieve financial sustainability and effective management of resources at the local level.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

20. The project development objectives (PDO) are to assist the Kyrgyz Republic (i) to improve access to and quality of water supply and sanitation services in the Participating Rural Communities; and (ii) to strengthen capacity of the Recipient's institutions in the water supply and sanitation sector.

Project Beneficiaries

21. The project is expected to benefit more than 100,000 people residing within the participating rural villages in Osh, Chui and Issyk-Kul Oblasts. The majority of beneficiaries within the project areas will be provided with access to piped water services through a new household connection[10]. Furthermore, some 16,000 people (mostly children), will directly benefit through the investments in sanitation facilities and associated hygiene, and behavior change interventions in schools and other eligible public institutions (for example, health clinics).

[10] A metered connection serving a household yard standpipe.

22. Beneficiaries for the institutional strengthening activities will include national, local, government, and community-level institutions, namely: the Department of Drinking Water Supply and Wastewater Disposal (DDWSWD) within the State Agency for Architecture, Construction and Communal Services (SAACCS, also known as GOSSTROY), and Sanitary Epidemiological Surveillance (SES) units located within the Ministry of Health at the central and rayon government level; the local self-government units (Ayil Okmotus) in the participating areas; and the CDWUUs. Ultimately, the customers in the project areas will benefit through improved service delivery as a result of the institutional support and capacity-building activities at the national and local levels.

PDO Level Results Indicators

23. Key indicators to measure progress towards achievement of the PDO include:

(i) Number of people in rural areas provided with access to an improved water source under the project;
(ii) Number of people in rural areas provided with improved sanitation facilities under the project;
(iii) Average hours of water supply per day in project areas;
(iv) Operating Cost Coverage Ratio of service providers in project areas; and
(v) Institutional Support Plan for DDWSWD developed and approved.

24. In addition, intermediary indicators have been identified in order to measure the more specific infrastructure and institutional objectives expected to result from each component (see Annex 1).

III. PROJECT DESCRIPTION

A. Project Components

25. The proposed project is a follow-on from the Second Rural Water Supply and Sanitation Project (RWSSP-2), which closed October 31, 2014, and is designed to scale-up water supply and sanitation investments and service delivery models, to new project areas, and to support the implementation (and enhance where necessary) of the Government's sector strategy for the rural water sector. The project will build-upon the analytical outputs and lessons derived from RWSSP-2 and seeks to harness the momentum and demand for change generated through the successful implementation experience over the last 2-3 years of the project.

26. The project will support the Government to implement strategic actions already identified and to create a programmatic framework which will guide the investment planning and implementation process. In addition, the project will take full advantage of opportunities to reduce extreme poverty by working in rural areas and extending piped water services to predominantly low-income households. This will be supported by specific activities, including developing and mainstreaming citizen engagement and gender-inclusive policies and procedures.

27. The SRWSSDP has been structured in four components. A summary of activities to be financed under each component is provided below. Additional details are provided in Annex 2.

28. **Component 1: Water Supply Investments (US$21.1 million).** This component will address the needs for rehabilitation of existing and/or construction of new water supply systems in the target areas, benefitting up to 100,000 people. The component will finance goods, works and services (including engineering design and construction supervision) and will include civil and electrical/mechanical installations for water supply production (boreholes, well-fields, intakes, etc., as well as disinfection, and pumping as required), and transmission and distribution (networks, storage, meters, etc.) to households in the project areas. This component will also finance preparatory activities including detailed engineering designs for scaling up investments under the program. Complementary institutional support activities are defined under component 3. These activities together with the infrastructure investments will support water system operations to enable sustainable service delivery.

29. The project-financed water supply systems will reflect careful consideration of a number of important design philosophy and implementation principles, including the objective of achieving equitable access and quality of services within the project areas; individual metering for each connection (and the introduction of consumption-based billing), consideration of full life-cycle costs, including assessment of water source options, consideration of climatic factors and resilience, and the capacity support requirements of the operator. Details are provided in Annex 2. Furthermore, it is important to note that communities and local governments will be involved in identifying priority investments in their respective areas, through public consultations and meetings. Female beneficiaries and women's groups will be encouraged to participate in order to reflect women's voices in identifying investments of significance to them. The communities will also be involved in monitoring the quality of civil works through community monitoring processes. Costs associated with implementation of resettlement activities (as per RPF procedures) will be financed under component 1, through the central Government's contribution to the project.

30. **Component 2: Sanitation Development (US$3.0 million).** This component will finance goods, works and services to provide strategic support for improved sanitation within the target rural communities and to enhance the Government's strategy for improved sanitation in rural areas. The technical assistance included under component 2 focuses on behavior change and demand creation – as a first step in the process. In addition, however other strategic issues associated with the enabling environment, markets and industry, to accelerate access and sustainability will be addressed through the preparation of a national rural sanitation strategy. Other specific activities are described below and will be complemented through on-going trust funded analytical work and technical assistance provided by the Bank with support of the Water Global Practice.

31. This component will finance retrofitting of existing sanitary facilities in selected schools and other eligible public buildings within the project areas (for example health clinics). The retrofitting works for sanitation facilities will build upon the successful implementation models and experience developed through the RWSSP-2. Standard designs will be prepared in consultation with the Ministry of Education and applied (and adapted as required) where possible to selected public schools and kindergartens within project areas. The project investments will cover more than 46 schools and kindergartens, servicing around 16,000 students. These works

will complement the water supply investments and together will contribute to improved development outcomes (including public health).

32. In addition, SRWSSDP will extend beyond the targeted sanitation interventions at schools by providing focused technical assistance to support improved sanitation at the household level. This will include the development of standard designs, including guidelines for construction and operations, for household latrines and septic systems for rural areas and technical assistance (TA) to support Ayil Okmotus in target areas - to put in place systems for safe septic sludge removal and treatment / disposal. The TA will include support for planning processes, considering environmental, economic and social criteria along with supply chain considerations, pricing / payment modalities, and a review of regulatory constraints and enabling conditions at the local and central levels.

33. The component will also support the development and implementation of a communication strategy and Water, Sanitation and Hygiene (WASH) educational campaigns to promote improved health and hygiene practices, including specific information, education and communication (IEC) materials related to water quality, disinfection, safety, and menstrual hygiene. The sanitation and hygiene education programs will be introduced through the school system, within the communities and through public campaigns to support improved knowledge, attitudes, and practices within the project areas. As women carry the primary responsibility for securing water for household needs, as well as for promoting hygiene practices at home, the communication strategy will specifically target women and women's groups to convey the messages.

34. **Component 3: Institutional Strengthening (US$2.5 million).** Component 3 will finance goods and services to strengthen sector institutional capacity at the national and local levels. This component has been designed to build upon substantial outputs prepared under RWSSP-2, and to complement technical assistance financed by the Asian Development Bank, which includes the analysis and design of institutional structures and mechanism to support sustainable service delivery in rural areas. As such, activities under component 3, specifically at the national level, will remain flexible in order to assist the Government to respond to emerging needs, fill analytical and knowledge gaps and provide additional technical assistance for implementation of the reforms. Activities under this component are further organized under two separate sub-components as follows:

- **Sub-component 3.1: National Level (US$0.7 million)** activities will include technical assistance for drafting legal/normative acts to clarify roles and responsibilities (including asset transfer and ownership issues) under a delegated management framework, improved financial and service regulation, and technical support for the establishment of new institutional models for sustainable water service delivery (for example piloting of an aggregated approach). This sub-component will also finance focused studies on identified areas of need (for example, the sustainability of disinfection systems), sector financing and investment plans, augmentation and institutionalization of the management information system/data base, and an institutional support plan for DDWSWD, including assessment of existing capacity, preparation of an implementation plan (road map), and capacity building/training activities.

- **Sub-component 3.2: Local Level (US$1.8 million)** activities will include capacity building for local authorities (Ayil Okmotus) and CDWUUs responsible for water service delivery in the project areas. This will include topics and support for tariff setting, billing and collection systems, operations and maintenance training (for example, disinfection), water quality testing, customer relations, complaints mechanisms, human resources, and commercial management. Adapting and building upon the experience of RWSSP-2, the project will also support the preparation of service contract agreements, to clarify and formalize respective responsibilities of the operator (CDWUUs) and asset owner (Ayil Okmotus) and to support governance of service performance, tariffs and financing mechanisms. This sub-component will also finance beneficiary satisfaction surveys and evaluations and support mechanisms to improve citizen engagement, feedback, and consumer recourse. It will include training and knowledge exchange visits with RWSSP-2 participants, and will finance start-up support packages for the operator (for example, spare connection materials, water meters, testing equipment, and tools) to assist with the transition to operations (post construction). Local level institutional support will also seek to strengthen DDWSWD capacity at the rayon level, focusing on enhancing their function for sector monitoring and technical support to operators for complex operational and maintenance issues.

35. Institutional strengthening activities at both the national and local level, will also consider the potential role of private sector, and where appropriate seek to promote and enhance private sector participation for efficient and sustainable service delivery.

36. **Component 4: Project Management (US$1.4 million).** This component will finance the project management costs of the PIU related to staffing, consultancies, and equipment costs, the M&E program, safeguards specialists, and financial management, including internal and external financial audits.

B. Project Financing

37. The total cost of the project is US$28.00 million, to be financed through a US$12.92 million IDA Credit, a US$10.58 million IDA Grant, and US$4.50 million Government contribution. Project preparation was financed by a US$250,000 ECAPDev Grant to the Kyrgyz Republic, which enabled consultants to be engaged for necessary preparatory work (including engineering designs). Project preparation also benefited from studies and expert opinion supported by the Water Partnership Program.

38. The proposed lending instrument is an Investment Project Financing (IPF) to be implemented over a five-year period. Selection of the IPF was based on its flexibility and suitability to incorporate financing for a broad range of activities, including a number of specific investments, technical assistance, and capacity enhancement measures.

39. Due to financing limitations within the IDA 17 envelope and considering significant sector investment needs, this project was prepared within a programmatic framework to allow activities to be readily scaled up and replicated, if additional financing becomes available. As part of the programmatic approach, the Bank has worked in close consultation with other donors to ensure that the proposed activities are strategically aligned and complementary. In particular,

this includes the Asian Development Bank (ADB), who are supporting sector reforms through a technical assistance program.

40. This project has been prepared jointly with Islamic Development Bank (IsDB), with complementary financing for support to the sector under this programmatic framework, up to US$20.0 million. The IsDB-financed activities will be implemented through approaches developed under the SRWSSDP and under the overall oversight of the Government and World Bank. These additional funds have enabled expansion of the program into other rural areas in need, and as agreed with the Government, the IsDB financing will be concentrated within the Jalalabad Oblast. The Bank intends to explore other opportunities to further leverage the IDA financing to further expand and deepen the impacts of the proposed operations and support the Government to achieve their sector development objectives.

C. Project Costs and Financing

Project Components	Total Cost	IDA Credit Financing	IDA Credit % of Total	IDA Grant Financing	IDA Grant % of Total	Government Contribution Financing	Government Contribution % of Total
Component 1: Water Supply Investments	21.1	12.92	61%	3.68	18%	4.5	21%
Component 2: Sanitation Development	3.0	0.00	0%	3.0	100%	0.00	0%
Component 3: Institutional Strengthening	2.5	0.00	0%	2.5	100%	0.00	0%
Component 4: Project Management	1.4	0.00	0%	1.4	100%	0.00	0%
Total	**28.0**	**12.92**	**46%**	**10.58**	**38%**	**4.5**	**16%**

D. Lessons Learned and Reflected in the Project Design

41. The proposed SRWSSDP reflects lessons learned from previous projects and international experience of rural water supply and sanitation programs, including careful consideration of sustainability dimensions. A number of specific lessons were captured through the ICR of RWSSP-2, which were reinforced and further elaborated through extensive stakeholder consultations during project preparation. SRWSSDP will generally place greater emphasis on institutional strengthening and sector reform activities to support sustainable services delivery. The proposed approach also reflects the Government's programmatic vision for rural water and sanitation service delivery. A summary of key lessons learned and reflected in the project design are below.

(i) Implementation arrangements significantly influence quality and efficiency of project activities and achievement of results. The design of implementation arrangements for SRWSSDP, specifically the decision to implement through ARIS rather than DDWSWD, reflects a key lesson learnt from earlier phases of the program. Moreover, the proposed arrangements, consider findings from capacity assessments and consultations carried out

during preparation, mitigate potential risks, and support efficient and transparent implementation processes. The need to strengthen the capacity of DDWSWD to implement future projects however, is well recognized and as such a range of activities have been included under the project to progressively support this objective.

(ii) **Technical quality assurance during design and implementation is critical for successful implementation and operations.** Issues associated with the low capacity of local design firms and contractors will be addressed through the introduction of capacity-building efforts and international expertise to support design review, construction supervision and contract management.

(iii) **Provision of water supply services through individual household connections supports sustainable service delivery**. A strategy for reaching beneficiaries through individual (metered) connections (rather than standpipes) has been incorporated into the project design philosophy, to be applied where feasible. This approach not only supports equality of service delivery within project areas, but has been identified as a key factor motivating willingness to pay. Standpipes have also proven difficult for operators to manage, requiring frequent maintenance and control to minimize losses.

(iv) **Water and sanitation service delivery models in rural areas, including in particular community-based models, require support at a number of levels**. This includes careful consideration of technical matters that influence system design and operations, financial and commercial/professional management requirements, social and political influences, and broader sector governance and regulation mechanisms. Support activities are incorporated into the project at various levels to enable sustainable service delivery.

(v) **Sustained efforts are required to support sector reform objectives**. SRWSSDP represents the third in series of projects supported by the Bank in the country and is designed with the knowledge that a sustained effort is required to promote and support incremental sector reforms. The project facilitates the Bank's engagement, allowing continued policy dialogue and support for capacity development.

(vi) **Combining water supply interventions with sanitation development activities (including hygiene and health promotion) supports the achievement of full health benefits** associated with water service delivery. A key lesson from the RWSSP-2, which is supported by the international experience, is that public health impacts are increased when water supply, hygiene, and sanitation interventions are implemented together. This project includes an expanded sanitation program that goes beyond targeting of schools and introduces broader approaches to improve sanitation and hygiene within the household, including special consideration of issues related to gender.

(vii) **Effective communication, consultations and participatory approaches are integral to the success of rural water supply and sanitation projects.** Such an approach allows for early identification of needs/priorities and potential implementation issues. It helps manage expectations, facilitates ownership and trust, and supports accountability mechanisms. These principles have been incorporated into the project design and will be applied systematically. As a mechanism to foster ownership and demand, the project will include community contributions, directed towards the cost of water supply connection (covering materials and installation from the meter to the yard tap or internal plumbing system).

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

42. SRWSSDP will be executed under the overall responsibility of DDWSWD, which is within GOSSTROY. Project implementation will be carried out by the Community Development and Investment Agency (*Agentstvo Razvitiya Investirovanya Soobschtv Kyrgyzkoi Respubliki* [ARIS]), which has a proven track record as a reliable and efficient implementing agency not only for RWSSP-2 but for several other Bank-funded projects as well. ARIS will work in close cooperation with the DDWSWD, participating Ayil Okmotus and other key project stakeholders and counterparts. Further details of the implementation arrangements and responsibilities of the different institutions are outlined below.

43. **DDWSWD in GOSSTROY.** This department is responsible for development of both the rural and urban water supply and sanitation sectors, including policy, planning and sector coordination. The department has had relatively low levels of authority and capacity, however, over recent years it has demonstrated stability, and its ownership of the new sector strategy represents significant progress. DDWSWD's role in the project is as the overall executing agency, which includes, among other activities: overall sector coordination and policy support; Government and donor liaison; participation in all procurement activities (for example, as a member of evaluation committee); identification and prioritization of sector interventions (including infrastructure investments and institutional support); and as the responsible agency of the Government, provision of support to ARIS for implementation (as required). DDWSWD will coordinate the national-level institutional-support activities and will be the primary beneficiary of the expected outputs from sub-component 3.1.

44. **ARIS.** With financing from the ECAPDev Grant, ARIS led the preparation of SRWSSDP on behalf of the Government and will be responsible overall for project implementation, including fiduciary and safeguards compliance. ARIS was created by Decree of the President of the Kyrgyz Republic in October 2003 as a legally and operationally autonomous institution for the purpose of managing the implementation of the IDA-supported First Village Investment Project (VIP I). It operates under the oversight of a Supervisory Board comprised of 21 representatives of the State administration, the local government sector, and civil society. ARIS has been responsible for management of other Bank projects.[11] For purposes of the SRWSSDP's implementation, ARIS will maintain a project coordinator, engineers (including international experts), a procurement specialist, a financial management/disbursement specialist, a safeguards specialist (on a half-time basis), an institutional development specialist, and a monitoring and evaluations specialist (on a half-time basis). The institutional development specialist and the M&E specialist will be jointly responsible for public engagement and communications. Other ARIS staff (for example, ARIS's administrative pool) will provide backstopping support as needed.

[11] First, Second and Third Village Investment Projects (VIP I, II and III), STICBP, BOUIP, RWSSP-2 and recently approved Urban Development Project.

45. In its position as the Implementing Agency for SRWSSDP, ARIS will be responsible for and carry out all project implementation in accordance with the Project Operating Manual (POM). This will include procurement, financial management and accounting, social and environmental safeguards management, citizen engagement, monitoring and evaluation, and reporting, as well as routine communications with the Bank. DDWSWD, participating Ayil Okmotus, CDWUUs, and other key Government counterparts will participate at various levels during implementation of relevant project activities. Technical investigations and engineering designs will be carried out by third-party firms (consultancy services), selected in accordance with the Bank's procurement policies and procedures. Design review and construction supervision (including civil works contract management) responsibilities have been assigned to ARIS, who will engage international experts to reinforce their capacity. ARIS will enter into agreements with the participating Ayil Okmotus (the Employer), to define their respective roles and responsibilities during civil works implementation.

B. Results Monitoring and Evaluation

46. A monitoring and evaluation (M&E) system will be implemented as part of the project design. At the project level, ARIS, working in close collaboration with the participating Ayil Okmotus and CDWUUs, will be responsible for M&E of the project towards achievement of its objectives. ARIS is also responsible for monitoring preparation and implementation of safeguards instruments throughout the project preparation and implementation cycle. It will prepare semi-annual reports which will reflect project progress on the basis of performance indicators defined in the Results Framework. The frequency and methodology for collection of project performance data is outlined in Annex 1.

47. A baseline assessment, including a household survey and focus group discussion with potential project beneficiaries, will be conducted in the priority investment areas and used to define pre-project conditions. A follow-up assessment will be conducted prior to project closure. In addition, consumer satisfaction surveys for water services will be conducted before and after project interventions, in order to assess satisfaction levels and assist in the attribution of results to the project activities.

48. In addition to the specific monitoring indicators required as part of the formal Results Framework for the project, ARIS will be required to monitor additional project implementation indicators to be outlined in the POM. ARIS has already established an M&E system to capture and monitor results under ongoing projects. The M&E system in place is satisfactory. ARIS has an M&E officer who has been trained in M&E techniques and is expected to support the project. The detailed design of the M&E system and Baseline Surveys has been financed through the ECAPDev project preparation grant.

49. Further to the above, support will be provided to DDWSWD under component 3, for augmentation and institutionalization of the sector management information system/data base. This will involve further development of the existing monitoring systems towards measuring sector sustainability and progress towards the sustainable development goals for water supply and sanitation.

C. Sustainability

50. Sustainability is a core principle which has been integrated into the design of this project at a number of levels. It includes careful consideration and planning to address a range of important factors for rural water supply and sanitation services, including the following:

(i) **Social Sustainability.** Involvement of the community and the Ayil Okmotus (along with the DDWSWD) in project planning, design, financing and implementation will more likely result in locally acceptable and sustainable technical and institutional solutions. Critical to social sustainability will be the enhancement of service delivery and a demonstration that services meet customer expectations and needs, through a transparent and efficient process. The project will involve close community consultation and participation in design and implementation phases, a process which will support a sense of ownership over the investments. Education and communication programs will be implemented to induce knowledge, attitude and behavioral changes targeted towards a range of drinking water and sanitation issues, and citizen engagement mechanisms will be introduced to enhance accountability and recourse.

(ii) **Institutional Sustainability:** The overarching goal for improving water sector governance is to create a coordinated and responsive institutional framework, where the roles and responsibilities of actors are clear. This will facilitate the creation of an enabling environment for service providers—utilities and communities— through which quality and affordable services can be provided to households and businesses. The project will provide capacity building and technical assistance for the national and local agencies, and will closely engage them in project implementation and supervision, which will contribute to the ownership of project activities and outcomes.

(iii) **Financial Sustainability**. Financial sustainability will be supported by a range of activities addressing the issue both at the central and local levels. Specifically, this will include a focus on strengthening the capacity of water service providers, in terms of commercial systems, technical skills, and customer relations. The objective is to enable operators to provide affordable services of acceptable quality, which satisfy customer expectations and allow sufficient financial revenues to be generated and sustained over time. As part of this process, the project will introduce modern practices of applying consumption-based, cost-reflective tariffs – which consider operating and maintenance costs, and include a reserve for asset replacement over time. Furthermore, financial sustainability objectives have been considered in the system design process and proposed activities incorporate findings from ability and willingness to pay assessments[12]. Support at the central level will revolve around creating an enabling environment, through improved financial regulation and institutional mechanisms to support service delivery in rural areas.

(iv) **Technical Sustainability.** The project will apply technical design standards and methods, which will support operational sustainability. This will include careful consideration of

[12] Willingness-to-Pay assessments have been carried out that indicate that a move towards cost reflective tariffs is feasible without exceeding affordability thresholds (Willingness-to-Pay for Water and Sanitation Services, June 2015 – prepared by DHInfrastructure, financed by ADB TA-8375 KGZ)

water source options (quality, quantity, security / climate resilience[13], and operational implications), life-cycle costs, disinfection approaches and operational capacity constraints. The selected water supply investments will support the piloting of an aggregation approach, in which provision of technical services for maintenance and repair can be introduced in a viable way. In addition, the focus on the modernization of technical standards and designs will provide water supply schemes that can be managed efficiently and operate reliably; meeting customer demands for levels of service and affordability.

(v) **Environmental Sustainability:** The project design has integrated principles of environmental sustainability. Specifically, this will include assessments of sustainable yields, water source protection, water conservation (particularly targeting wasteful irrigation practices and losses due to poor operations and maintenance), and systems to support safe collection and disposal of wastewater and sludge.

51. It is intended that the project provide programmatic support at the national level, related to sector policy, planning, and regulations, and at the local level, to enable or create conditions for sustainable water and sanitation service delivery in the project areas beyond the lifetime of the project.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

52. The overall risk for the project is *Substantial*. The risk rating proposed by the team takes into account the implementation experience of the RWSSP-2, capacity of the responsible agencies and complexities associated with the context and institutional development agenda.

53. The *Substantial* rating for risks associated with the Political and Governance and Macroeconomic categories are common to all Bank-financed operations and are informed by the Bank's analysis of the Kyrgyz Republic's performance in such categories, which consider the general risks associated with the operating environment. These are considered common portfolio issues and are addressed through systematic monitoring, training and capacity building activities implemented under the guidance of the country management unit.

54. The risk rating for sector strategies and policies has been rated as *Substantial* to reflect significant challenges associated with the implementation of the water sector strategy, which requires substantial financing, strong Government commitment and parliamentary support. It is acknowledged that the capacity-strengthening activities at the central and local levels will require time and sustained efforts. Moreover, risks associated with the Institutional Capacity for Implementation and Sustainability have also been rated as *Substantial*. This risk rating reflects existing capacity constraints at the local (Ayil Okmotus) and central (DDWSWD) levels, which

[13] The project has also been designed with mitigation measures to address potential risks associated with climate change and natural disasters, supported by the application of the Climate and Disaster Risk Screening Tools (for IDA 17 projects). Specifically, potential issues associated with water security will be addressed through detailed assessments of water source options and through introducing demand side measures to support efficient use of the water resources.

may affect sustainability of water service delivery. During project preparation however, key capacity issues have been identified and relevant activities have been included into the design to strengthen these institutions to fulfill their mandate. Potential institutional risks associated with project implementation have been mitigated through engaging ARIS in the process.

55. In summary, despite this being the third in a series of projects, some *Substantial* risks are still apparent. These relate largely to the operating environment and include institutional capacity constraints. The Bank and the implementing agencies are both cognizant of the risks and have incorporated elements into the project design for mitigation, building upon experience of previous projects and incorporating lessons learned into the project design. Activities included under the project are demand-driven and have strong ownership at various levels. With sufficient support during implementation from the Government and the Bank, potential risks can be readily identified and resolved.

56. The "Other" *Substantial* risk identified during preparation was related to potential legacy issues, which refers to unquantified, unresolved issues from previous projects (financed by ADB and World Bank). Early stages of RWSSP-2 were burdened by such issues, which resulted in a reallocation of funds mid-course to rectify uncompleted technical problems and address outstanding community concerns from the previous project (RWSSP-1). These concerns, if they arise, have the potential to disrupt investment plans identified and appraised under this project. In recognition of these potential risks, the Bank carried out an assessment of potential legacy issues during preparation and agreed with MoF that two sub-projects[14] in Issyk-Kul oblast will be included in the first phase of investments, to ensure outstanding issues are resolved. Furthermore, this topic has been specifically addressed through the design of the citizen engagement activities and grievance redress mechanism (GRM) for the project, which outline specific procedures for managing such issues, if they arise.

VI. APPRAISAL SUMMARY

A. Economic Analysis

57. The economic benefits from the project are generated by improved quality of water supply services to households and improved sanitation services in schools, pre-schools and other public buildings. Improving these services will enhance welfare by reducing coping costs (for example, time saved from water collection, reduced need for in-house drinking water treatment). Improving the quality of water supply, sanitation services, and hygiene practices—through the WASH educational program—are also expected to produce welfare benefits through improved health.

58. The project's economic analysis relies on activities identified during project preparation to assess benefit and cost streams. It includes (i) the cost of all project components, including estimated O&M costs and project implementation costs and (ii) all measurable benefits, including decreases in the time spent collecting water, welfare gains at household level associated with reduced need for in-house treatment (for example, boiling of water), and reduced

[14] Chelpek and Darkhan in Issyk-Kul Oblast

incidence of water-related diseases such as infectious hepatitis and acute enteric infections as a result of improved access to quality water and decline in the reliance on standing water sources. Expected benefits are based on results observed from similar projects in the country—the STICBP, RWSSP1 and 2, and BOUIP and BOUIP-AF. As with all economic analyses, the costs are perfectly observed while the benefits are not.

59. The estimated ERR is 13 percent and the NPV is US$19.99 million, assuming a social discount rate of 5 percent,[15] 20 years of asset life of water supply systems, including the project implementation period, with corresponding benefits to be realized starting in 2021. A sensitivity analysis was conducted, analyzing a reduction of 20, 40 and 50 percent of expected benefits, an increase in costs by 10, 25 and 45 percent and an increase in project implementation by 1 and 2 years. In all cases, ERR rates remained above 5 percent, respectively, which support the economic rationale for the proposed project. Annex 5 provides additional information.

B. Technical

60. The Bank has reviewed and confirmed that the proposed investments reflect Government priorities and are aligned with strategic sector principles addressing key technical issues. The infrastructure solutions proposed are considered technically sound concepts, supported by engineering investigations and designs, and take into account operational capacity constraints and life-cycle costs to promote project sustainability. More specifically, to enable access to water supply services in the project areas existing infrastructure will be rehabilitated or replaced and distribution coverage will be expanded. Where technically viable, a single system will be developed to supply multiple villages within the project areas. A comprehensive approach, including consideration of alternative water sources and climatic factors, has been applied to optimize designs and reduce costs, which will address the infrastructure backlog in the project areas and allow the Ayil Okmotus to meet increasing demands associated with population growth. Furthermore, the selection of rural villages to be included under the project and proposed investments will leverage and support the institutional reforms by establishing models for aggregated systems, which extend services to areas beyond the local government boundaries—that is, serving multiple Ayil Okmotus. Fourteen such sub-projects have been identified and prioritized for financing under SRWSSDP. For each sub-project, a concept-level design has been prepared and the Bank specialists, along with representatives of the Government, have assessed and verified the existing conditions and proposed concepts.

61. Cost estimates have been prepared and reviewed by the Bank. The estimates are based on a comparison of costs from RWSSP-2 and include provisions for escalation and contingencies. The proposed contract packaging considers potential technical and procurement risks and geographical constraints, and where possible seeks to increase efficiency through economies of scale (by grouping similar investments into larger packages). Moreover, the procurement packaging and implementation timeframes were reviewed from a technical perspective, and it was confirmed that the approach incorporates lessons learned though the experience of RWSSP-2 and is considered achievable within the project duration.

[15] As per new Guidelines a 5 percent Discount Rate is recommended for project evaluation - *Discounting Costs and Benefits in Economic Analysis of World Bank Projects, May 2016.*

62. Detailed engineering designs and preparation of bidding documents have commenced for three of the sub-projects, with a total value of around US$7.0 million (25 percent of the total project costs). Advance procurement activities are expected to start prior to project effectiveness to ensure readiness for implementation. The first packages will include:

Works

- Rehabilitation and Construction of Water Supply System, Kyrgyz-Ata, Osh Oblast (covering 3 villages, serving around 16,202 people).
- Rehabilitation and Construction of Water Supply System, Togotoi, Osh Oblast (covering one village, serving 2,267 people).
- Rehabilitation and Construction of Water Supply System, Sultan, Chui Oblast (covering 9 villages, serving 8,479 people).

Consultancy

- Detailed engineering designs and preparation of tender documents for four sub-projects in Osh oblast
- Detailed engineering designs and preparation of tender documents for five sub-projects in Chui oblast

63. Further details on the technical concepts guiding the water supply investments under component 1 are presented in Annex 2.

64. The retrofitting works for sanitation facilities in schools, kindergartens/pre-schools, and health clinics will build upon the successful implementation models and experience developed through the RWSSP-2. Standard designs will be prepared in consultation with the Ministry of Education and Ministry of Health and applied (and adapted as required) where possible to selected social institutions within project areas. The project will cover all schools and kindergartens in the target rural communities. The planning costs allocated for this activity are around US$30,000 per school / kindergarten, or US$1,380,000 in total for 46 facilities within the project areas. This will adequately cover these institutions, and is estimated to provide services to more than 16,000 students. Any remaining funds will be used to upgrade sanitation facilities in other eligible social facilities (including health clinics) – decided in consultation with the Ayil Okmotus and on demand basis. These works will complement the water supply investments and together will contribute to improved development outcomes. Component 2 activities will be managed directly by ARIS, who will contract individuals (or small firms / NGOs as appropriate) for design and supervision of works. Small works contracts will be used for implementation of the facility upgrades/retrofitting.

C. Financial Management

65. The project's Financial Management (FM) assessment established that FM arrangements existing in ARIS meet Bank requirements. The assessment took into account ARIS's significant past experience in implementing Bank-funded projects, including adequate staffing of the FM function and documentation of the FM arrangements in the draft POM. FM arrangements, including budgeting and planning, internal control procedures, and staffing of the FM function are adequate. With respect to accounting and reporting, ARIS will use the system based on the

existing accounting software, which will be modified for the accounting and financial reporting purposes of the SRWSSDP. The accounting software is specifically designed to meet Bank-financed project requirements, including the ability to generate IFRs, attachments of withdrawal applications, including SOEs, and annual financial statements. The annual audits of project financial statements will be provided to the Association within six months after the end of each fiscal year and at project closing. The Recipient has agreed to disclose the audit reports for the project within one month of their receipt from the auditors by posting the reports on the ARIS website. Following the Bank's formal receipt of these reports, the Bank will make them publicly available according to the Bank's Policy on Access to Information. As part of the project's 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 Annex 3 and 4.

66. Disbursements from the IDA Credit and Grant Accounts will follow the transaction-based method, that is, traditional Bank procedures, including advances to designated accounts, direct payments, Special Commitments and reimbursement (with full documentation and against SOEs). Two separate (Credit and Grant) designated accounts will be opened in a commercial bank acceptable to the Bank. For payments above the minimum application size, which will be specified in the Disbursement Letter, ARIS may submit withdrawal applications to the Bank for payments to suppliers and consultants directly from the Credit and Grant Accounts. Disbursement arrangements will be detailed in the Disbursement Letter.

D. Procurement

67. A procurement capacity assessment was conducted for the SRWSSDP, which confirmed that the procurement capacity in ARIS meets Bank requirements. Procurement for the SRWSSDP will be carried out in accordance with "Guidelines: Procurement of Goods, Works and Non-consulting services under International Bank for Reconstruction and Development (IBRD) Loans and International Development Association (IDA) Credits and Grants by World bank Borrowers," dated January 2011 (revised July 2014); "Guidelines: Selection and Employment of Consultants under IBRD loans and IDA Credits and Grants by World Bank Borrowers," dated January 2011 (revised July 2014); and the provisions of the legal agreement.

68. ARIS has been effectively managing procurement activities under the BOUIP, the Village Investment Project 2, and RWSSP-2. The main office of ARIS is staffed by four well-qualified and experienced procurement specialists, one of which will be dedicated to the SRWSSDP team. Two small oblast-level liaison offices will ensure adequate coverage of the country and provide administrative and logistical support for ARIS field staff. Risk and mitigation measures were agreed and have been satisfactorily addressed by ARIS. The key issues and risks include: (i) potential risk of delays in the implementation of the project due to the complexity of procurement processes and decision-making that involves local governments, and (ii) insufficient contract monitoring and contract management skills. The corresponding mitigation measures include: (i) ensuring the publication of procurement notices and contract award information as required by the Bank Procurement and Consultant Guidelines, including publication on the E-GP website; (ii) preparation of the POM, including a procurement section detailing procurement arrangements and an independent complaint handling mechanism, including for contract management; (iii) enhanced contract management through the hiring

international individual consultants; (iv) prompt recording, communication to the Bank, and addressing of all complaints received from any supplier or consultant relating to the procurement and contract management process; and (v) maintenance of up-to-date procurement records.

69. ARIS in consultation with DDWSWD, developed the Procurement Plan for the first 18 months of project implementation. This plan, dated August 17, 2016, will be updated annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. The procurement arrangements are presented in Annex 3.

E. Social (including Safeguards)

70. Project preparation benefited from analysis of outcomes and lessons learned from the two preceding projects. The project is expected to have positive social impacts such as improved water accessibility, hygiene, and sanitation standards in the project communities, which in turn have positive impacts on the quality of life, especially of women, children and vulnerable groups. Improved sanitation practices and greater awareness of the population is expected to have a trickle-down effect on the health situation of the population. The main project beneficiaries include residents of the participating communities. At the same time, awareness raising campaign and greater involvement of civil society, local and national level governance institutions will ensure a broader project impact and change in cultural practices in hygiene and sanitation.

71. **Involuntary Resettlement (OP 4.12)**: Project activities related to the rehabilitation of existing and/or construction of new water supply systems (component 1) in the target areas and investments for retrofitting existing sanitary facilities under component 2 are likely to have temporary and permanent land-acquisition implications. Therefore, OP 4.12 Involuntary Resettlement has been triggered and a resettlement policy framework (RPF) prepared for the project. The RPF public consultations were held on February 11, and June 23, 2016 in Bishkek and February 16, June 24 2016, in Osh –including participants from each target rural community. Feedback from the consultations was reflected in the revised final document, disclosed both in-country and at the Infoshop on July 6, 2016 and July 7, 2016 respectively. The RPF provides guidance on the preparation of resettlement action plans (RAPs) during project implementation.

72. **Gender**. Women make up more than a half of the population of the project area. Women tend to be responsible for households activities, including provision of water, cleaning and sanitation. Surveys carried out under RWSSP-2, indicate that some 80 percent of those tasked with collecting household water (for example, for drinking/bathing/washing) were women. Furthermore, time spent for this activity is significant, due to long distances to the nearest water sources (for example, standpipe or canals). At the same time, women's participation in the decision-making process, especially at the local level, is limited. Traditional decision-making mechanisms in rural areas of the Kyrgyz Republic tend to involve largely men and exclude women and youth from the process[16]. The project will support active participation of women and seek to address specific gender-related needs, including gender-informed activities to support inclusion and equality. Under component 2, the design and implementation of awareness

[16] ICG, 2008. Kyrgyzstan: the challenge of judicial reform. Asia Report #150.

campaigns will include a central role for women's groups. This approach acknowledges that women are often powerful agents of change at the household level; provide an important gender perspective to the issues; and give's voice to women in the community. In the Kyrgyz Republic, the number of women's groups is relatively low, and yet they are active and focus on specific needs of women in the country.[17.] The project includes gender-disaggregated indicators in the Results Framework.

73. **Citizen Engagement**. Citizens have and will continue to be engaged in identifying priority project activities through consultations with different groups of stakeholders and feedback from direct and indirect project beneficiaries on proposed project activities. More specifically, under component 1, local community members will be involved in the project at all stages: detailed design, monitoring, and evaluation/lesson learning. Under component 2, in shaping and implementing information campaigns, different groups of beneficiaries, and particularly women's groups, will be involved in formulating and passing on the message about proper sanitary practices and hygiene. As part of component 3, the project will promote service-oriented management that will include feedback from consumers on the services provided to them. Some of the Citizen Engagement undertakings would be supported through technical assistance under the institutional development component and incorporates citizen perceptions of project activities and processes.

74. These information/awareness-building and demand-side processes will be supplemented by a grievance redress mechanism (GRM) which will cover all aspects of project implementation, including, inter alia, grievances related to involuntary resettlement. The GRM will also include a pro-active element through which ARIS will seek comment from beneficiaries once a year, as well as establishing the systems for receiving and processing unsolicited comments/complaints. GRM data will be collected, compiled and reported in quarterly reports, including an analysis of the different types of complaints. Grievances will be discussed during Bank implementation support missions with a view to responding to feedback and adapting project procedures causing harm to beneficiaries.

75. **Conflict Filters**. SRWSSDP has taken into account the findings of a Conflict Filter assessment carried out during project preparation. Key sources of potential tension and conflict were identified and include: (i) inequality of services (access and quality) within the project areas; (ii) perception of or actual implementation delays; (iii) social resistance for tariff increases; (iv) change in water-use behaviors and practices; and (v) transparency and governance issues. These issues will be addressed through a range of technical, social and institutional support mechanisms. A summary of mitigation measures include: (i) engaging during both project preparation and implementation in pro-active communication that explain to both beneficiaries and the public at large the benefits brought by the project to the target communities; (ii) applying clear and transparent criteria for investment selection and design, including technical, social and economic/poverty indicators; (iii) developing suitable grievance redress standards and measures for the project (not only for safeguards-related issues); and (iv) identifying early on the propensity to social tensions and/or possible conflicts in the project areas by requesting ARIS to assess such risks as part of its social and environmental impact checks.

[17] WDR, 2013. Gender Equality and Development. Background Paper: Kyrgyz Republic Country Case Study.

F. Environment (including Safeguards)

76. **The SRWSSDP will not finance any activities with significant or irreversible environmental impacts, and therefore is classified as Environmental Category "B".** The Project will focus on achieving concrete, verifiable and sustainable results in the improvement of water supply and sanitation service delivery to participating rural communities. While the environmental impact of the proposed project will be largely positive, some adverse impacts may be generated. The identified positive environmental impacts of the project include (i) improved water management and efficiency through replacement of leaking pipes and production systems, replacement of continuously running communal stand pipes with household stand-pipes, and installation of individual meters, together with support for improved operations; (ii) the overall water consumption for respective rural systems, will be less than actual quantities and original design/planning estimates due to efficiency gains; (iii) help in protecting ground and surface water resources by promoting the construction and use of environmentally sound sanitation facilities for human waste disposal; (iv) improved citizens' skills and awareness in planning and implementation of local activities, with particular attention to environment protection, and (v) sustainable management of improved infrastructure by communities, which will bring environmental and social benefits related to natural resources management.

77. The potential estimated environmental issues associated with the small/medium scale activities for local communities will be limited, temporary nuisances resulting from construction activities, and may include: (i) increased pollution due to construction waste; (ii) generation of dust, noise, and vibration due to the movement of construction vehicles and machinery; (iii) associated risks due to improper disposal of construction waste and asbestos, or minor operational or accidental spills of fuel and lubricants from the construction machinery; (iv) improper reinstatement of construction sites upon completion of works. These potential environmental impacts are readily identifiable, small in scale, and minimal in impact and can be effectively prevented, minimized, or mitigated by including into the work contracts specific measures to be taken by contractors under close supervision of compliance by ARIS. Use of construction materials that are hazardous to human health (for example, asbestos and asbestos-contained materials [ACM]) will not be permitted. ACM waste will be collected, transported and finally disposed by applying special protective measures in accordance with hazardous waste handling standards.

78. Effective measures have been put in place under the SRWSSDP to address and closely monitor safeguards issues. An Environmental and Social Management Framework (ESMF) for the project consistent with Environmental Assessment (OP 4.01) requirements was prepared by ARIS and found satisfactory by the World Bank. The ESMF public consultations were held on February 11, and June 23, 2016 in Bishkek and February 16, June 24 2016, in Osh –including participants from each target rural community. The final ESMF documents in both Russian and English languages were disclosed in country and on the Bank Infoshop on July 4, 2016 and July 6, 2016 respectively. The ESMF will be incorporated into the POM. Each activity to be financed under the project will be reviewed for safeguards risks in line with OP4.01, and must obtain the clearances required by Kyrgyz national regulations.

79. Site-specific Environmental and Social Management Plans (ESMPs) will be prepared for each activity. Implementation of environmental mitigation and compliance measures during the RWSSP-2 was carried out by the contractors (construction firms) and monitored by ARIS staff (engineers). This practice will continue under the SRWSSDP. During implementation, ARIS will have overall management responsibility for ensuring that the measures indicated in the EMP are being properly performed. ARIS, in collaboration with the local authorities of the participating rural communities and the Kyrgyz Forestry and Environment Preservation Agency, will perform the environmental monitoring during both construction and operation phases, as specified in the monitoring plan of the ESMP. Appropriate training on Bank safeguards will continue to be provided under the SRWSSDP to local officials, contractors, and community representatives.

80. The project will not finance Category-A activities, will not support activities that target natural habitats or protected sites, and will prohibit those activities that can cause a significant loss or degradation of any significant natural habitat. The environmental screening process will check for the presence of physical cultural resources. In addition, chance find procedures will be included in all works contracts.

81. **Institutional Safeguards Arrangements**: ARIS will be responsible for safeguards management under the proposed project. With qualified personnel and well established systems, ARIS has demonstrated their capacity and developed a strong record of experience with environmental and social safeguards aspects of projects financed by the Bank and other international and bilateral donors, including RWSSP-2. Furthermore, as per the Bank's recommendations during preparation, ARIS has started to broaden their capacity for safeguards management through engaging and training new staff in this field.

G. Other Safeguards Policies Triggered

82. **Projects on International Waterways (OP/BP 7.50)**. OP 7.50 has been triggered because the project will finance rehabilitation, improvement, or minor additions/expansions to drinking water supply systems located within the transboundary basin of the Syr Darya, Talas and Chui Rivers. However, project interventions are not expected to adversely affect water quality or quantity to downstream other riparian states. It is anticipated that the nature of Project activities will not (i) cause appreciable harm to the other riparian states as it will not adversely change the quality or quantity of water flows, and (ii) will not be appreciably harmed by other riparian state's possible water use. Infrastructure rehabilitation and modernization and water supply management improvements should increase system efficiency, thereby generating water savings and providing users with a reliable water supply. Further, the project aims to improve efficiency of water use and to substantially reduce technical losses and high water consumption rates. Leakages will be reduced through infrastructure rehabilitation and replacement which will help conserve ground and surface water resources. Water conservation will be promoted through improved demand-management measures, i.e., replacement of continuously running communal stand pipes, replacement of communal stand pipes with household stand-pipes, and installation of individual meters.

83. The Exception from the requirement to notify other riparian's under OP 7.50 has been granted because the nature of the Project activities meet the policy requirements mentioned in paragraph 1 (i) and (ii) above.

H. World Bank Grievance Redress Service (GRS)

84. 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

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project

Project Development Objective

PDO Statement

The project development objectives (PDO) are to assist the Kyrgyz Republic to (i) improve access to and quality of water supply and sanitation services in the Participating Rural Communities; and (ii) strengthen capacity of the Recipient's institutions in the water supply and sanitation sector.

These results are at the:	Project Level

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
				YR1	YR2	YR3	YR4	YR5				
Number of people in rural areas provided with access to an improved water source under the project	✓	Number	0	0	0	26,500	72,500	100,000	Semi-Annual	Reports	ARIS	
Number of people in project areas provided with access to improved sanitation facilities under the project.		Number	0	0	0	3,000	11,000	16,000	Semi-Annual	Reports	ARIS	
Operating Cost Coverage Ratio in project areas		Ratio	TBD	-	-	0.50	0.75	>1.0	Annual	Reports	ARIS	
Average hours of water supply per day in project areas		Hours per day	<12	-	-	-	16	>18	Semi-Annual	Reports	ARIS	
Institutional Support Plan for DDWSWD developed and approved		Yes or No	0	-	Draft	Reviewed and Approved	Yes	Yes	Semi-Annual	Reports	ARIS	

Intermediate Results Indicators

				Cumulative Target Values					Frequency	Data Source/	Responsibility	Comment

Indicator Name	Core	Unit of Measure	Baseline	YR1	YR2	YR3	YR4	YR5		Methodology	for Data Collection	
Component 1												
Direct project beneficiaries (percentage of whom are female)	✓	Number, Percentage	0	0	0	26,500 (52%)	72,500 (52%)	100,000 (52%)	Semi-Annual	Reports	ARIS	
New piped household water connections resulting from the project intervention	✓	Number	0	-	-	3,250	8,900	12,280	Semi-Annual	Reports	ARIS	
Number of social institutions in project areas connected to the water supply network		Number	0	-	-	20	30	46	Semi-Annual	Reports	ARIS	
Number of service providers with signed agreements with SES Department		Percentage	0	-	-	3	9	12	Semi-Annual	Reports	ARIS	
Component 2												
Number of social institutions in project areas benefiting from improved sanitation facilities.		Number	0	-	-	10	20	46	Semi-Annual	Reports	ARIS	
Number of people trained to improve hygiene behavior and sanitation practices (% of whom are women)	✓	Number, percentage	0	-	-	8,000	17,000	26,250	Semi-Annual	Reports	ARIS	
Preparation of standard designs and guidelines for on-site household sanitation		Yes or No	0	-	Draft	Reviewed and Approved	Yes	-	Annual	Reports	ARIS	
Component 3												

Number of service contracts signed		Number	0	-	3	6	9	12	Semi-Annual	Reports	ARIS	
Commercial Systems Operating in project areas		Number	0	-	-	3	6	12	Semi-Annual	Reports	ARIS	
Preparation of connection subsidy strategy in project areas		Number	0	-	3	6	9	12	Semi-Annual	Reports	ARIS	
Legal creation of aggregated water service provider (pilot)		Yes or No	0	-	Draft	Reviewed and Approved	Yes	Yes	Semi-Annual	Reports	ARIS	
Number of villages with updated information on the water supply and sanitation national data base		Number	0	-	200	800	1300	1805	Semi-Annual	Reports	ARIS	
Percentage of beneficiaries satisfied with the participatory process and level of engagement in the project.		Percentage	0	-	>60%	>65%	>70%	>75%	Annual	Reports	ARIS	

Explanatory Notes

1. **Number of people in rural areas provided with access to an improved water source under the project.** This core sector indicator captures the cumulative number of people benefiting from access to new piped water supply system financed by the project. The project will support the installation of around 12,280 new connections to a household yard stand pipe, which will cover around 70 percent of project beneficiaries. The average household size is 5.7 persons (as per to recent data provided by the Ayil Okmotus). It is estimated, that remaining 30 percent of the project beneficiaries will receive water through a public standpipes to be installed in cases where it is not technically or economically viable to provide services through individual connections. Population estimates are based on figures provided by DDWSWD through official correspondence to the Bank, which makes reference to National Statistics Committee data, 2015.

2. Number of people in rural areas provided with access to improved sanitation facilities under the project. This indicator captures the cumulative number of people benefiting from access to improved sanitation facilities in schools, kindergartens and other eligible social facilitates, financed under component 2 of the project.

3. Operating Cost Coverage Ratio (OCCR). This PDO indicator relates to efficiency and financial sustainability of water services in project areas. It captures, outcomes related to the physical investments under component 1 and the institutional support activities, at the national and local level, financed under component 3 – and for this project it is a proxy indicator to measure strengthened capacity of sector institutions. Specifically, the indicator reflects the financial performance of the service provider as a ratio of total revenues and total operating expenses. The baseline values will be determined during year one of implementation and will be measured by the service providers, thereafter as part of their operating procedures. Average values will be reported to the Bank annually. To facilitate achievement of this indicator and ensure sustainability of investments, ARIS will enter in an agreement with the participating Ayil Okmotus at the early phases of implementation (prior to commencing works). This agreement will outline conditions for the Ayil Okmotus related to tariff increases, metering, billing and collection, and other necessary preconditions (including collection of connection fees from community members) to enable household connections to the new schemes.

4. Average hours of water supply per day. This quality-of-service indicator tracks progress of outcomes associated with the infrastructure investments under component 1, including activities that focus on increasing production, improving network distribution, and reducing NRW. To a lesser extent it will also be influenced by institutional support activities implemented through component 3. Baseline values reflect actual hours of supply at the time of appraisal. These values are expected to increase throughout the project duration, as availability of water improves with support of project-financed investments.

5. Institutional Support Plan for DDWSWD developed and approved. This indicator relates specifically to the objective of strengthening sector institutional capacity. It measures progress of the institutional support plan for DDWSWD with defined actions to support capacity improvement towards providing institutional support for sustainable water service delivery in rural areas.

6. Direct project beneficiaries (percentage of whom are female). This core indicator reflects an estimate of the population that directly benefits from activities/interventions supported by the project. This will be recorded as a cumulative amount. Population estimates are based on figures provided by DDWSWD through official correspondence to the Bank, which makes reference to National Statistics Committee data, 2015. Data provided by Ayil Okmotus has been used to determine the proportion of beneficiaries that are female.

7. New piped household water connections resulting from the project intervention. This intermediary indicator measures the number of new connections to be installed under the project – an important input into the estimate of project beneficiaries. The project will support the installation of around 12,280 new connections to a household yard stand pipe, which will cover around 70 percent of project beneficiaries.

8. Number of social institutions in project areas connected to the water supply network. This intermediary indicator measures the number of schools, kindergartens, health clinics and other eligible social facilities, connected to the water supply network in the project areas.

9. Number of service providers with signed agreements with SES Department. This intermediary indicator captures progress towards ensuring improved systems for water quality monitoring. As part of the quality assurance and operating procedures, water quality sampling and testing procedures will be introduced and agreements will be signed with SES Department for laboratory testing and certification.

10. Number of social institutions in project areas benefiting from improved sanitation facilities. This intermediary indicator measures the number of schools, kindergartens, health clinics and other eligible social facilities, in which the project has supported upgrades and rehabilitation of the sanitation facilities.

11. Number of people trained to improve hygiene behavior and sanitation practices (% of whom are women). This gender disaggregated indicator measures training outputs related to the sanitation and hygiene promotion and education activities, both at schools / kindergartens and within the project communities.

12. Preparation of standard designs and guidelines for improved on-site household sanitation. This intermediary indicator tracks the progress of outputs related to preparation of standard designs, including guidelines for construction and operations, for household latrines and septic systems for rural areas, this together with related education and social mobilization programs (to stimulate demand), will facilitate private household investments for these facilities.

13. Number of service contracts signed. This intermediary indicator tracks the progress of outputs related to institutional support activities provided under sub-component 3.1. Specifically, the project will also support the preparation of service contract agreements, to clarify and formalize respective responsibilities of the operator (CDWUUs) and asset owner

(Ayil Okmotus) and to support governance of service performance, tariffs and financing mechanisms

14. Commercial Systems Operating in project areas. This intermediary indicator tracks progress on the customization and installation of new commercial systems for each service provider. The commercial systems include activities that focus on billing and commercial management, customer-service policies and procedures, and citizen engagement and complaints handling/recourse mechanisms.

15. **Preparation of connection subsidy strategy in project areas.** Component 3 activities will support the Ayil Okmotus and service providers, to develop a connection subsidy strategy and tariff mechanisms to address the needs of poorest and most vulnerable groups with the project areas. This intermediary indicator will track the progress of this important output.

16. **Legal creation of aggregated water service provider (pilot).** As part of the institutional strengthening activities under component 3, the project will support the piloting of an aggregated service delivery model, which includes water service provision in more than one Ayil Okmotu. This activity is designed to enable more efficient and sustainable service delivery models. This intermediary indicator will track progress of this output.

17. **Number of villages with updated information on the water supply and sanitation national data base.** The project will support augmentation and institutionalization of the sector management information system/data base, building upon the work carried out under RWSSP-2**.** This system will be used to strengthen sector monitoring, evidence based policy development and investment planning. This intermediary indicator will track progress of this output.

18. **Percentage of beneficiaries satisfied with the participatory process and level of engagement in the project.** This indicator aims to report on the effectiveness of citizen engagement processes in the project. It will measure the level of satisfaction of project beneficiaries to the activities intended to engage them in project design, implementation and monitoring. The planned project surveys will be extended to obtain feedback from community members on their satisfaction with: (i) access to project information and awareness of decisions taken, (ii) their opportunities to provide feedback and participate in the dialogue, and (iii) the responsiveness of the implementing entity and Ayil Okmotus to feedback provided. These criteria will be rated on a 1-5 scale and will be equally weighted. ARIS will oversee this survey and report annually. Results will be gender disaggregated. Detailed mechanisms for collecting this data will be developed by ARIS, with support of the Bank, and included in the POM.

Annex 2: Detailed Project Description

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project

Background and Sector Context

1. The Asian Development Bank (ADB) and World Bank have on a collaborative basis financed two rural water supply and sanitation (WSS) projects in the Kyrgyz Republic; as a combined program these were known as Taza Suu. The Rural Water Supply and Sanitation Projects (RWSSP) 1 and 2 financed by World Bank and United Kingdom Department for International Development (DFID) faced a number of challenges during the early phases of implementation, but the latter years of the program demonstrated substantial progress with the successful implementation of the main components.

2. The second Rural Water Supply and Sanitation Project (RWSSP-2) was built on the experience gained during implementing RWSSP-1 and other assistance programs supporting local governments in the Kyrgyz Republic, including the Village Investment Project (VIP). The Implementation Completion and Results Report (ICR) for RWSSP-2 confirmed that despite difficulties in the early stages, the project helped to achieve the objectives of the JCSS (Joint Country Support Strategy, 2007-2010), submitted to World Bank Board in April, 2007. The JCSS, which included RWSSP-2, underlines "...urgent need to stem deterioration in key infrastructure and social services that will reduce non-income dimensions of poverty" and a clear "…need to support the Government's efforts to ensure and enhance the provision of, and access to, essential public services." The RWSSP-2 closed on October 31, 2014 and achieved a positive final performance rating.

3. In part, the success of the RWSSP-2 revolved around the transfer of its implementation to ARIS in July 2011, and with it the pace and quality of implementation improved dramatically. In particular, this included management of community relations, expectations and effective communications with civil society. As such, all proposed targeted 55 villages, including construction of the water supply systems in new villages and the rehabilitation of 26 RWSSP-1 village based subprojects, were completed.

4. Capacity strengthening activities supported under RWSSP-2, which are consistent with the actions proposed in the strategy, included:

- Development of a sector financial model and training program;
- Guidelines and training on chlorination techniques for rural water supplies;
- Support for billing systems and software installation, including training for the service provider;
- Development of a nation-wide database on attributes and performance of systems, at local, rayon and oblast levels;
- Capacity strengthening for rural water supply managers / service providers on customer service, operations and maintenance, tariff setting and billing management;
- Legal review of reforms required to implement the water and sanitation sector strategy;

- Collaborative project with UNICEF to implement WASH hygiene publicity and education program in schools and rural communities; and
- A review technical design standards in the water supply and wastewater sector, including recommendations to optimize and improve.

5. However, despite this progress capacity and institutional challenges in the sector remain and continued technical and financial assistance is required to support sustainability of service delivery. The achievements of RWSSP-2, need to be further reinforced, and entrenched in the day to day operations of Government at national and local level, and institutionalized at various levels. Furthermore, access to safe drinking water and hygienic sanitation facilities in rural areas remains low. The following graph shows that about 60% percent of the rural population obtain water from a water supply system (38 percent from water posts outside properties plus 22 percent from water posts inside properties). The remaining population (40 percent) use water obtained from ditches, rivers, channels, springs, water carriers, among others.

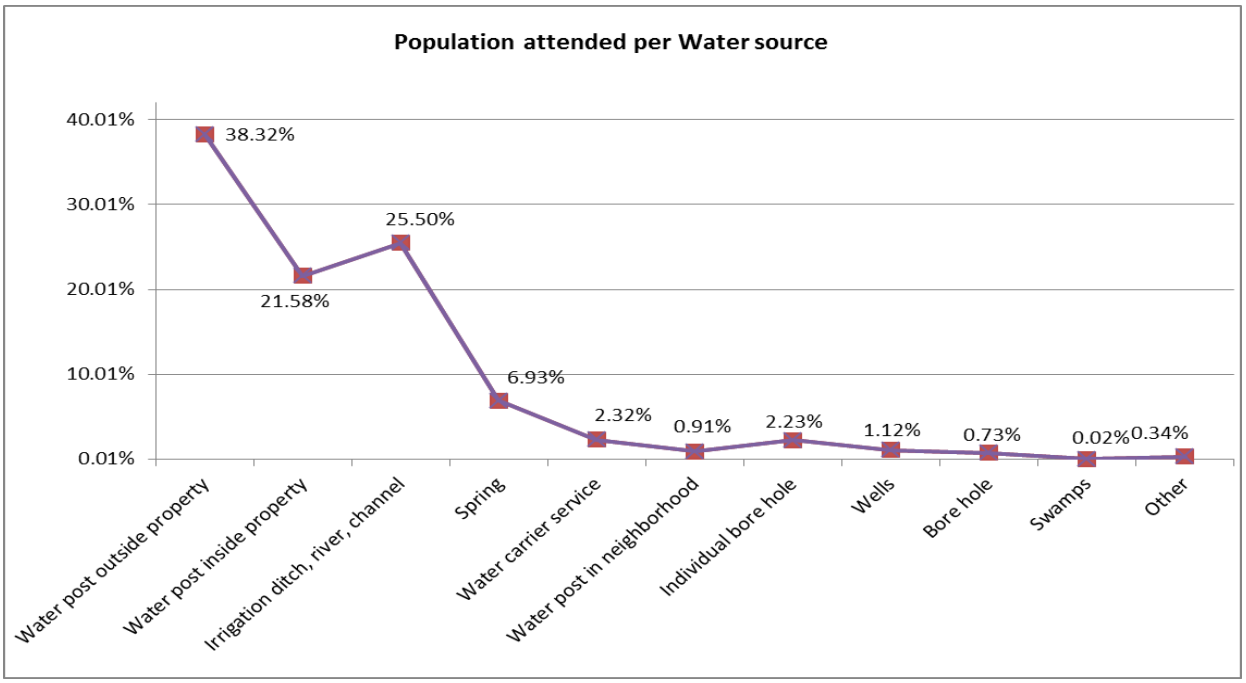


Figure A2.1: Analysis of water sources for rural population (from sector analytics supported by RWSSP-2, 2014)

6. Many village and small town water supply systems have not been rehabilitated and are partially or not at all functioning. This exacerbates tariff and revenue generation issues, whereby collection rates and tariffs are generally low because of poor service quality. Also, as presented in Figure A2.2, only about 37 percent of rural population have water supply for 12 or more hours a day.

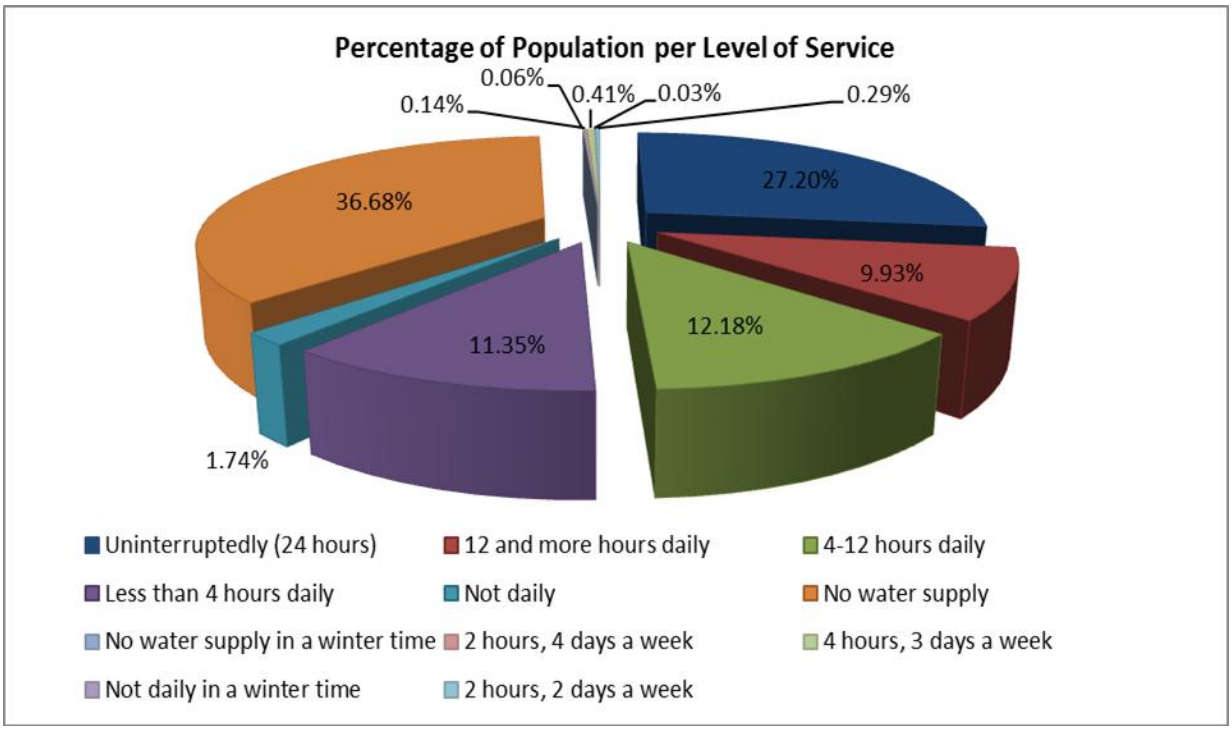


Figure A2.2: Analysis of water services for rural population (from sector analytics supported by RWSSP-2, 2014)

7. Estimates of investment requirements for the water supply and wastewater are currently imprecise; though there are estimates from independent external studies undertaken in the past. From these, investment costs required to achieve the goal of universal access to improved water supply in rural areas are estimated at around US$600 million over the next 15 years. Capital investments required to achieve sanitation coverage expansion targets have not yet been reliably estimated and will depend largely upon the adopted approach for promoting rural sanitation development, which requires further analysis and strategic planning.

8. An important component of the Taza Suu program was the formation of Communal District Water Users Unions (CDWUU) to operate and maintain reconstructed village water supply installations under these programs. Today there are about 390 CDWUUs functioning in rural areas. The "take up" of the CDWUU model was not complete across the country and range of operational performance and sustainability issues still remain.

9. Direct technical and management support is required for CDWUUs and other service providers; including institutional and post-construction support mechanisms. In addition, service providers need other forms of support, including policies and legislation which enable establishment of robust contractual relationships with the Ayil Okmotus. There is also a need for standard contracts and templates for the internal regulations of service providers and a need for national handbooks and guidelines on operation and maintenance (such as Standard Operating Procedures), amongst other areas. The provision of support can also help identify the need for capital maintenance and assist to establish more systematic procedures for asset management.

10. The European Bank for Reconstruction and Development (EBRD) is currently supporting water supply projects in Bishkek, Osh, Jalalabad, Karakol, Kara Balta and other cities, funded with loans from the EBRD, and with the Swiss Economic Cooperation Organization providing technical assistance. EBRD support includes tariff reform within affordability limits (including support to low income groups), increased collection rates (possibility with the establishment of the integrated utility bill collection system), and stronger contractual relationships between cities and service providers. These initiatives could provide wider benefits across the country's water and wastewater sector through the sharing of experience and knowledge gained from these projects.

11. The ADB's technical assistance (TA) program was designed to support the strengthening of policy and institutional arrangements in rural water supply and sanitation sector. The TA focused on the following two main areas:

- Gathering and disseminating lessons learned for future WSS development projects, including conducting a willingness-to-pay survey of rural population, and assessment of market for suppliers, consultants, and contractors.
- Capacity development of rural WSS institutions including: assessment and recommendations for rural WSS institutional framework, ranging from national level institutions down to service provision at village level; definition of roles and responsibilities of these institutions; recommendations for incentives and compensation plans; defining capacity development needs of institutions; and deliver training essential for the rural WSS institutions to carry out their roles and responsibilities.

12. This project has been designed to support outcomes from the ADB technical assistance and to provide a complementary program of activities to assist the Government to implement recommendations, towards the sector reform objectives and enhance the sustainability of rural water services. The project design will embrace opportunities for other donors to provide support within a common strategic framework and to support the Government to coordinate investments within the context of its own overall vision and strategy for the WSS sector.

Government's Programmatic Vision

13. The overall vision of the Government's water supply and sanitation sector reform program, to which this project contributes, include:

- Capacity strengthening and institutional development, particularly targeted towards the Ayil Okmotus and DDWSWD to strengthen their function, and also other stakeholder groups, including the next generation of engineers and managers;
- Strengthening of the regulatory framework and governance, including training of central institutions responsible for sector policy-making, planning/oversight, regulation, and service delivery;
- Implementation of pilot projects to demonstrate the opportunities for aggregation in the provision of services and technical support to local operators;
- Promotion of modern methods, and technology in the sector; and

- Scaling-up and accelerating rural and small town infrastructure development, including systematic rural sanitation/hygiene interventions and investments in sanitation at school facilities.

14. The SRWSSDP supports the Government's reform program, providing financing for: (i) water supply investments in target rural communities, including investments in potential aggregation models, (ii) sanitation investments in schools, kindergartens and other eligible social facilities in the same villages, (iii) institutional strengthening, and (iv) project management. It is intended to leverage infrastructure investments to strengthen key sector institutions (DDWSWD, Ayil Okmotus, and others) and the implementation capacities of leading institutions responsible for delivering all aspects of water and wastewater and sanitation services (Ayil Okmotus, oblast and rayon administrations, CDWUUs, design firms, contractors and others such as consultants and interested NGOs).

Selection of Priority Sub-Projects

15. A list of priority sub-projects, covering village clusters, for water supply investments was proposed by the Government during project preparation. This list was presented by the DDWSWD, the lead sector agency, and was discussed and agreed with ARIS (the project implementing agency for this component). To prioritize investment needs, a multi-criteria assessment was applied, which included consideration of the following:

- Current state of existing system (for example age, level of deterioration, coverage etc.);
- Public health issues (incidents of water borne diseases); and
- Readiness of the local Government authorities and community organizations to participate in the project and to adopt modern systems for water supply operations (including installation of meters and introduction of cost reflective tariffs – based on consumption).

16. Furthermore, due to practical considerations and to enable a concentrated level of effort for increased efficiency and development impact, it was decided to restrict the project interventions predominantly to two Oblasts – Chui in the North and Osh in the South. Four sub-projects in Issyk-Kul were also included in order to rectify technical issues and complete some outstanding unfinished works from the RWSSP-2. The prioritization process further separated the sub-projects into Phase 1 – priorities which includes 14 subprojects (6 in Chui, 6 in Osh and 2 in Issyk-Kul), and Phase 2 – which includes a further 5 subprojects (2 in Chui, 1 in Osh and 2 in Issyk-Kul). The list of priority sub-projects, with basic data is included in Table A2.1.

Table A2.1 List of Priority Sub-Projects – Phase 1 and 2 (Osh, Chui and Isyk-Kul Oblasts)

No.	Rayon	Ayil Okmotu	Name of a Sub-Project	Name of a CDWUU	Name of Villages Included	Population*
Osh Oblast – Phase 1						
1	Karasuu	Otuzadyr	Otuzadyr	Kyzyl-Tal-Suu	Otuzadyr	20,512
					Farkhat	
					Kyshabad	
					Karadobo	
					Kyzylsuu	
					Kojonbak	
					Savayaryk	
					Beshkapa	
					Kazarmala	
					Chokmala	
2	Nookat	Kyrgyz-Ata	Kyrgyz-Ata	Jaz-Tokoi-Suusu	Kyrgyz-Ata	16,202
					Akbulak	
					Borko	
3	Karakulja	Kashkajol	Togotoi	Beki	Togotoi	2,267
4	Aravan	Kerme-Too	Gulbaar	Suu-Turmush	Gulbaar	8,025
5	Alai	Sary-Tash	Sary-Tash	Too-Tolkunu-Suusu	Sary-tash	2,158
6	Chon-Alai	Kashka-Suu	Achyk-Suu	Jan-Bulak	Achyk-Suu	2,412
Osh Oblast – Phase 2						
7	Karasuu	Toloikon	Toloikon	Dangi-Suu	Toloikon	3,831
Sub-total for Oblast					**18**	**55,407**
Chui Oblast – Phase 1						
8	Chui	Ibraimov,	Sultan	Naz-Bulak, Bam-Bulak	Kyzyl-Asker,	8,479
		Burin,			Sultan,	
		Ak-Beshim			Lenin-JOl,	
					Alga,	
					Kara-Oi,	
					Taldy-Bulak,	
					Burana,	
					Kalygul,	
					Meenetkech	
9	Panfilov	Kurama	Panfilovka	Satybai-Ata	Panfilov	6,904
10	Sokuluk	Kun-Too	Kun-Too	Chorgo	Kun-Too	5,635
					Shalta	
11	Jayil	Jayil	Alekseyevka	Nariste-Bakyt	Alekseyevka	7,037
12	Sokuluk	Kyzyl-Tuu	Kyzyl-Tuu	Malovodnoe, Magaz-2009, Kara-Sakal	Malovodnoe Almaluu Kara-Sakal	3,281
13	Moskva	Tolok	Tolok	-	Tolok	1,275
Chui Oblast – Phase 2						
14	Issyk-Ata	Kochkorbaev, Ivanovka	Kenesh, Ivanovka	Water is Life, Bermet-Suu, Moltur-Bulak	Kenesh, Budenovka, Ivanovka	17,742
15	Alamudun	Tash-Moinok, Kok-Zhar	Gornaya Maevka, Kok Zhar	Birikken, Bulak-Azyk	Prohladnoye, Kyzyl-Birlik, Gornaya Maevka, Kok-Zhar	6,271

16	Kemin	Kok-Oirok	Kayindy	Kayindy-Suu	Kayindy	1,728
Sub-total for Oblast					**25**	**56,624**
Issyk-Kul Oblast – Phase 1						
17	Ak-Suu	Chelpek	Chelpek	Chegen-Usun	Chelpek, Burma-Suu, Tash-Kiya	8,884
18	Jeti-Oghuz	Darkhan	Darkhan	Jelden-Suu	Darkhan	7,200
Issyk-Kul Oblast – Phase 2						
19	Jeti-Oghuz	Kyzyl-Suu	Kyzyl-Suu	Jelden-Suu	Kyzyl-Suu	5,500
20	Jeti-Oghuz	Jeti-Oghuz	Jeti-Oghuz	Jeti-Oghuz	Jeti-Oghuz	20,834
Sub-total for Oblast					**6**	**42,418**
TOTAL (PHASE 1)					**38**	**100,156**
TOTAL (PHASE 1 &2)					**49**	**154,449**

Note: * Population figures were as presented by DDWSWD through official correspondence with the Bank, based on National Statistics Committee data, 2015.

17. The list of 20 priority subprojects, covers around 49 villages in 23 Ayil Okmotus – with total population of around 154,449 people. Using costs from RWSSP-2, total investment requirements for water supply infrastructure in the 20 sub-projects, was estimated to be in excess of US$32.0 million, which is beyond the existing allocation for this component under the project (US$21.1 million). It was therefore agreed during preparation that proposed subproject investment areas will focus on Phase I areas only to fit within the available financing limitations. As the engineering designs progress for Phase I and detailed cost estimates become available, further consideration will be given to implementing other sub-projects under Phase II – if funds are available. Furthermore, if additional financing becomes available the project design will be adjusted to consider Phase II investments and / or for scaling up into other areas.

18. Phase I priority investment areas were reviewed in detail during the project preparation process. It was confirmed, that each area has urgent needs for drinking water supply facilities. Existing systems (where available), are deteriorated and have exceeded their technical and economic design life span (often constructed in 1950's and 60's). As a result, the coverage (on average networks cover less than 20 percent of the population and access is provided mostly through communal standpipes) and quality of services (<12 hrs / day supply of untreated water) is extremely poor. During consultations, community representatives voiced their concerns regarding access to clean drinking water, referring to high incidents of water borne diseases within the community, and hardships associated with collecting water from stand pipes, distribution trucks and irrigation canals / drains – especially during the winter seasons when snow and freezing conditions are common (this task is typically borne by women and children). A strong willingness by the Ayil Okmotus, CDWUU's and community representatives, to participate in the project was observed and consultations included topics such as the adoption of modern practices for water services and operations (for example introduction of cost reflective tariffs for metered consumption rates).

19. A description of the first six Phase 1 project areas, for which detailed studies have commenced is included in Appendix A of this Annex.

Detailed Component Description

20. The project development objective (PDO) is to assist the Kyrgyz Republic to (i) improve access and quality of water supply and sanitation services in target rural communities, and (ii) strengthen capacity of institutions in the water supply and sanitation sector. This objective will be achieved through implementation of activities defined under four components:

- Component 1: Water Supply Investments
- Component 2: Sanitation Development
- Component 3: Institutional Strengthening
- Component 4: Project Management

21. Further details of the activities to be financed under each component are provided below.

Component 1 Water Supply Investments (US$21.1 million)

22. This component will address the needs for rehabilitation of existing and/or construction of new water supply systems in the target areas benefitting up to 100,000 people. The component will finance goods, works and services (including engineering design and construction supervision) and will include civil and electrical / mechanical installations, for water supply production (bore holes, well fields, intakes etc., disinfection, and pumping as required), transmission and distribution (networks, storage, meters etc.) to households in the project areas. This component will also finance preparatory activities including detailed engineering designs for scaling up investments under the program.

23. The water supply systems proposed to be financed under the project reflect careful consideration of several important design philosophy and implementation principals, including the objective of achieving equitable access and quality of services within the project areas; individual metering for each connection (and introduction of consumption-based billing), consideration of full life-cycle costs including assessment of water sources, consideration of climatic factors and resilience, and the capacity support requirements of the operator. Community and local governments will be involved in identifying priority investments in their respective areas through public consultations and meetings. Female beneficiaries and women's groups will be encouraged to participate in order to reflect women's voices in identifying investments of significance to them. The communities will continue to be involved in monitoring the quality of civil works through community monitoring processes. Costs associated with implementation of resettlement activities (as per RPF procedures) will be financed under component 1 through the central Government's contribution to the project.

24. While the project is required to follow regulatory design standards for the water supply systems (for example SNiPs and addendum to SNiPs – as appropriate), a number of key design philosophy and implementation principles have been defined during preparation. These include:

- **Equitable Access and Quality of Services within the Project Areas**. Where technically and economically feasible, the project will seek to cover all project areas through individual metered connections. The use of public standpipes will be minimized due to operational difficulties and challenges in maintenance. Furthermore, the system

design will include zoning with bulk meters, pressure and flow control valves (where applicable, especially for gravity systems) to ensure equitable distribution of water between up- and down-stream village clusters.

- **Technology Choices and Life-Cycle Costs**. The system design will consider a range of materials, equipment and technology options available and associated costs to ensure that the infrastructure and equipment can be adequately serviced and maintained and are resilient and robust. The capital and operating/maintenance costs will be reviewed in the process to ensure that solutions offered consider the full life cycle costs and are, therefore, cost effective to operate and maintain.
- **Water Source Options Assessment**. The design process should review and assess water source alternatives and not just seek to simply replicate existing systems. This review should consider the costs and benefits associated with water source alternatives, including potential water security constraints (for example variable seasonal flows), water quality requirements, operating costs, and associated capital infrastructure costs for production, transmission and distribution.
- **Engineering Design and Construction Supervision**. Due to the scale of some of the infrastructure works and considering lessons from RWSSP-2, international expertise will be engaged through the project to support design review, construction supervision and contract management.

25. Two other important elements related to the technical designs and implementation of activities under this component are as follows:

- **Operating Models**. The default water service operator is the CDWUU, who will enter into a contract for service provision with the Ayil Okmotus. However, additional institutional models will be assessed, including the potential to create aggregated service delivery models that include more than one Ayil Okmotu, where viable, which will be piloted and demonstrated through the project. This analysis will be informed by the outputs of the ADB-financed Water Sector Reform TA, which is reviewing institutional mechanisms for water service delivery. Institutional support activities will be defined under component 3 to provide backstopping and support for rural water supply operators to help enable sustainable service delivery.
- **Community Contributions**. The SRWSSDP will not have a mechanism for mandatory community contribution (in previous projects, communities were expected to contribute 5 percent of the capital investment costs). However, community members will be responsible for the cost of the household connection. These costs will exclude the water meter, which will be provided by the project, but include all other materials and labor for connection to the individual yards/houses. Community members may also consider allocating any already collected contributions to a fund for future maintenance or towards the costs of connections. The matter will be addressed through the community consultation process and support under component 3.

26. Fourteen sub-projects (Phase I) have been identified and prioritized for financing under SRWSSDP, serving around 100,000 people in 35 villages. For each sub-project a concept-level design has been prepared, and Bank specialists and a representative of the Government have

assessed and verified the existing conditions and proposed concepts. Detailed engineering designs and preparation of bidding documents have commenced for sub-projects, with total value of around US$7.0 million (25 percent of the total project costs). Advance procurement activities are expected to start prior to project effectiveness to ensure readiness for implementation. The first packages will include:

Works

- Rehabilitation and Construction of Water Supply System, Kyrgyz-Ata, Osh Oblast (covering 3 villages, serving around 16,202 people)
- Rehabilitation and Construction of Water Supply System, Togotoi, Osh Oblast (covering one village, serving 2,267 people)
- Rehabilitation and Construction of Water Supply System, Sultan, Chui Oblast (covering 9 villages, serving 8,479 people)

Consultancy

- Detailed engineering designs and preparation of tender documents for four sub-projects in Osh oblast
- Detailed engineering designs and preparation of tender documents for five sub-projects in Chui oblast

27. Cost estimates have been prepared by the Government and reviewed by the Bank. The estimates are based on a comparison of market rates from RWSSP-2 and include provisions for escalation and contingencies. The proposed contract packaging considers potential technical and procurement risks, geographical constraints, and where possible seeks to increase efficiency through economies of scale (by grouping similar investments into larger packages). Moreover, the procurement packaging and implementation timeframes were reviewed from a technical perspective and it was confirmed that the approach incorporates lessons learned though the experience of RWSSP-2 and is considered achievable within the project duration. A summary of the Phase 1 sub-projects with cost estimates is presented in Table A2.2. The remaining funds under this component will be allocated towards other related activities, including engineering design, construction supervision and contract management.

Table A2.2 Priority Sub-Projects – Phase 1 (Osh and Chui Oblasts) – with Planning Estimates

No.	Oblast	Name of a Sub-Project	Number of Villages	Population	Cost Estimate (US$)
1	Osh	Otuzadyr	10	20,512	4,410,080
2	Osh	Kyrgyz-Ata^	3	16,202	3,483,430
3	Osh	Togotoi^	1	2,267	487,405
4	Osh	Gulbaar	1	8,025	1,725,375
5	Osh	Sary-Tash	1	2,158	463,970
6	Osh	Achyk-Suu	1	2,412	518,580

7	Chui	Sultan^	9	8,479	1,822,985
8	Chui	Kurama	1	6,904	1,484,360
9	Chui	Kun-Too	2	5,635	1,211,525
10	Chui	Alekseyevka	1	7,037	1,512,955
11	Chui	Kyzyl-Tuu	3	3,287	706,705
12	Chui	Tolok	1	1,275	274,125
13	Issyk-Kul	Chelpek*	3	8,884	700,000
14	Issyk-Kul	Darkhan*	1	7,079	500,000
Sub-total (Villages, Pop. & Civil Works)			**38**	100,156	**$19,301,495**

Notes:
^ Kyrgyz-Ata, Togotoi and Sultan were selected as the first subprojects for technical investigations and engineering designs – financed from ECAPDev TF.

*Includes estimated costs for rectification of technical issues and completion of unfinished works from RWSSP-2.

28. An implementation schedule for the infrastructure works financed under component 1 is presented below.

Component 1 - Implementation Plan

No.	Contract Description	Cost Estimate (US$, Millions)	Year 1				Year 2				Year 3				Year 4				Year 5				Construction Period (Months)
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	Rehabilitation of water supply system in Kyrgyz-Ata	**3.48**																					**18.00**
2	Rehabilitation of water supply system in Togotoi	**0.49**																					**12.00**
3	Rehabilitation of water supply system in Sultan	**1.83**																					**18.00**
4	Rehabilitation of water supply system in Otuz Adyr	**4.41**																					**18.00**
5	Rehabilitation of water supply system in Gulbaar	**1.73**																					**18.00**
6	Rehabilitation of water supply system in Sary-Tash	**0.46**																					**12.00**
7	Rehabilitation of water supply system in Achyk-Suu	**0.52**																					**12.00**
8	Rehabilitation of water supply system in Kurama-Panfiovka	**1.48**																					**18.00**
9	Rehabilitation of water supply system in Kun-Tuu	**1.21**																					**18.00**
10	Rehabilitation of water supply system in Alekseyevka	**1.51**																					**18.00**
11	Rehabilitation of water supply system in Kyzyl-Tuu	**0.71**																					**12.00**
12	Rehabilitation of water supply system in Tolok	**0.27**																					**12.00**
13	Rectification works of water supply system in Chelpek	**0.70**																					**12.00**
14	Rectification works of water supply system in Darkhan	**0.50**																					**12.00**
	Total	**19.30**																					

Pre-contract Award (Design, Tender Documents and Procurement)
Construction Period
Defects Liability Period; Techncial Assistance for Operations

Figure A2.3: Component 1 – Water Supply Investments – Implementation Plan

Component 2 Sanitation Development (US$3.0 million)

29. The sanitation development component will build upon and scale up the successful implementation experience of RWSSP-2. It will finance physical investments for improving sanitation facilities in schools (and other social facilities), which will be complemented by hygiene education programs. In addition, SRWSSDP will extend beyond the targeted sanitation interventions at schools - by providing focused technical assistance to support improved sanitation at the household level. This component seeks to enhance the Government's strategy and to further promote the rural sanitation agenda. The overall approach will be guided by the experience of the Water and Sanitation Program's 'Scaling-up Rural Sanitation' (SURS). An initiative which generated a wealth of guidance material, documented successful experiences in some 13 countries, and provides recommendations for the implementation of rural sanitation programs. The programmatic framework will be designed to focus on the following areas: (a) strengthening the enabling environment; (b) changing and sustaining improved sanitation behaviors; (c) building markets and industry for improved sanitation; and (d) accelerating access for women, girls, the poor and vulnerable groups.

30. Specific activities to be financed under this component are presented in further details below. They are designed within the framework discussed above, focusing on behavior change and demand creation – as a first step in the process. In addition, through this component technical assistance will be provided to support the Government to address other strategic issues associated with the enabling environment, markets and industry, to accelerate access and sustainability. This will include the preparation of a comprehensive rural sanitation strategy – which will guide future institutional and infrastructure support activities and priorities.

31. This component will finance goods, works and services to support sanitation development in target rural communities. It will include, retrofitting of existing sanitary facilities in all schools and kindergartens (and if funds remain other eligible public buildings) within the project areas (for example health clinics). The retrofitting works for sanitation facilities will build upon the successful implementation models and experience developed through the RWSSP-2. Standard designs will be prepared in consultation with the Ministry of Education and applied (and adapted as required) where possible to public schools and kindergartens within project areas. The planning costs allocated for this activity is around US$30,000 per school or US$1,380,000 in total for Phase I project areas. This will cover more around 46 schools, servicing around 16,000 students. These works will complement the water supply investments and together will contribute to improved development outcomes (including public health).

32. Project activities will also include capacity building and institutional strengthening, especially for the Department on Proliferation of Diseases and State Sanitary Epidemiology Surveillance (SES Department) at the rayon level. A needs assessment will be carried out to identify requirements for this Department to fulfill their mandate with regard to drinking water quality testing and certification. Thereafter the project will provide support through supply of equipment (for example, sampling and laboratory testing equipment, computers, software, etc.) and through training to develop and enhance skills/human capacity according to the needs assessment. The CDWUUs and Ayil Okmotus will also be trained on sampling techniques and

water-quality issues more broadly, such that monitoring systems are put in place as part of their Standard Operating Procedures.

33. The component will also support the development and implementation of a communication strategy and Water Sanitation and Hygiene (WASH) educational campaigns to promote improved health and hygiene practices, including specific materials related to water quality/disinfection safety and menstrual hygiene. The sanitation and hygiene education programs will be introduced through the school system and through public campaigns to support improved knowledge, attitudes, and practices within the project areas. As women carry the primary responsibility in securing water for household's needs, as well as advancing hygiene practices at home, the communication strategy will specifically target women and women's groups to convey the messages.

34. The WASH educational campaigns include a number of interactive exercises designed specifically to enhance participation of school children. This includes for example activities like "Glow Germ" to show hand contamination, the formation of student "WASH committees", and using older students ("youth leaders") to train younger ones. Schools also compete with each other for "stars" in the "Three Stars" approach – better sanitation means more stars. Parents will also be involved in improving hygiene and sanitation in the schools; for example, they provide additional resources for handwashing and for cleaning sanitation facilities. WASH committees are formed at the village level to assess WASH conditions and to plan improvements, including in schools.

35. A modified Participatory Hygiene and Sanitation Transformation (PHAST) method adapted to suit the Kyrgyz context, was used during implementation of sanitation and hygiene promotion activities under RWSSP-2. The end of project evaluations concluded that such activities were successful but could be further enhanced to expand and deepen impacts at the household level. As such, during initial phases of the project, the existing methodologies and materials will be reviewed and compared with other approaches and lessons drawn from case studies of international best practice for rural sanitation. This will include a review of "sanitation marketing" and community lead total sanitation (CLTS) (or "total sanitation", which combines CLTS and sanitation marketing) concepts. Technical support will be provided by the Bank in the process, in order to optimize the methods used for this third phase of the program. After the methodology and materials are refined, the project will carry out sanitation and hygiene promotion activities within the target rural communities to support behavioral change and demand generation.

36. Sustainability of proposed interventions will be supported through the institutionalization of the programs both within the relevant departs of Ministry of Health and Ministry of Education. The training of Village Health Committees is already institutionalized, and depends to a large extent on the Republican Center for Health Promotion. The Center has provided resource materials for sanitation and hygiene education to RWSSP-2 and will be involved in the method / materials updating process, along with the process of training teachers as trainers. SRWSSDP will train two teachers per school as trainers, and they in turn will train other teachers, who train students, who form WASH clubs etc. Staff from Center and from the SES at the rayon level will be involved in training. Furthermore, education topics will be introduced into each school's

teaching materials, along with technical support to ensure consumables (soap etc) are included in the school's operating budgets.

37. A summary of key activities identified for the implementation of WASH promotion in target areas is provided below.

Activity 1: Analysis of Methodologies, Approaches and Designs

- Review and revise current sanitation and hygiene methodologies and training materials / guidelines, including WASH in schools, PHAST[18] or other participatory approaches for communities, including menstrual hygiene topics.
- Review and revise communications strategies, methods and key messages.
- Develop standard designs for on-site sanitation facilities at the household level.
- Review fecal sludge management practices and facilities for selected villages and recommend improvements.

Activity 2: Sanitation and Hygiene Promotion in Target Communities

- Select and hire social mobilization specialists/consultants for training of trainers (ToT) of village health committees (VHC), Ayil Okmotus and community representatives, using updated Community Handbooks;
  - Water quality (including transport and storage where appropriate)
  - Handwashing and hygiene including use of toilets and disposal of children's and infants' feces
  - How to improve sanitation facilities
  - Food hygiene.
- Pilot and refine revised methodologies and materials.
- Train VHC and Ayl Okmoto members as trainers, using updated methodologies;
- Support and monitor community mobilization and WASH knowledge and practices (including toilet facilities improvement and fecal sludge management) in villages.

Activity 3: Sanitation and Hygiene Promotion in Schools/Pre-schools in Target Villages

- Select schools, pre-schools, health care facilities or other institutions for sanitation facilities upgrades (a demand driven process guided by ARIS and Ayil Okmotus);
- Select and hire consultant for training (Training of Trainers) of school/kindergarten educational staff in WASH In Schools and/or health care staff in sanitation and hygiene promotion;
- Pilot and refine revised methodologies and training and promotional materials;
- Train all teachers (schools, kindergartens and preschools) and health care staff in sanitation and hygiene promotion (WASH, WASH in schools, including menstrual hygiene management where appropriate);
- Monitor, support and evaluate delivery of hygiene modules by teachers or staff of WASH in schools and health care facilities;

[18] Participatory Hygiene and Sanitation Transformation, a method used by Center of Health and Promotion

- Support to SES and/or local authorities for water quality testing and monitoring.

Activity 4: Communication Campaign

- Prepare Terms of Reference (for media / communications consultant);
- Select and hire media / communications consultant to develop materials for social media, television, radio, newspapers and other relevant channels;
- Develop communication plan (ARIS with media consultant):
- Identify and establish target audience, key messages and communication channels;
- Implement campaign, broadcast programs over TV/radio and social media;
- Monitor implementation and revise strategy and messages as necessary.

Activity 5: Monitoring & Evaluation and Reporting

- Establish project baseline (baseline survey, includes WASH Knowledge, Attitude and Practices) (prior to project implementation);
    - Review knowledge, attitudes, skills and behaviors in target schools, kindergartens, health care facilities and communities:
    - Establish state of sanitation facilities at kindergartens, schools, preschools, health care facilities and other relevant institutions
- Monitor implementation progress for all components against the schedule (on a regular basis over the year);
    - Compare to progress to project schedule
    - Identify needed corrective actions and implement them to correct problems;
    - Revise activities as needed
- Identify achievements and outcomes of the components, including communications campaign (at project completion);
- Impact Assessment (after project completion);
    - Review knowledge, attitudes, skills and behaviors in target schools, kindergartens, health care facilities and communities:
    - Establish state of sanitation facilities at kindergartens, schools, preschools, health care facilities and other relevant institutions
    - Other impacts
- Lessons learned, practices and innovations.

38. Component 2 will finance strategic activities at the national and local levels which aim to enhance the Government's strategy for sanitation development in rural areas. This will include the development of standard designs, including guidelines for construction and operations, for household latrines and septic systems for rural areas and technical assistance (TA) to support Ayil Okmotus in target areas - to put in place systems for safe septic sludge removal and treatment / disposal. The TA will include support for planning processes, considering environmental, economic and social criteria along with supply chain considerations, pricing / payment modalities, and a review of regulatory constraints and enabling conditions at the local and central levels.

39. This component will be implemented directly by ARIS, who will contract individuals (or NGO's as appropriate) for design and supervision of works, conduct social assessments, carry out the specialized technical assistance and to implement education and communications

programs. Small works contracts will be used for implementation of the facility upgrades / retrofitting.

Component 3: Institutional Strengthening (US$2.5 million)

40. Component 3 will finance goods and services to strengthen sector institutional capacity at the national and local levels. This component has been designed to build upon substantial outputs prepared under RWSSP-2, and to complement on-going technical assistance financed by the Asian Development Bank, which includes the design of institutional structures and mechanism to support sustainable service delivery in rural areas. As such, activities under component 3, specifically at the national level will remain flexible in order to support the Government to address emerging needs, fill analytical and knowledge gaps and provide technical assistance to support the implementation of the reforms.

41. Activities under this component are further organized under two separate sub-components as follows:

- **Sub-component 3.1: National Level (US$0.7 million)** activities will include technical assistance for drafting legal/normative acts to clarify roles and responsibilities (including asset transfer and ownership issues) under a delegated management framework, improved financial and service regulation, and technical support for the establishment of new institutional models for water service delivery (for example piloting of an aggregated approach). This sub-component may also finance focused studies on identified areas of need (for example, the sustainability of disinfection systems), sector financing and investment plans, augmentation and institutionalization of the management information system/data base, and an institutional support plan for DDWSWD, including assessment of existing capacity, preparation of an implementation plan (road map), and capacity building/training activities.
- **Sub-component 3.2: Local Level (US$1.8 million)** activities will include capacity building for local authorities (Ayil Okmotus) and CDWUUs responsible for water service delivery in the project areas. This will include topics and support for tariff setting, billing and collection systems, operations and maintenance training (for example, disinfection), water quality testing, customer relations, complaints mechanisms, human resources, and commercial management. Adapting and building upon the experience of RWSSP-2, the project will also support the preparation of service contract agreements, to clarify and formalize respective responsibilities of the operator (CDWUUs) and asset owner (Ayil Okmotus) and to support governance of service performance, tariffs and financing mechanisms. This sub-component will also finance beneficiary satisfaction surveys and the impact evaluations and support mechanisms to improve citizen engagement, feedback, and consumer recourse. It will include training and knowledge exchange visits with RWSSP-2 participants, and will finance start-up support packages for the operator (for example, spare connection materials, meters, testing equipment, and tools) to assist with the transition to operations (post construction). Local level institutional support will also seek to strengthen DDWSWD capacity at the rayon level, focusing sector monitoring and technical support for complex operational and maintenance issues.

42. Institutional strengthening activities at both the national and local level, will also consider the potential role of private sector, and where appropriate seek to promote and enhance private sector participation for efficient and sustainable service delivery.

43. A number of important factors for sustainability of service delivery, considered through this component, include:

- **Start-up Support for Operator**. During preparation, it was agreed that the project will finance start-up support activities for the operators. This will include provision of basic operation and maintenance equipment (computers, spare parts and materials, tools etc), as a startup support package financed under component 3. Furthermore, the works contractors may have a 2-3 month operational support BoQ line item within their contract, to allow for a smooth operational transition of the new infrastructure. The project (under component 3) will also support the installation of new procedures for meter reading, billing and collection – along with mechanisms to receive and respond to complaints. Water meters for household connections will also be provided by the project. Providing upfront support during the early phases of operations will help to improve service delivery, willingness to pay and long term sustainability.
- **Tariffs.** Modern practices of applying consumption based, cost reflective tariffs will be introduced through the project. The tariffs should be calculated considering full operating and maintenance costs, and include a reserve for asset replacement over time. The project will also carefully consider the communities "ability to pay" and requirements for lifeline tariffs for low income / very low consuming customers and will support the preparation of a connection subsidy strategy targeted the poorest and most vulnerable residents in the project areas. The project will support the development of the tariff setting procedure, and in addition to the CDWUU's will involve the Local Council members (the approval authority) and the Anti-monopoly committee (who ultimately review and provide their no-objection).
- **Roles and Responsibilities of Asset Holder and Operators**. As noted in the Governments Water Supply Strategy, there is a need to ensure clarity of roles and responsibilities between the asset holder (Ayil Okmotus) and the operator. In particular, this concerns the costs for asset maintenance, replacement and possible future expansion. The project will support this definition of functions and associated budgeting implications through component 3 activities.
- **Education and Consultation Programs.** Community was closely consulted during project preparation, and will further participate during implementation. For sustainability of the system in particular, the project will provide an education topic which includes knowledge attitudes and practices for drinking water. In particular, the community members should be aware that the drinking water system is not be used for irrigation purposes and likewise there are health issues associated with using water from the irrigation canals for drinking. The range of education and consultation topics will be prepared and included in the Project Operating Manual.

44. Component 3 will be implemented directly by ARIS, who will contract specialized consultants (individuals or firms as appropriate) for a number of activities. The social mobilization and education and communications programs will be carried out by ARIS directly. Activities to be financed under sub-component 3.1 will be demand driven and remain flexible in order to adapt to emerging needs of the DDWSWD. Specifically, they will be refined after

completion of the ADB sector reform technical services contract. At this time TA outputs will be released with recommendations related to sector reforms and institutional strengthening requirements to support sustainable service delivery in the rural water supply in sanitation sector. The Bank will closely coordinate with ADB and other donors to ensure complementary and efficient support is provided. Further details about the ADB TA and the aggregated approach to water service delivery are provided in Appendix B.

45. **Component 4 Project Management (US$1.4 million):** This component will support implementation of (i) contracting of local experts to assist the implementation unit and participating Ayil Okmotus in the implementation of the project's activities; (ii) the maintenance of the Monitoring and Evaluation System (M&E), to continuously monitor and evaluate the performance and results of the project; (iii) the project-related operating costs of the implementing unit including consulting fees and in-country travel expenditures; (iv) project operating costs including contributions towards the cost of backstopping assistance by ARIS staff (the so-called administrative pool of ARIS); and (v) an annual audit of project accounts.

Appendix A: Description of Project Areas

Sub-project 1: Kyrgyz-Ata Aiyl Okmotu, Osh Oblast

1. Area description: Kyrgyz-Ata Aiyl Okmotu is located in Nookat rayon of Osh Oblast and consists of 3 villages plus 3 residential areas (zhilmassiv). Zhilmassivs are not large with first two having 5-6 households and the third one having 500 people residing in it. Total population of Kyrgyz-Ata Ayil Okmotu is estimated at 16,202 people. The villages in the sub-project area are: Kotormo, Borko, Kyrgyz-Ata, Ak-Bulak. The sub-project area is located close to Nookat rayon center and have 1 hospital, 1 maternity house, 7 schools, 5 kindergartens, 3 polyclinics and 3 FAPs. It was reported that 3 polyclinics have no access to water supply.

2. Main sources of income are from agriculture, livestock and retail trade. Due to location of the sub-project to Osh city the area has potential for private entrepreneurships development, particularly in terms of agricultural processing. There is one juice extraction plant, mineral water enterprise operating. Management of Kyrgyz-Ata sub-project area is very pro-active, initiating construction of various recreational facilities and 2 new schools, as well as new borehole that supplies water for two villages. As of today, the management of Ayil Okmotu has developed several plans on development of the area, including construction of mini hydro power station, and alternative sources for water supply from ground water and surface water.

3. There are cases of water-borne diseases, such as typhoid and hepatitis. Based on assessment carried out by the Department of Water Supply and Sanitation and ARIS, Kyrgyz-Ata is considered ready in terms of ownership and accountability for the project interventions.

4. Water supply system description: The system once built in soviet times has deteriorated significantly. The existing distribution networks is about 12 km and water mains are laid along 1-2 central streets in 3 villages. About 20 percent of population access the water supply system through individual connections. Most of pipes are asbestos, ceramics or steel and the network has a lot of leakages that the village administration tries to repair on ad hoc basis.

5. The current source of water supply is Kyrgyz-Ata river with 2 km of water main (supplied 24 hours a day) and piped water from newly drilled borehole, funded by private sponsorship during pre-election campaign. Both sources do not have any disinfection arrangements nor particularly in line with the standards, and are more of an urgent measure to access water. Technical person de-facto in charge of maintaining the sources and network is a licensed specialist and is ready to lead CDWUU when the project starts.

Sub-project 2: Togotoi (Kashka-Jol) Aiyl Okmotu, Osh Oblast

6. Area description: Located on the eastern part of Osh Oblast in Kara-Kulja rayon, Togotoi includes 1 village with population of 2,267. This is one of most remote sub-projects in Phase I. Nearly all of the inhabitants are involved in cattle-breeding and farming. Residents complain of poor water infrastructure, bad roads, and high unemployment. There are 1 FAP, 1 school, 1 kindergarten and 1 hospital for 10 beds in Togotoi.

7. Water supply system description: Only 10 households have household connections, others get water from 22 standpipes along the streets. In 2008-2013 the whole village had to rely on trucked water or water from irrigation canal due to breakage of formerly existed borehole. In 2014 the village managed to attract sponsorship to develop a borehole, which is sufficient for 5 hours of supply per day. However, as the network system is old and deteriorated, leakages are very common. Irrigation canals within the village are available, which puts less risks of drinking water supply to be used for irrigation purposes after the project completion. Current collection rate is around 80 percent and existing tariff is a flat rate of 100 KGS/household.

Sub-project 3: Otuz-Adyr Aiyl Okmotu, Osh Oblast

8. Area description: Otuz-Adyr aiyl okmotu is located in Kara-Suu rayon of Osh Oblast, one of the highest density rate area in the country. It has 10 villages spread at some distance from each other. Populated by some 20,512 residents, Otuz-Adyr is located approximately 10 kilometers to the east of the Osh city. There are 10 villages under this sub-project, and 3 additional residential areas (Osmon, Zhivprom, Osh) that will be dependent on the future water supply system. Ethnic composition of Otyz-Adyr is as follows: ethnic Kyrgyz, Uzbeks; other ethnic minority groups - Russians, Tartars, Tajiks, Kazakhs. According to Ayil Okmotu officials, main problems of the residents are: a) lack of drinkable water; b) poor quality infrastructure (roads and pavements, street lights); c) high unemployment.

9. Water supply system description: Water supply system was constructed in 1957 in only 3 (Otuz Adyr, Karadobo, and Kozhon Bak) out of 13 villages. After the water intake structure stopped operating few years ago, the water-borne diseases rate had increased. In 2015 the village administration managed to mobilize KGS 2 million from private sponsorships to implement drainage cleaning / rehabilitation at intake structure, but unfortunately these works have not improved situation significantly. The population is served by untreated water in the system.

10. The three villages have 34 km of the internal network, (only 2 main streets in each of the village, covering about 10 percent of the subproject population, mainly through the individual yard connections) and water is available for about 4 h/day in each village. In the center of Otuz-Adyr there are a number of household yard connection, the rest of population have to buy trucked water at 20-40 KGS per 40L container. Some of the villages, like Chook, are located at 3 km away from the nearest standpipe. Tariffs are low – KGS 40 per household per month.

Sub-project 4: Gulbaar village, Keremet Aiyl Okmotu, Aravan Rayon, Osh Oblast

11. Area description: Keremet Ayil Okmotu is located 25 km away from Osh city in Aravan rayon of Osh Oblast. It has 6 villages with the population of 9,170 people. Gulbar is the largest village with population around 8,025. There are 4 schools, 1 kindergarten, 1 FAP, 1 kindergarten for disabled children.

12. Water supply system description: Even though the village is in the vicinity of Osh city, the situation with water situation is dire. The existing source for drinking water is the irrigation canal Ak-Buura that passes through Osh city. When the irrigation water supply is stopped for maintenance and during winter season, the population has to collect water another canal and/or

buy trucked water at the cost of KGS 20 per 40 liters container. In winter, the remaining water in the canal is often frozen and population uses snow melt water. No standpipes exist as there is no water supply system operating. The water-borne diseases rate is one of the highest in the country with outbreak of typhoid epidemic in 1997 with 270 infected. Gulbaar village is located downstream of other villages (for example Toloikon) with their pit latrines and other polluting sources that may be discharged into Ak-Buura canal. The Ayil Okmotu brings $3m^3$ of water once in two days to social facilities, like schools and kindergarten – sourced from a borehole drilled for cement factory some 3 km away from the village.

Sub-project 5: Achyk-Suu village, Kashka-Suu Ayil Okmotu, Chon-Alai Rayon, Osh Oblast

13. Area description: Achyk-Suu village is the remotest village in the project and one of the remotest and poorest in the country, located near the border with Tajikistan close to Pamir Mountains. It is located about 400 km from Osh city at the altitude of 3,146 m above sea level. The area has harsh continental climate, with average summer temperature of +12C and the absolute minimum in winter as low as minus 45C. The frost line (or freezing depth), in this areas is around 220 cm – which has implications for the trench designs for the water pipelines and construction / maintenance costs. There are 6 villages in this Ayil Okmotu with total population of about 9,030 people. Achyk-Suu village has population around 2,412 people, 509 households and is located at highest altitude among other 5 villages. The village has such social infrastructure assets including a school, kindergarten and rural health post. Because of harsh climate, the population depends on livestock production, however the access to markets is a challenge.

14. Water supply system description: Achyk-Suu has an extremely poor situation in water supply. In Soviet times a borehole and a number of public standpipes in the village were placed to serve the population. As reported by the villagers, however, the water quality tests at that time found high concentration of salt, and the water supply pipes deteriorated and are no longer functional. Since then, villagers were using water from the open stream coming from the mountains and had to travel 5-10 km to collect water. At present, there are no formal services for trucked water, or water storage facilities. In 2012, Aga Khan Foundation supported the village by installing spring catchment collector and transmission pipe with diameter of 63 mm, located at the distance of about 3 km upstream of the village. Later, in 2014, Arab charity foundation "Assalam" financed 1.5 km of distribution pipe of 63 mm diameter and 4 public standpipes (distance between the standpipes is 150-500 m – there are no household connections). The standpipes supply water to upper part of the village, but due to air in the system do not operate reliably. Furthermore, the source freezes during the long winter period and thus the system does not operate for around 5 months of the year. There is no water disinfection, and no reservoirs for storage.

Sub-project 6: Sary-Tash village, Sary-Tash Ayil Okmotu, Alai Rayon, Osh Oblast

15. Area description: Sary-Tash village is located about 320 km south-east from Osh, at the altitude of 3,250 meters above sea level. Population is 2,158 people, and 563 households in the village. The remoteness, socio-economic conditions, harsh climate and poor soil are very similar

to Achyk-Suu village. Social facilities include: school, kindergarten, hospital and rural health post.

16. Water supply system description: There is no water supply system servicing this area. In Soviet times the settlement was formed, not as a residential area, but as a temporary base for road maintenance department with a few houses and a few families living there to support construction of roads in Gorno-Badahshan area (Pamir) in Tajikistan. For this reason, there were no investments in water supply infrastructure. At present, the local population has to travel 4 km to get water from a water source (open stream). People spend on average 2 hours per day collecting water. The local kindergarten management, with their own resources, attempted to drill a borehole to supply water to the kindergarten, but the exercise failed.

Sub-project 7: Sultan Ibraimov Aiyl Okmotu, Chui Oblast

17. Area description: The Ibraimov sub-project is located in the Chui rayon of Chui Obast approximately 12 kilometers to the south of Tokmok city, and includes 9 villages from 3 aiyl okmotus (Ibraimov, Burin, Ak-Beshim). Total number of population is about 8,469 inhabitants. Main sources of income are farming and cattle-breeding. Some villagers are employed in various factories in Tokmok area. Shortage of water and management of scare resources (arable land, pastures) is a main problem of residents as reported during the field visit.

18. Water supply system description: Existing water supply system is fed from the river infiltration gallery and spring catchment 2.5 km up stream. Existing network covers 70 percent of the villages, the remaining (including new settlement areas) do not have any network access. The proportion of household connections is about 60 percent within the areas of network coverage. Fee collection rate is 60-70 percent at a tariff of 100 KGS/household. Despite of existing network, water supply is irregular and does not supply water to the whole network. The original design capacity of the system was 60 l/sec, but actual capacity is estimated to be around 20 l/sec.

19. Ibraimov a/o has 6 villages within its boundary (Koshoi, Kara-Oi, Kyzyl-Asker, Lenin, Taldy-Bulak, Kalinovka). As of today, 5 first villages are included into the sub-project, as the 6th village Kalinovka has independent water source. However, the quality and regularity of water supplied are questionable and this village may wish to get connected to the sub-project in future. Transmission main is about 7 km and mainly goes through private agricultural lands. Alternative alignment can be considered to minimize impact on land acquisition.

20. There are several social facilities in the three Ayil Okmotus (i) Ibraimov – 4 schools, 5 FAPs (if Kalinovka village is considered, then there is additional 1 kindergarten and 1 school) ; (ii) Burana – 1 school, 1 FAP; Ak-beshim – 1 school, 1 FAP. Based on preliminary assessment the proposed project should include the recovery of the water sources; spring catchment and river infiltration gallery, replacement of transmission main with pressure breakers, construction of new reservoirs 2x200 m^3 and rehabilitation of the existing reservoir for 500 m^3. The works should also include rehabilitation of the existing distribution network in all the villages and about 30 km of new water supply network to cover new housing areas.

Sub-project 8: Kurama Aiyl Okmotu, Chui Oblast

21. Area description: It is located on the western edge of Chui Oblast near Kyrgyz-Kazakh border, with a population of around 8,479 and consists of 1 village Panfilovka. Main ethnic groups are: Kyrgyz; Russians, and some Ukrainian, Kazakh, and others minority groups. There four villages (Panfilov, Orto-Aryk, Jayilma, Efironos). Majority of residents live off cattle-breeding and farming. A limited number of villagers are employed by a Chinese factory. Main problems of residents are: high unemployment, poor municipal services (shortage of drinkable water, heating, poor quality roads).

22. Water supply system description: Subproject consists of 1 village served by 4 individual boreholes, located in 4 different locations within the village. There is no reservoir; the supply is directly pumped from the borehole into the network. The length of the water supply network is about 50 km, and it covers about 75 percent of the housing area. The covered households predominantly have individual yard or house connections. Due to the deteriorated state of the network, only 1-2 boreholes are in use due to frequent burst cases. In reality, water is available for about 3 hours for about 50 percent of the network. No any formal measurement of the individual consumption or supply in the system is available due to lack of metering. The tariff is 100 KGS/hh/month and fee collection rate is not very high due to poor services.

Sub-project 9: Kun-Tuu village, Sokuluk Rayon, Chui Oblast

23. Area and water supply description: The social facilities in the villages include: schools (with indoor flush toilets), kindergartens and a rural hospital. The water supply system covers villages of Kun Tuu and Shalta. There are 2 old wells serving the villages, with capacity of pumps of 110 m^3/h and 65m^3/h. There are two reservoirs of 500 m^3 capacity. Part of the Shalta village is also fed by the spring catchment. The existing network covers about 50-60% of the residential area of villages. The transmission main was partly replaced 2 years ago (grant from Arab charity foundation) and is made of PVC, diameter 140 mm (length of the replaced part is about 2 km). The diameters in the network varies between 200 and 100 mm. Length of the transmission pipe in Kun-Tuu is 4 km, in Shalta - 3km. Length of the distribution network in Kun Tuu is 48 km, in Shalta - 28 km. The distribution system is aging and deteriorated, with significant water losses. As such the quality of services is low, with water supplied at intermittent intervals (<12 hours/day).

Sub-project 10: Alekseevka village, Jayil Rayon, Chui Oblast

Water supply description: 6 streets of the village are served by Kara Balta urban water supply utility, the rest and main part of the village is supplied by 3 boreholes owned by the Ayil Okmotu (depth is 120-150 m; pumps capacity is 120-140 m^3/h). The length of the network is 37 km, with diameter of pipes 100-150 mm. Almost 20% of the village water supply network is not operational. During winter period, pumps operate 24 h/day, during summer, they operate only in the morning and in the evening. There is no reservoir in the system. The social facilitates include: school, kindergarten and a rural hospital, water supply expenses for these facilities are covered by Ayil Okmotu. Simialr to the above, the existing network pipes are aging and deteriorated, and there are significant water losses. As such the quality of services is low.

Sub-project 11: Kyzyl-Tuu village, Sokuluk Rayon, Chui Oblast

24. Water supply description: The villages under the Aiyl Okmotu include: Kyzyl-Tuu, Kara-Sakal, Novoe and Malovodnoe. Kyzyl-Tuu, Novoe and Kara-Sakal villages are fed from the same water supply system. The main water source is spring catchment in Kyzyl-Tuu village. The length of the transmission line for Kyzyl-Tuu spring catchment is 11 km (including 3.6 km to the reservoir/ sedimentation tank), of 150mm diameter. The length of the distribution network in the village is about 25 km, of 100mm diameter. The operating borehole in the village supplies water from 8.00 hrs to 20.00 hrs every day. There are three reservoirs of 500 m^3 capacity each. There are also another 2 boreholes, with the pumps of 65 m^3/h located in Kuyzyl-Tuu. One more spring catchment for Kara-Sakal with capacity of 10 l/sec supplying water through only 1 km of distribution network in the village. Novoe village is fed from the spring catchment in Shalta village, leading to some disputes over the water supply between these villages. Malovodnoe village has its own water supply system with wells, pumps and reservoir that is not operating. The transmission main form the source is 12.3 km of diameters 100-150 mm, and 15 km of distribution network. The pumps operate 24 h/day, but there are still water shortages faced by consumers.

Sub-project 12: Tolok village, Moskva Rayon, Chui Oblast

25. Water supply description: The village has well with the depth of 310 m, with the pump of 65 m^3/h at the depth of 70 m, and elevated water tower of 25 m^3. The length of the water supply network is 15 km, with pipes varying between 100 and 150 mm diameter. About 30% of households live in newly settled area, with no access to the water supply network. The pump operates 20 h/day and supplies water directly to the village with no reservoir. There are no public standpipes in the village, and due to low pressures in the system, only 50% of the households connected to the network are supplied with water. People in this area rely on collecting water from other parts of the system and storing water at home.

Sub-project 13: Darkhan village Jeti-Oguz Rayon, Issyk-Kul Oblast

26. Water supply description: This village was one of the RWSSP-1 projects. The water supply system is fed from the river drain site. Out of 5 collection manholes only 3 operate, as reported. 1.5 km of the transmission line feeds reservoir. There are eight 63 mm diameter pipes supplying directly 8 main streets and 22 km of distribution network. Only 350 households (about 30%) have individual connections and 70% of people in this village access water through public standpipes – many of which are now not operational. In addition, there are new residential areas, developed after the completion of the RWSP-1. The water supply system in this village requires investments to rehabilitate the collection / production system, rectify design issues in the distribution network (i.e installation of primary and secondary distribution pipes), and network expansion to cover unserved areas.

Sub-project 14: Chelpek village, Ak-Suu Rayon, Issyk-Kul Oblast

27. Water supply description: Chelpek village was rehabilitated under the RWSP-1, and due to certain shortages in water supply services was accepted for rectification in RWSP-2. Under RWSP-2 the detailed design was prepared in 2 stages: first, production, transmission and storage and rehabilitation/reconstruction of distribution network, including the network extension. At the time, the project did not have sufficient funds to cover implementation of both phases and tried to find joint solutions with the Chelpek village to provide essential works for the system to operate. By the end of RWSP-2 the village had new source, transmission main of 225 mm diameter, with online booster pump at 90 m^3/h, and steel reservoirs (700 m^3 x 2). However, the CDWUU and Ayil Okmotu did not manage to complete implementation of the second phase – which is focused on improving the distribution system. To ensure sustainability of the investments and improved quality of services, an allocation has been included for this village towards improving the network distributions and household connections.

Appendix B: Aggregation Approach for Water Service Delivery

1. The ADB financed Technical Assistance program (ADB Regional TA 8375) amongst other tasks, seeks to understand achievable economies of scale that might result from different forms of aggregation[19.] The aggregation process may in some cases involve changes to legislation (whilst other forms of aggregation may not) and the introduction of new regulations and processes.

2. The delivery of water services requires a mix of routine and specialist skills. While routine skills might be available even in highly decentralized service provision, the more specialist skills are less likely to be locally available. This is because highly decentralized systems as in the Kyrgyz Republic, will not have an ongoing demand for such skills, nor will they have financial resources to support the costs of such specialists. In general larger, aggregated, service providers have the need for, and financial resources to support specialist skills and thus can benefit from overall improvements in professional capacity.

3. Aggregation of service provision often creates the requirement to reform mechanisms for oversight of the service provider. When services are provided at the local level, they are often overseen at the local level and local politicians often have a role in tariff approvals. The aggregation of service provision inevitably raises the question of whether such oversight functions (for example monitoring/tariff setting) should still be carried out at the local level, or whether they should be carried out at the same level as the aggregated service provision. Whichever approach is selected it is important to note that an aggregated entity can harmonize tariff and service levels, but it can also maintain differentiated tariffs and service levels at the different villages and towns.

4. The local Government authorities should be ready to accept (and understand) the changes that will result from any proposal on aggregation and as such it is good practice for a pre-aggregation study to be carried out to decide the optimum process, and form of ownership and governance of the resulting body, including operational and management assumptions. The

[19] Aggregation" is defined as the grouping of several municipalities into a single administrative structure for the provision of a particular service. Such aggregated structures can vary widely, generally along three dimensions:

- **Scale:** aggregated structures can group two neighboring municipalities, or several ones in a single region or across a broader territory;
- **Scope:** aggregated structures can provide a single service (for example, bulk water supply) or all services, from raw water abstraction to sewerage treatment. For each of these services, they may carry out certain functions only (such as procurement or maintenance) or be responsible for all functions, from operations and maintenance to investment and financing;
- **Process:** municipalities may form aggregated structures voluntarily based on mutual interests or alternatively, a higher level of government, driven by the overall public interest, may impose or incentivize the aggregation process. The aggregation may be temporary (for a short term specific purpose) or permanent.

The main driver for aggregation is usually the potential to realize economies of scale by providing services to a larger customer base, and therefore, to render services more efficiently and at a lower cost. Despite the case for aggregation being relatively easy to construct, aggregation does not take place as often as one may think and it has a relatively high risk of failure because political will is lacking, or the potential benefits are not clearly understood, or the aggregation process is perceived as too complex.

obligation to aggregate will rest with local government - Ayil Okmotus and town councils, as asset owners and the entities legally responsible for the delivery of water supply and sanitation services. Introducing this new approach would require:

- Consultations with various towns and rural villages to understanding their challenges and constraints; including a comprehensive needs assessment;
- Development and update of the "national" financial model through which different scenarios can be analyzed; and
- Preparation of implementation plans with budget, milestones, allocations of responsibilities and financing.

5. While legal responsibility for service provision rests with the Ayil Okmotu, at present, in most cases, CDWUUs are the actual providers. There are likely to be legal limits to what kind of institutional arrangements (such as aggregation) can be imposed. Given their NGO status, CDWUUs cannot be dissolved by law. Considering this therefore options for incentivizing aggregation need to be developed, coupled with efforts to create an enabling environment which makes aggregation attractive.

6. Potential examples of implementing aggregated or cooperative organizations which have as their objective to increase the sustainability of water supply services may be "piloted" under the project. Pilots present an opportunity to "showcase" best practice, create interest from other Ayil Okmotus, rayons and oblasts, and provide opportunities for improving through practical learning and experience.

Potential Aggregation Model for the Technical Support

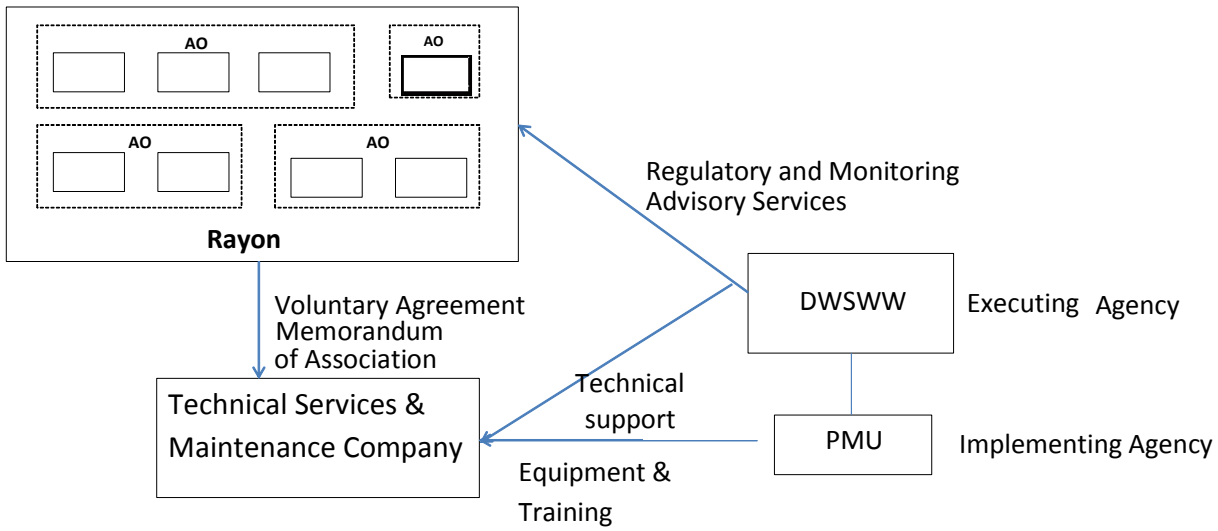


Figure A2.5: Illustration of Potential Aggregation Model for Technical Support for Rural Water Supply Systems

7. Aggregation reforms are likely to become increasingly needed, for factors internal or external to the water sector. Policy guidance will be required to explain the potential benefits of aggregation, warn about the potential constraints, and accompany such processes. Aggregation of water and sanitation services is well in place or on the rise in countries where the concept is well understood, such as in France and The Netherlands, where groupings are created to meet large and rising investment requirements.

8. Within the current legal context of the Kyrgyz Republic, an implementation of such an approach would need to be on a voluntary basis i.e. where the participating Ayil Okmotus fully understand the costs and benefits from aggregation and decide by themselves, that the benefits outweigh the costs. To support and encourage voluntary aggregation, DDWSWD will need to provide guidance about potential forms for aggregated structures, basic rules for internal management, governance structures, tariff-setting arrangements or entry and exit rules. A specific element of such guidance could be the development of model legal frameworks for aggregation, or model Articles of Association for aggregated entities. Another specific element could be the elaboration of a clear framework for evaluating the costs and benefits of a proposed aggregation.

Aggregation can take many forms and is not static over time

Aggregation can take many forms and without a detailed analysis of the options available, this is why pilot projects are preferred in order to gather the evidence and experience required for formal policy implementation. An aggregated structure may incorporate a small number of towns or an entire region. It may be temporary or permanent; involve the aggregation of all WSS services, or only a subset of those; involve all functions or only a subset, such as securing financing for example Every form of aggregation has its own characteristics and it is unlikely that a solution applied in one situation can be applied elsewhere without tailoring it to suit the needs of the specific situation to be addressed.

One form of aggregation can be used to test the cooperation of several municipalities before moving into deeper forms of aggregation, either in the WSS sector or in other areas of public service under municipal responsibilities. Clear entry and exit rules can provide such flexibility, although it is usually preferable to limit exit possibilities in order to not destabilize an existing aggregated structure.

9. The reform and regulation process will require independent studies that will need to ensure that DDWSWD and providers have:

- Understanding of achievable economies of scale due to aggregation
- Understanding of relationship between investment planning and improvements in Levels of Service
- Understanding of utility business planning process
- Understanding tariff setting methodologies (costs and revenues)
- Understanding of achievable quality and customer levels of service, and performance benchmarks
- Understanding of asset renewal/replacement processes and needs
- Understanding of use of consultants for independent auditing

10. The improvement of regulatory processes is likely to be an important feature of the modernization process and will cover some essential objectives of water sector regulation - to

regulate prices, quality and access to services in a way that encourages efficiency and enables the long-term sustainability of the service systems. It is expected that support will be required and will need to cover:

- Review of existing regulatory arrangements
- Recommendations for regulatory approach and strategy
    - Possible alternative arrangements, including examples from other countries
    - Discussions of feasible options with stakeholders
    - Recommendations for change: proposed broad framework and strategy
- Review of legal constraints and opportunities related to the proposed system
- Detailed proposal for new (or modified) regulatory arrangements
    - Outline of the new system in a form that can be used as drafting instructions for preparing new (or amended) primary legislation
    - Seminar for relevant stakeholders and decision makers
    - Timetable for creation of the regulator
- The establishment and update of a national database (building on the work undertaken in RWSSP-2) on rural water supply and sanitation where information on covering: access; infrastructure conditions; level of service; customer satisfaction; and management aspects, amongst others. This data is to be made available for every community in the country to view and will allow for better estimation and prioritization of sector developments.

Annex 3: Implementation Arrangements

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project

Project Institutional and Implementation Arrangements

1. Specific instructions covering all aspects of project implementation management are to be found in the Project Operations Manual (POM), which will be prepared and adopted prior to effectiveness.

2. **Implementation period.** The SRWSSDP will be implemented over a period of five years, commencing 28 January, 2017, the planned date of effectiveness of the IDA Grant and IDA Credit. The Mid-Term Review (MTR) will be conducted no later than December, 2019. The implementation support plan is detailed further in Annex 4.

3. **Institutions involved in project implementation.** The key institutions involved in the implementation of the proposed project are the Department of Drinking Water Supply and Wastewater Disposal (under the State Agency for Architecture, Construction and Communal Services (GOSSTROY)), the Community Development and Investment Agency (ARIS) and Ayil Okmotus in the participating areas of Osh, Chui and Issyk-Kul Oblasts; and the Community Drinking Water User Unions (CDWUUs) at the community level. The Ministry of Health and Ministry of Education will also be involved as key stakeholders during the implementation of component 2 activities.

4. ARIS will be responsible for the overall implementation, including fiduciary and safeguards compliance, of the proposed project. Institutional arrangements and responsibilities of the different institutions are outlined below.

5. ARIS was created by Decree of the President of the Kyrgyz Republic in October 2003 as a legally and operationally autonomous institution for the purpose of managing the implementation of the IDA-supported First Village Investment Project (VIP I). It operates under the oversight of a Supervisory Board comprised of twenty-one representatives of the State administration, the local government sector, and the civil society,[20] and is headed by an Executive Director. It has been or is currently responsible for management of other Bank projects.[21]

[20] The Supervisory Board is composed of the following members: seven representatives of state bodies of the Kyrgyz Republic, representing, respectively, the President of the Kyrgyz Republic; the Prime Minister; the Ministers of Economy and Finance; the Minister of Justice; the Minister of Education, Science and Youth Policy; the Minister of Health Care; and an Oblast Governor appointed by the President of the Kyrgyz Republic; seven representatives of local self-government bodies; and seven representatives of civil society. The responsibilities of the Supervisory Board are to guide and supervise the activities of ARIS; to appoint and, if warranted, dismiss the Executive Director; to approve the policies, modifications, and amendments to ARIS' Charter, the annual budget, and working plans and any modifications to them, annual reports, reports on special studies, and independent auditors' reports. The overall responsibility and supervision of ARIS are in the hands of the Supervisory Board, to which both the Executive Director and the Audit Unit report. The Board meets normally once to at most twice a year.

[21] First, Second and Third Village Investment Projects (VIP I, II and III), Small Town Infrastructure and Capacity Building Project (STICBP), Bishkek and Osh Urban Infrastructure Project (BOUIP) and Additional Financing (BOUIP-AF), and the recently approved Urban Development Project.

6. For purposes of the SRWSSDP, ARIS will maintain a core team and support staff as follows: a project coordinator, an institutional development specialist, sanitation specialist, two international civil engineers, two senior national civil engineers, a procurement specialist, a financial management/disbursement specialist, a safeguards specialist (on half-time basis), a monitoring and evaluation specialist (on half-time basis), a project assistant, and an interpreter. ARIS will also engage site supervisors for each sub-project as part of the construction supervision team and contract an individual international expert on a Lump-Sum basis to support the engineering design review process. ARIS will also engage necessary support staff for the social and institutional support activities planned under component 2 and 3. An organogram is presented below:

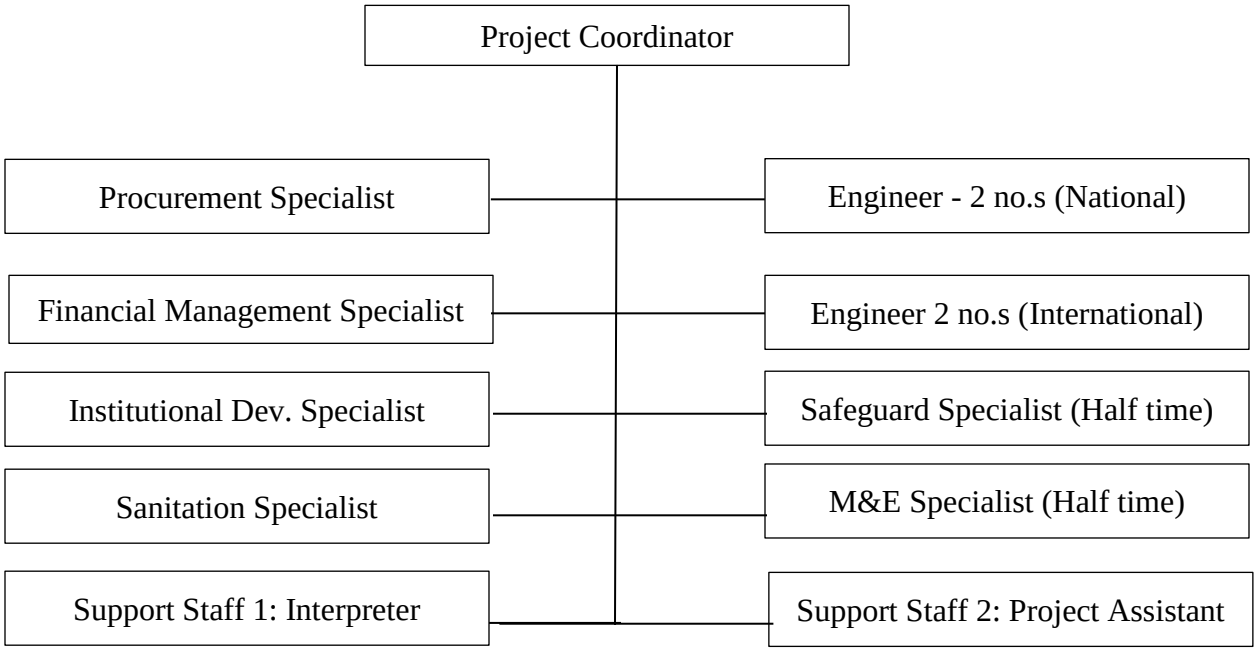


Figure A3.1: Organogram of ARIS Implementation Team

7. The SRWSSDP's project team will work under the management of ARIS's Executive Director, and ARIS' Administrative pool will provide backstopping support, as needed.

8. In its position as the implementing agency for the SRWSSDP, ARIS will be responsible for and carry out all project implementation in accordance with the POM, including procurement, financial management and accounting, social and environmental safeguards, and citizen communication as well as routine communications with the Association. The DDWSWD and participating Ayil Okmotus and CDWUUs at community level will be closely associated with all decisions regarding procurement, contract execution, site supervision, and authorization of payments to contractors. Relations between ARIS and participating villages and assignment of project implementation responsibilities will be governed by an Agreement into which ARIS will enter with each Ayil Okmotu. A model of the Agreement will be included in the Operational Manual. The format for the Agreement must be approved by the Association.

9. Participating Ayil Okmotus (AOs): The heads of AOs, will take the lead on behalf of the participating AO in project implementation. The AO's will be engaged in review of all technical aspects under the SRWSSDP within their prerogatives. Specifically, they will review and comment on all technical specifications and terms of reference, join evaluation panels, review and comment on technical reports and deliverables, exercise supervision oversight, and participate at key points such as testing or commissioning of assets. The AO's office will be responsible for obtaining any required approvals. The AO's office will also be responsible for holding annual public engagement meetings in order to ensure pro-active communication with the population and explain to beneficiaries and the public at large the benefits from the project, report on implementation progress, and disseminate a robust grievance redress process spanning beyond safeguards-related issues. The AO's office will ensure a minimum participation of women in these community consultations.

10. AO's will play an important role to facilitate achievement of the development objectives, to ensure sustainability of investments, and in particular the requirement for service providers to collect revenues which exceed costs (so that CDWUU's are self-sustaining). Specifically, AO's with support from ARIS will ensure tariffs are increased, water meters are installed, billing and collection systems are improved, and connection fees are collected in a timely manner from each household to enable individual connections to be installed in the project areas during the construction periods (aiming for maximum possible coverage). The specific responsibilities of the AO will be outlined in the Agreement which will be signed with ARIS. Obtaining AO's willingness to cooperate in these areas of support will be considered pre-condition for commencement of works.

11. Department for Drinking Water Supply and Wastewater Disposal (DDWSWD) in the State Agency for Architecture, Construction and Communal Services (GOSSTROY). This department is responsible for development of both rural and urban water supply and sanitation sector, including policy, planning and sector coordination. The Department has a relatively low level of authority and capacity, however over recent years it has demonstrated stability and its ownership of the new sector strategy represents significant progress. DDWSWD's role in the project is the overall executing agency which includes (amongst other activities); overall sector coordination and policy support; Government and donor liaison; participation in all procurement activities (for example evaluation member); identification and prioritization of sector interventions (including infrastructure investments and institutional support); and as responsible agency of the Government; and provision of support to ARIS for implementation (as required). DDWSWD will coordinate the national level institutional support activities and will be the primary beneficiary of the expected outputs from this sub-component.

12. Ministry of Finance (MoF): is the Recipient's representative for all World Bank financed projects, including SRWSSDP. As such, the MoF declares its commitments to the objectives of the project and will cause the project to be carried out in accordance with the financing agreement and other relevant documents. In addition, the MoF will be responsible for providing timely co-financing for the project in accordance with the Financing Agreement.

13. **Technical supervision.** Construction supervision for Bank-financed projects implemented by ARIS is usually done by individual consultants hired by ARIS. While most works seems to have been delivered with satisfactory quality, there have been some cases of quality control deficiencies under RWSSP-2. Alternatively however, the capacity of local engineering consulting companies in the Kyrgyz Republic is low and they are not accustomed to perform construction supervision (or act as the "Engineer" in accordance with FIDIC conditions of contract). Typically, Kyrgyz regulations require design (i.e., author) supervision, but this supervision is not coupled with construction supervision by site engineers. Therefore the notion of construction supervision exercised under Bank projects is a new concept for the local consulting industry. During the SRWSSDP's preparation, the Bank organized a consultation workshop for the local construction, design, and supervision industry and confirmed that existing capacity, especially in terms of construction supervision and contract management, remains low and there is a need to build capacity and develop the local industry.

14. In principle, using individual consultants as construction supervisors is not considered best practice, but considering the low capacity of the local consulting industry it has been agreed that construction supervision will be carried out by ARIS, with additional external support. Specifically, after a detailed review of possible construction supervision arrangements for the SRWSSDP including extensive consultations with Government and industry representatives, and in order to enhance quality control, the following arrangements will be followed. ARIS will be assigned as the "Project Manager" or "Engineer" under the civil works contracts, with overall responsibility for construction supervision and contract management. ARIS will enter into an agreement with the Ayil Okmotus (the Employer) who will sign the Civil Works contracts. This will ensure the roles and responsibilities of both parties are clearly defined and the arrangements are legally robust. ARIS will engage necessary international expertise (Individual Consultant(s)), to reinforce their capacity for engineering design review, technical supervision and contract management (including establishment of systems for document control etc).

15. This will include two full time international civil engineers, who will be based within each province, one in Osh and one in Chui. On behalf of ARIS, the international engineers will be responsible for establishing and overseeing systems of quality, time and cost controls to ensure civil works are appropriately supervised and managed in accordance with the conditions of contract and drawing from best international practice. In addition, the international civil engineers will support ARIS's engineering / supervision team through training and capacity building activities. They will also be responsible for preparing monthly progress reports, copies of which shall be furnished to the Association.

16. Two full time, national civil engineers (or resident engineers) will also be engaged by ARIS for each Oblast, along with site supervisors for each of the sub-project areas. These staff will work under the guidance and with support from the two international engineers. The roles and responsibilities of the international and national engineers (who will be certified registered professional within Kyrgyz republic) will be formalized through an official delegation of authorities for each contract. These details will be outlined in the POM, but it is envisaged that the national civil engineers (resident engineers) will be assigned as the Project Manager's or Engineer's representative under the contract, due to national legislative requirements. The

proposed arrangements, which combine both national and international inputs, will satisfy both national regulations and the projects internal quality assurance requirements.

17. A pool of qualified experts (i.e. hydro-geologist, electrical and mechanical engineer etc.) will also engaged for a short period of time on an 'as-needed' basis to support the resolution of specific technical issues if they arise.

Financial Management

18. **Implementing entity.** The Community Development and Investment Agency (ARIS) will be responsible for implementing the financial management (FM) function of the Project, including the flow of funds, budgeting, accounting, reporting, internal controls, and external audit. A FM assessment was carried out to determine the FM implementation risk and the FM arrangements at the implementing agency, including accounting, reporting, planning, budgeting, internal controls, and staffing. FM arrangements were assessed to be 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*.

19. **Strengths and weaknesses.** Significant strengths provide a basis for reliance on the project financial management system including the following: (i) significant experience of ARIS FM staff in implementing Bank-financed projects over the past several years; (ii) adequate accounting software utilized by ARIS; (iii) FM arrangements under active projects are satisfactory; and (iv) unmodified audit reports issued on ongoing projects' financial statements confirm this fact. No significant weaknesses were identified at ARIS. The following capacity building actions have been agreed to be implemented:

Actions	Responsible	Completion date
Prepare FM Chapter of the Project Operations Manual (OM)[22] to reflect SRWSSDP-related internal control, budgeting, external auditing, financial reporting, and accounting policies and procedures	ARIS	Agreed by effectiveness
Modify the existing accounting software for its accounting and financial reporting purposes acceptable to the Association, with capacity to, *inter alia*, generate IFRs, attachments to withdrawal applications including, statement of expenditures, and annual financial statements, in a manner acceptable to the Association.	ARIS	30 days after effectiveness

20. **Budgeting and planning.** ARIS has acceptable budgeting and planning capacity under the SRWSSDP. The annual budget of the SRWSSDP will be based on the final procurement plan that is to be discussed and agreed with the ARIS Executive Director and cleared by the World Bank. All changes to the procurement plan will be reviewed by the Executive Director and

[22] At time of appraisal, ARIS has prepared a draft OM.

cleared by the World Bank. The project coordinator, the FM specialist, technical specialists of the project, and the procurement specialist will be involved in preparation of the annual budget for their respective components. The budget will be cleared by the MoF and the Bank and approved by the Executive Director of ARIS. The budget will form a basis for allocating funds to project activities and for requesting counterpart funds from the Government where appropriate. Such a budget is not suitable for the planned figures of IFR. Therefore, it was agreed that ARIS will prepare a Disbursement Plan based on the approved Procurement Plan. The Disbursement Plan will be prepared according to the IFR format (disbursement categories, components and activities, account codes, and broken down by quarter) and will be used for calculation of IFR planned figures.

21. **Accounting and Reporting.** Cash basis accounting will be applied for the projects' accounting. ARIS will maintain its current accounting system. Project management-oriented Interim unaudited Financial Reports (IFRs) will be prepared under the SRWSSDP. ARIS will produce and submit to the Association a full set of IFRs every calendar quarter throughout the life of the SRWSSDP. The format of IFRs will be agreed before negotiations and will include (i) Project Sources and Uses of Funds; (ii) Uses of Funds by Project Activities; (iii) DA Statement; (iv) Project Balance Sheet; and (v) Statements of Expenditure Withdrawal Schedule. IFRs will be produced by the accounting software. These financial reports will be submitted to the Association within 45 days of the end of each calendar quarter. The annual audited project's financial statements and audit report together with the management letter will be provided to the Association within six months of the end of each fiscal year and also at the closing of the SRWSSDP.

22. **Internal Controls.** ARIS' internal control system was assessed to be capable of providing timely information and reporting on the SRWSSDP. The FM chapter of the draft OM is well-prepared and provides for full document accounting and financial reporting policies and procedures such as internal control procedures, including authorization of expenditures and approval of the payments; bank reconciliations; verification of expenditures eligibility by the Financial Manager; 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; and safeguards for assets. Expenditures incurred by ARIS will be authorized by the director and verified for the eligibility and accuracy by the financial manager. The final Operational Manual will reflect the specific activities of the SRWSSDP, including Chart of Accounts, Audit TOR, frequency of submission, and format of IFRs.

23. **Staffing.** ARIS has experienced FM staff, consisting of the Financial Manager responsible for overall FM arrangements of all projects implemented by the agency. The Financial Manager has extensive experience working on the Bank-financed projects. The Financial Manager will be in charge of the overall FM arrangements of the SRWSSDP as well. There are also four experienced disbursement specialists at ARIS, a specialist of financial literacy, and one assistant to the Financial Manager. Such arrangements are considered adequate; no further actions are required.

24. **External Audit.** External audit of the SRWSSDP will be conducted (i) by independent private auditors acceptable to the Association, pursuant to TORs acceptable to the Association, and selected by ARIS, and (ii) according to the ISA issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants. The TOR will 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 will be submitted by the PIU together with the due date for submission. The audited financial statements will be disclosed to the public in a manner acceptable to the World Bank. Following the Association's formal receipt of these statements from the borrower, the Association makes them available to the public in accordance with the World Bank Policy on Access to Information.

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

Disbursements

25. **Disbursements from the IDA Credit and Grant Accounts will 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 separate (Credit and Grant) designated accounts will be opened in a commercial bank acceptable to the Association. For payments above the minimum application size, as will be specified in the Disbursement Letter, ARIS may submit withdrawal applications to the Association for payments to suppliers and consultants directly from the Credit and Grant Accounts. Disbursement arrangements will be detailed in the Disbursement Letter.

26. The project will have two disbursement categories as follows:

Category	Amount of the Credit Allocated (expressed in USD)	Amount of the Grant Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Works under Components 1 and 2	12.92	3.28	78%
(2) Goods, consulting services, training and incremental operating costs under Components 1, 2, 3 and	-	7.30	100%

4			

27. The Government contribution of US$4.50 million will finance the remaining 22 percent for Works under component 1 and 2. Since the Government contribution under this category is significant (over 20%) it should be ensured that timely availability will not impede project implementation. Therefore, the Government should commit itself through a letter to make available the needed contributions right at the beginning of the year.

28. **Procurement.** Overall, the public procurement environment in the country is improving as the Public Procurement Department (PPD) under the Ministry of Finance has revised the Public Procurement Law (PPL) and the new PPL has been recently adopted by the Parliament and signed by the President. The new PPL will create an independent complaint review commission and PPD will become a regulatory body for public procurement. The Association 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 Association TA and ADB financing.

29. **Applicable Procurement Guidelines.** Procurement for the proposed Project will be carried out in accordance with both "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 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 Association, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between ARIS and the Association task team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect actual project implementation needs and improvements in institutional capacity.

30. **Procurement Risk Assessment.** The Bank staff conducted a procurement capacity and risks assessment using the Procurement Risk Assessment and Management System (PRAMS). Procurement activities will be carried out by ARIS, which has been effectively managing procurement activities under BOUIP, VIP3, and the RWSSP-2. ARIS will have overall responsibility for procurement under the project. ARIS has a main office in Bishkek and seven oblast offices. The main office of ARIS is staffed by four well-qualified and experienced procurement specialists, of which one will be dedicated to the SRWSSDP team. Ten small oblast-level liaison offices ensure adequate coverage of the country and will provide administrative and logistical support for ARIS field staff.

31. The Procurement Capacity Assessment Report, including the risks and risk mitigation plan, has been filed in the World Bank's PRAMS. The key issues and risks include: (i) potential risk of delays in the implementation of the project due to the complexity of procurement

processes and decision-making that involves local governments and (ii) insufficient contract monitoring and contract management skills. Given the findings of the assessments, the initial overall procurement risk under the project is assessed as "substantial." Mitigation measures include:

- Ensure the publication of procurement notices and contract award information as required by the Bank Procurement and Consultant Guidelines, including publication on the E-GP website

- Prepare project Operational Manual that will include a procurement section detailing procurement arrangements and an independent complaint-handling mechanism, including for contract management.

- To bring to the Association's notice each and every complaint received from any supplier or consultant relating to the procurement and contract management process, and to record and address of these complaints promptly and diligently.

- To maintain up-to-date procurement records and to make these available to the Association's staff, auditors, etc., as required.

32. **Procurement of Works.** Works procured under this project would include rehabilitation of the water supply system and sanitation facilities in the target rural communities.

33. **Procurement of Goods.** Goods contracts equal and above US$ 1,000,000 equivalent will be procured under ICB procedures using the Bank's SBD for procurement of goods. The NCB method will be applicable for procurement of goods contracts with estimated budget of less than US$ 1,000,000. The ECA Sample NCB bidding documents shall be used taking into account the NCB conditions set forth in the Financing Agreements. Goods contracts with an estimated budget less than US$ 100,000 equivalent may be procured using Shopping procedures on the basis of at least three written price quotations obtained from qualified suppliers.

34. **Selection of Consultants.** Consulting services will include development of detailed designs; various engineering services related to technical supervision of the civil works and project audit; and various contracts under component 3 to strengthen the institutional capacity of project beneficiaries. The methods for selection of consultants will include Quality and Cost Based Selections (QCBS), Quality Based Selections (QBS), Fixed Budget Selection (FBS), Least Cost Selection (LCS), Selection based on Consultants Qualifications (up to US$ 300,000), Single Source Selection in compliance with Paragraph 3.8 of the Bank's Consultant Guidelines, and Individual Consultants (IC). Contracts estimated to cost above US$ 300,000 equivalent will be advertised through United Nations Development Business (UNDB), the Bank's website, and local media (one newspaper of national circulation or the official gazette, and IA's website). Short-lists of consultants for services estimated to cost less than US$ 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 basis for all procurement of consultancy services to be procured under the Project. Some ARIS staff hired under previous projects would continue working for implementation of the project.

35. **Training.** Training includes expenditures (other than those included in the consulting category) in connection with study tours, training courses, seminars, workshops and other training activities, including cost of training materials, space and equipment rental, travel, per diem costs of trainees and trainers, and trainers' fees (as applicable) based on an annual budget found satisfactory by IDA.

36. **Operating Costs.** The credit/grant will finance incremental expenses incurred by ARIS on account of the project implementation, management and monitoring, including operation and maintenance of vehicles, office equipment operation and supplies, communication costs, support for information systems, translation costs, bank charges, travel and per diem costs, salaries of contractual staff (excluding consultants' services and salaries of officials of the Recipient's civil service), social charge, office administration costs, and other reasonable expenditures directly associated with the carrying out of the project as agreed by the Association; all based on an annual budget acceptable to the Association.

37. **Assessment of the agencies' capacity to implement procurement.** Responsibility for actual implementation of the project will rest with ARIS, which was designated as the Project Implementation Agency. Participating Ayil Okmotus will retain authority to sign contracts and their representative will be closely associated with all decisions regarding contract execution, site supervision, and authorization of payments to contractors.

38. **Procurement Thresholds and Methods of Procurement.** 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 Association. The national competitive bidding (NCB) conditions will be part of the Financing Agreement. The following methods of procurement shall be used for procurement under the project.

Expenditure Category	**Contract Value (USD)**	**Procurement Method**	**Bank Prior Review**
Civil Works	>= 5,000,000	ICB	All ICB contracts
	< 5,000,000	NCB	First contract
	<50,000	Shopping	First contract
	NA	DC	All
Goods	>= 1,000,000	ICB	All ICB contracts
	<1,000,000	NCB	First contract
	<100,000	Shopping	First contract
	NA	DC	All DC contracts
Consultant Services	NA	QCBS, QBS, FBS, LCS and CQS*	All contracts >= USD 300,000 for firms; all contracts >= USD 200,000 for individuals; and all
	NA	SSS	

	NA	IC	SSS contracts above 5,000.

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

39. The Procurement Plan sets forth those contracts which shall be subject to prior review by the Bank. All other contracts shall be subject to post review by the Bank. The Bank may, at its own discretion, require that a sample of contracts below the threshold be subject to prior review, at any time or when the Procurement Plan is updated. 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.

40. **Procurement plan.** ARIS in consultation with DDWSWD, has developed a Procurement Plan for the first 18 months of project implementation. This plan is dated August 17, 2016. The plan will be made available in the project database, and in the Bank's external website after approval of the project. The Procurement Plan will be updated annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

41. The frequency of procurement supervision missions will be once every six months. Special procurement supervision for post procurement reviews will be carried out at least once every twelve months.

42. **Advance procurement**. To facilitate implementation of the project, all new procurement activities will be advanced as feasible in line with the agreed procurement plan.

43. **Retroactive financing**. There will be a provision for retroactive financing up to an aggregate amount not to exceed SDR 500,000 equivalent. This will cover eligible expenditures procured in accordance with World Bank guidelines and implemented in accordance with other relevant operational policies for executing project activities incurred prior to effectiveness. Retroactive financing will finance the relevant project expenditures incurred and payments made on or after November 1, 2016.

44. **Monitoring & Evaluation.** ARIS will also be in charge of continuous monitoring and evaluation (M&E) of project implementation. Accordingly, M&E activities will focus on (i) ensuring that project activities are implemented in accordance with procedures outlined in the

OM; (ii) providing information on project performance in terms of project benefits and institutional capacity development; (iii) alerting the Kyrgyz authorities and the Bank to actual and/or potential problems in implementation so that adjustments can be made in a timely fashion; and (iv) providing a mechanism for ARIS to continuously self-evaluate its performance and explore possible improvements. ARIS will prepare semi-annual progress reports and submit them to the Association, with copies to DDWSWD and the MoF. Semi-annual results will be consolidated in an Annual Report.

Annex 4: Implementation Support Plan

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project

Strategy and Approach for Implementation Support

1. The Implementation Support Plan (ISP) describes how the Association will assist the client in achieving the PDO of the project. In particular, the ISP puts emphasis on accomplishing the following objectives: (i) provide necessary technical advice to the client and bring international experiences and good practices to ensure that the project meets the Association's technical standards; (ii) ensure that the Implementing agency's measures meet the standards approved by the Association in terms of construction supervision; (iii) ensure that the required fiduciary, social, and environmental safeguards are put in place and implemented per the Financing Agreement and other project documents; and (iv) ensure that the annual training plans and programs benefit exclusively the main project beneficiaries.

Implementation Support Plan

2. **Technical Implementation Support.** During the implementation phase, the task team will continue to engage experienced civil engineers to ensure the technical quality of outputs. Specifically, a civil engineer with a specialization in water and sanitation, will be engaged to review all designs prior to tender. Given that earlier Bank-financed projects in the Kyrgyz Republic have experienced issues with sub-optimal designs, and the generally low capacity of the local consulting industry, reviewing designs is required to mitigate existing risks. During the construction phase, the engineer on the team will provide supervision support to ensure the quality of works and safety as well as to advance discussions on the O&M strategies by the recipient participating AO's. Given the shortcomings in construction supervision observed in other projects implemented by ARIS, particular attention will be placed to ensure that supervision systems are in place and are being followed closely. Among others, weekly planning documentation and daily supervision records will be reviewed regularly. Technical implementation missions will be implemented three times a year during the first 18 months of project implementation, followed by bi-annual supervision missions. The engineer will carry out site visits where works are ongoing or where service has recently commenced.

3. **Institutional Strengthening Support**. SRWSSDP has a focus on strengthening the water sector institutions at the local and central level for improved service delivery. The Bank will offer technical support through this process by deploying specialized skill sets relevant to the planned reform activities. This will specifically include an Institutional Specialist, experienced in water sector reforms (planning and implementation) and a Financial Specialist, with extensive experience in utility finances, tariff structuring, investment planning and financial regulation. Institutional strengthening support will be implemented two times a year for the full project period.

4. **Procurement Supervision and Ex-post Review.** Routine procurement reviews and supervision will be provided by the procurement specialist 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.

5. **Financial Management Implementation Support**. During project implementation, the project team will supervise the project's financial management arrangements in the following ways: (i) review the project's quarterly IFRs as well as the project's annual financial statements, the auditor's reports and management letters, and remedial actions recommended in the auditor's management letters, and (ii) during the Bank Team's on-site missions, review the following key areas: project accounting and internal control systems; budgeting and financial planning arrangements; disbursement arrangements and financial flows, including counterpart funds, as applicable; and any incidences of corrupt practices involving project resources. As required, a World Bank-accredited financial management specialist will participate in the implementation support and supervision process.

6. **Environmental and Social Safeguards Implementation Support**. A Bank Environmental Specialist will review the implementation of the project's EMPs and provide guidance to the Implementing Agency's environmental specialist to ensure compliance with the Bank's environmental safety guidelines. Similarly, a bank Social Specialist will review the implementation of the project's RAPs (if any) and provide guidance to ARIS to ensure compliance with the Bank's social safeguards guidelines.

7. **Social Mobilization.** The Social Specialist will also review citizen engagement under the project, including the commitment to gender representation, and provide support regarding the implementation of the grievance mechanism in place. Assistance will also be provided towards adopting demand-side management to improve commercial practices of utility operators.

Table 1: Skills mix required for the duration of project implementation

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task Team leaders	30	10	
Civil Engineer	20	10	Mixed: field and non-field based staff
Institutional Specialist	10	5	
Financial Specialist	10	5	
Environmental specialist	4	6	Field-based staff
Social specialist	8	8	Field-based staff
M&E specialist	2	2	At MTR and project end
FM specialist	4	4	Field-based staff
Procurement specialist	8	8	Field-based staff

Annex 5: Economic Analysis

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project

1. The economic benefits from the project will be mirrored from improved quality of water supply services and improved sanitation services in schools, pre-schools and other public buildings. Investments in rural water supply systems are expected to result in improved water quality, expanded access to improved water sources, increase duration of water supply and reduced seasonal variation. Improving these services will enhance welfare by reducing coping costs (for example, time saved from water collection, reduced need for in-house drinking water treatment). Improving the quality of water supply, sanitation services and practices – through the WASH educational program - are also expected to have welfare effects through improved health.

2. The project is expected to deliver substantial benefits by improving water supply services for approximately 100,000 residents in 38 villages. Currently, around 60-70 percent of households do not have in-house or in-yard water connections and spend 1-1.5 hours per day collecting water. Many households, due to intermittent supply or distant standpipes, still rely on unprotected standing water sources such as rivers, irrigation canals and shallow wells. Number of hours of water supplied varies from 2-3 hours to 24 hours in some of the villages. As a result they have important coping costs. Overall beneficiary villages in the Chui and Issyk-Kul Oblasts seem to have better quality of water supply services (both in terms of duration and access) when compared to beneficiary villages in Osh Oblast. A household survey is expected to be conducted shortly and will provide additional evidence of baseline conditions prior to project interventions. A follow-up survey is expected to be conducted prior to project closing to assess end-of project conditions and benefits.

3. The project's economic analysis relies on activities identified during project preparation to assess benefit and cost streams. It includes (i) the cost of all project components, including estimated O&M costs and project implementation costs and (ii) all measurable benefits, including decreases in the time spent collecting water; and welfare gains at household level associated with reduced need for in-house treatment (i.e., boiling of water) and reduced incidence of water-related diseases such as infectious hepatitis and acute enteric infections as a result of improved access to quality water and decline in the reliability on standing water sources. Expected benefits are based on results observed from similar projects in the country, namely the STICBP and the Rural Water Supply and Sanitation Projects (RWSSP1 & 2) and the Bishkek and Osh Urban Infrastructure Project and Additional Financing (BOUIP and BOUIP-AF). As with all economic analyses, the costs are perfectly observed while the benefits are not.

4. The economic analysis assumes 20 years of asset life in the case of water supply systems, including the project implementation period, with corresponding benefits to be realized starting

in 2021. The adopted social discount rate is 5 percent[23] and the standard conversion factor for the cost is assessed at 0.85. All assumptions and key results are outlined below.

5. **The detailed list of benefits and main assumptions** can be found below:

- ***Reduced time in collecting water:*** Based on results obtained from similar operations in the country (STIBCP, RWSSP1 & 2), a reduction to around 30 minutes of time for collecting water has been assumed (this is considered a conservative assumption as most households will actually benefit from in-yard or in-house water connection by the project and time savings will therefore be greater). A rural average hourly wage of US$0.66[24] is used as a conservative measurement of the opportunity cost of this time savings. Under these assumptions, the project is generating annual benefits of US$2,556,619 from economic gains of saving time to collect water.
- ***Reduced coping costs from boiling water:*** It is common practice in the country for households to boil water prior to consuming it. Energy savings associated with reduced need to boil water due to improved water quality are estimated based on a 10 liters/day per capita benchmark. We estimate that by the end of the project only 20 percent of households will boil water (bringing boiling practices to similar levels as observed in other projects). Well-established benchmarks for the region are used in terms of energy requirements to boil water (0.09 kWh per liter of water) and an economic cost of US$0.27 per kWh.[25] Under these assumptions, the project is expected to generate annual benefits of US$3,454,169 from energy savings linked to boiling water.
- ***Benefits from reduced incidence of water-borne diseases.*** Data on incidence of water-borne diseases had not be collected in all beneficiary villages. Villages in Chui and Osh Oblast reporting data revealed 179 cases of infectious hepatitis over the past year and 3 cases of acute enteric infections. No data was available for Issyk-Kul and as such benefits estimated below are likely underestimated. Assuming that people lose around 10 days of work/school due to these illnesses and treatment costs of around KGS 5,300/person (US$88/person) we find that a reduction in water-borne diseases could lead to annual savings of around US$8,796 in reduced costs for treatment and US$6,798 in reduce losses of days of work.

6. **All project costs,** including components 1, 2, 3 and 4, Government's contribution, and expected O&M costs were applied in the economic analysis. Based on these assumptions the **total estimated annual benefits** of the project are US$6,026,383 yielding an **ERR** of 13 percent and a NPV of US$19.99 million**.**

7. **A sensitivity analysis** was conducted to assess the impacts of (i) a reduction of expected benefits, (ii) an increase in expected costs and (iii) an increase in implementation time. Results can be found in the table below. As can be observed ERR rates remain above the recommended 5 percent which support the economic rationale for the proposed project.

[23] As per new Guidelines a 5 percent Discount Rate is recommended for project evaluation - *Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects*

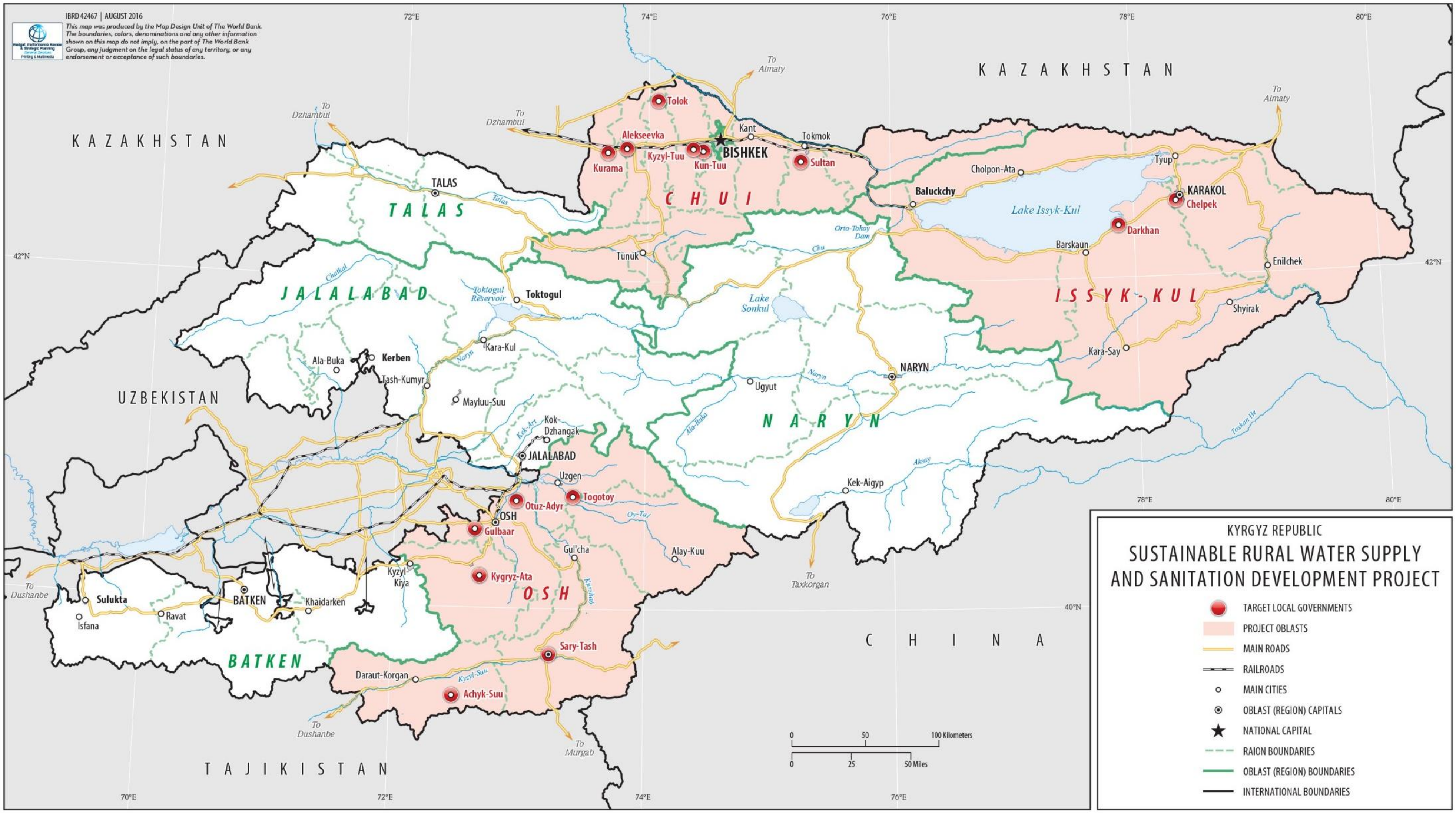
[24] Based on ILO data for the Kyrgyz Republic.

[25] World Bank (2012), *Europe and Central Asia Balancing Act; Cutting Subsidies, Protecting Affordability, and Investing in the Energy Sector in Eastern Europe and Central Asia Region*

	Economic Rate of Return		
Reduction of expected benefits	12 percent *Reduction benefits by 20 percent*	7 percent *Reduction benefits by 40 percent*	5 percent *Reduction benefits by 50 percent*
Increase in expected costs	12 percent *Cost overrun by 10 percent*	10 percent *Cost overrun by 25 percent*	9 percent *Cost overrun by 45 percent*
Increase in implementation time	11 percent *Increased impl. Time by 1 year*	10 percent *Increased impl. Time by 2 year*	

Annex 6: Map of Project Areas

KYRGYZ REPUBLIC: Sustainable Rural Water Supply and Sanitation Development Project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KYRGYZ REPUBLIC
SUSTAINABLE RURAL WATER SUPPLY AND SANITATION DEVELOPMENT PROJECT
TARGET LOCAL GOVERNMENTS
PROJECT OBLASTS
MAIN ROADS
RAILROADS
MAIN CITIES
OBLAST (REGION) CAPITALS
NATIONAL CAPITAL
RAION BOUNDARIES
OBLAST (REGION) BOUNDARIES
INTERNATIONAL BOUNDARIES
KAZAKHSTAN
UZBEKISTAN
TAJIKISTAN
CHINA
TALAS
CHUI
JALALABAD
NARYN
ISSYK-KUL
OSH
BATKEN
BISHKEK
TALAS
NARYN
KARAKOL
JALALABAD
OSH
BATKEN
Tolok
Alekseevka
Kurama
Kyzyl-Tuu
Kun-Tuu
Sultan
Chelpek
Darkhan
Togotoy
Otuz-Adyr
Gulbaar
Kygryz-Ata
Sary-Tash
Achyk-Suu
Kant
Tokmok
Cholpon-Ata
Tyup
Baluckchy
Lake Issyk-Kul
Barskaun
Enilchek
Shyirak
Kara-Say
Tunuk
Toktogul
Toktogul Reservoir
Lake Sonkul
Orto-Tokoy Dam
Kara-Kul
Kerben
Ala-Buka
Tash-Kumyr
Mayluu-Suu
Kok-Dzhangak
Ugyut
Uzgen
Kek-Aigyp
Gul'cha
Alay-Kuu
Kyzyl-Kiya
Sulukta
Isfana
Ravat
Khaidarken
Daraut-Korgan
To Almaty
To Dzhambul
To Dushanbe
To Taxkorgan
To Murgab
0 50 100 Kilometers
0 25 50 Miles
72°E
74°E
76°E
78°E
80°E
70°E
42°N
40°N