



Enabling poor rural people
to overcome poverty

Kyrgyz Republic

Livestock and Market Development Programme II

Project design report

Main report and appendices

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Currency equivalents

Currency Unit	=
US\$1.0	=

Weights and measures

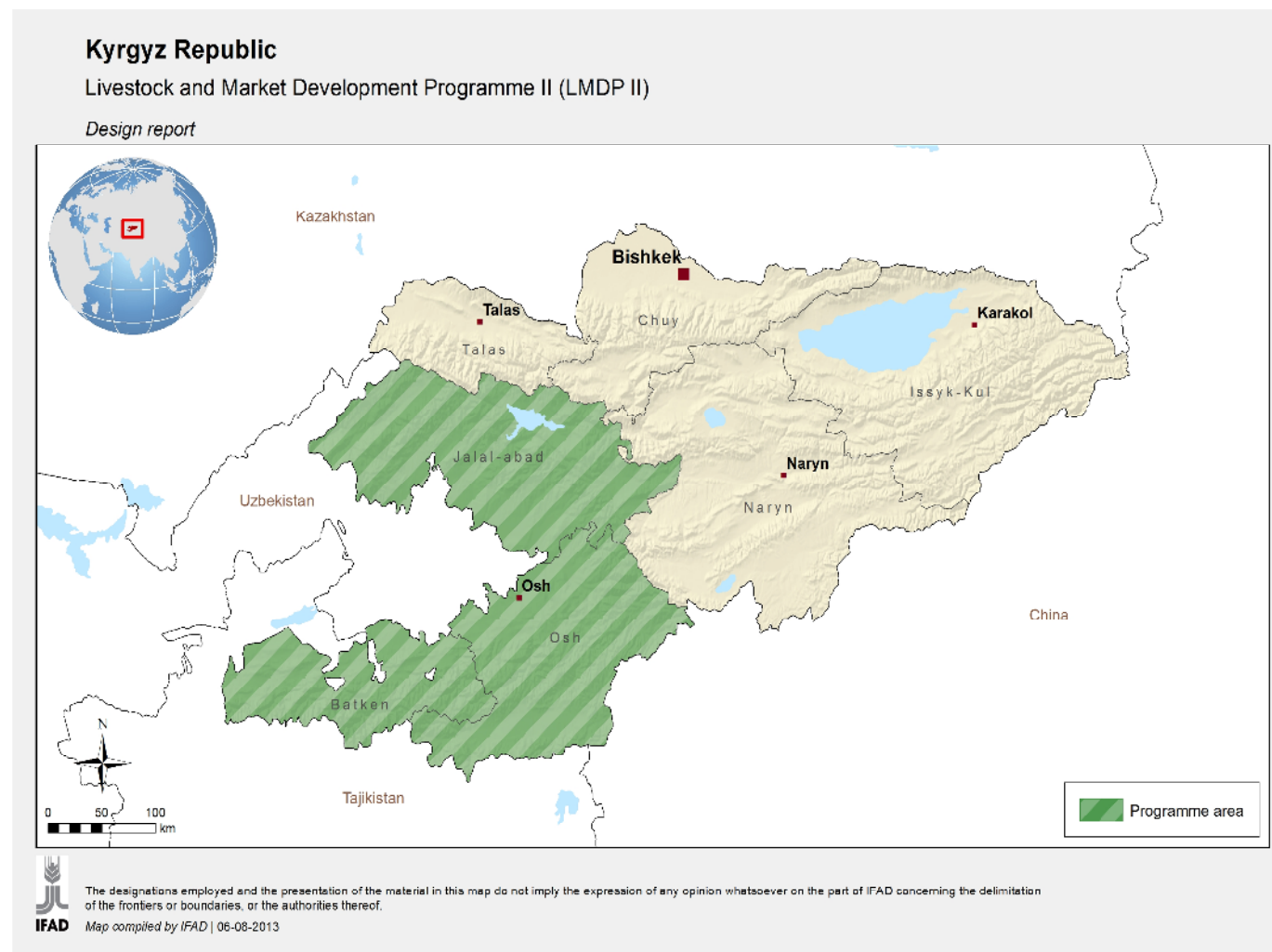
1 kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres

Abbreviations and acronyms

AHSC	Animal Health Sub-Committee
AKF	Aga Khan Foundation
AISP	Agricultural Investments and Services Project
AO	Aiyl Okrug (sub-district with elected government sometimes referred to as Aiyl Aimak) or Aiyl Okmotu (elected government in Aiyl Okrug)
APIU	Agricultural Projects Implementation Unit
ARIS	Community Development and Investment Agency
ASAP	Adaptation for Smallholder Agriculture Programme
AWPB	Annual Work Plan and Budget
CACILM	Central Asian Countries Initiative for Land Management
CAMP	Central Asia Mountain Partnership
CAREC	Regional Environmental Centre for Central Asia
CC	Climate Change
CDS	Country Development Strategy
CM	Climate Model
CNK	Climate Network of Kyrgyzstan
CPMP	Community Pasture Management Plan
CSF	Community Seed Fund
CV	Community Veterinarian
DRR	Disaster Risk Reduction
ENRM	Environment and Nature Resource Management
ERR	Economic rate of return
ESM	Earth System Model
EU	European Union
FIC	Foundation for Climate Research
GCM	Global Climatic Model
GDP	Gross Domestic Product
GHG	Green House Gases
GIZ	German International Cooperation Agency
ICARDA	International Centre for Agriculture Research Dry Areas
IEH	Institute for Hunger Studies
IFAD	International Fund for Agriculture Development
IPCC	International Panel on Climate Change
IRR	Internal rate of return
KCBTA	Kyrgyz Community-Based Tourism Association
KNAU	Kyrgyz National Agriculture University
KLPRI	Kyrgyz Livestock and Pasture Research Institute (also referred to as Kyrgyz Scientific and Research Livestock and Pasture Institute or KSRLPI)
KM	Knowledge management
KSRVI	Kyrgyz Scientific Research Veterinary Institute
LMDP or Programme	Livestock and Market Development Programme comprising of LMDP-I and LMDP-II
LMDP-I	Livestock and Market Development Project, phase I (Issyk-Kul and Naryn oblasts)
LMDP-II or Project	Livestock and Market Development Project, phase II (Batken, Jalalabad and Osh oblasts)
MAP	Medicinal and Aromatic Plants
MoAM	Ministry of Agriculture and Melioration
MCCC	Milk Collection and Cooling Centre

MIS	Management Information System
M&E	Monitoring and Evaluation
MP	Mountain Partnership
mt	Metric ton
NCCC	National Committee on CC Consequences
NFCSF	National Federation of Community Seed Funds (sometimes referred to as the Public Union of Community Seed Funds)
NGO	Non-Government Organization
NTFP	Non Timber Forest Products
PC	Pasture Committee or <i>Jaiyt</i> Committee
PD	Pasture Department
PES	Payments for Environmental Services
PMIP	WB funded Pasture Management Improvement Project
PUU	Pasture Users Union
RAPUU	Republican Association of Pasture Users' Unions
Rayon	District level of administration
RCP	Representative Concentration Pathway
RIMS	Results Impact Management System
SAEPF	State Agency Environmental Protection & Forestry
SFS	State Forest Service
SIVPSS	KR State Inspectorate for Veterinary and Phytosanitary Security (former SVD has become a part of this agency)
SNC	Second National Communication (UNCCC)
SVD	State Veterinary Department (also referred to as the State Veterinary and Surveillance Department)
TOT	Training-of-trainers
UCA	University of Central Asia
UNFCCC	UN Framework Convention on Climate Change
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WFP	World Food Programme
WOCAT	World Review of Conservation Approaches and Technologies

Map of the project area



Executive Summary

Rationale

In spite of the fact that livestock plays a critical role in the country, both economically and culturally, livestock productivity is far below its potential. However, projects such as the on-going agricultural investments and services project co-funded by IFAD and the World Bank have demonstrated that substantial improvements can be made with the right combination of activities and incentives, that livelihoods of small-scale livestock producers can be improved, and that important benefits to the economy can be achieved. There is both an opportunity here and a pressing need to strengthen the livestock sector by consolidating and scaling up the work being done by AISP and similar projects. The close link between livestock productivity and the rational and efficient use of pastures requires a concurrent focus on the pasture/natural resource management aspects of livestock production. This in turn requires an effort to mainstream climate change adaptation into livestock and pasture management given the fact that this sector is extremely vulnerable.

Project Area and Target Group

The Project area comprises three southern regions of the country - Batken, Jalalabad, and Osh. These three additional regions are contiguous to the LMDP-I regions (Naryn and Issyk-Kul) and extend to the west, bordering with Uzbekistan and Tajikistan. Together the three oblasts have a combined area of almost 80,000 km², and a total population of about 2,900,000. Livestock production is a very important economic activity of the three provinces. Combined, they account for 51 percent of the nation's cattle population, 47 percent of the sheep and goat population, and 36 percent of horses.

The project target group has been defined as follows:

Vulnerable households primarily among small livestock producers. They are the poorer part of the population and are vulnerable to shocks and increased natural hazards and extreme events brought by climate change.

Women headed households. Due to the rise in migration of men, women headed households are becoming increasingly prevalent. They are often constrained in terms of labour to manage their livestock and carry out basic agricultural activities. Surveys have found that they have less livestock than male-headed households and are more liable to be food insecure.

Other livestock producer households. These households represent the other part of the PUU livestock producer households – those that are not generally classified as vulnerable but nevertheless form part of the project's target population.

Community veterinarians. While the portion that the community vets represent of the PUU/PC population is very small, they are an integral and important part of the livestock producer community and an important target group for the project as they will be the focus for many of the animal health and productive initiatives of the project.

Project Objectives and Approach

The development objective is: Improved livestock productivity and enhanced climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers. There are three project outcomes: (i) More productive and resilient pastures, and increased supplementary feed available to community livestock; (ii) Healthier livestock with lower levels of mortality; and (iii) Income from additional income generation activities benefits communities prone to climate change.

The project focuses on two key elements: the importance of the Pasture Committee (PC) and Pasture Users Union (PUU) as the core of project interventions and linked to them the private community vets who are the key resource at the community level to facilitate improvements in animal health and productivity. The PC and PUU will organize and carry out the participatory planning process that will be the basis for refining the risk-mitigation Community Pasture Management Plans (CPMP). The plans produced provide the basis for carrying out improvements to the pastures and help improve their sustainability and enhance their resilience under the project, part of which is the selection and implementation on the investment project(s) to be financed by the project in each PC/PUU. The plans

will also provide the basis for animal health and disease control initiatives in the PCs/PUUs spearheaded by the community vets and be the starting point for the identification of groups of livestock producers, both women and men, aiming to set up additional income generating activities.

The project comprises four interlinked and complementary investment components. The first component – Community-based Pasture Management and Vulnerability Reduction – represents the major part of project investment and contains the funding for the CPMP investment projects. Together with the second component – Livestock Health and Production Services – they are the two major project investment activities and represent 87% of base costs. Almost all of the activities under these two components would directly benefit the project's target households. Component 3 is a small and limited intervention to develop additional income generating activities to increase the resilience of pasture communities. The fourth component provides for project management.

Project Investment Components

Component 1 – Community-Based Pasture Management and Vulnerability Reduction. This component will take advantage of the conducive environment provided by the new Pasture Law, the national emergency response activities and climate change adaptation policies, and will support Pasture Users Unions (PUUs) and Pasture Committees (PCs) in the design, development and implementation of community-based pasture management plans that fully integrate animal health activities as well as adaptation and disaster risk-reduction.

Sub-Component 1.1 – Community Risk-mitigation Pasture Management and Investments. The sub-component provides for the initiatives that are required to improve the resilience and productivity, use and access to the pastures.

Sub-Component 1.2: Pasture Institutional Strengthening. The sub-component will mainly expand the activities initiated under LMDP-I to the Project area, yet in addition it would integrate climate change adaptation throughout all the proposed activities.

Component 2 – Livestock Health and Production Services. The Programme will aim at establishing an effective private veterinary service through additional support and training to ensure that Community Vets are self-sufficient and delivering an effective demand-driven Service

Sub-Component 2.1: Strengthening Veterinary and Community Animal Health Services. The activities planned under this sub-component are: (i) Establishing and Training Animal Health Sub-Committees, and (ii) Community Veterinarian Capacity Building.

Sub-Component 2.2 – Animal Health Education and Capacity Building. This sub-component focuses on the support needed by the educational system to provide the facilities, teaching and incentives to produce a cadre of motivated young vets who will work in the project area communities.

36. Component 3 – Diversification and Market/Value Initiatives. The rationale for the third component is the need to promote diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. The Project will encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women – can build upon, improve, and expand existing value chains and develop additional sources of income, becoming service providers for the wider community.

Component 4. Project Management. - The component provides for the overall management of the project by the Agricultural Projects Implementation Unit (APIU) under the Kyrgyz Republic Ministry of Agriculture, including a separate provision for the monitoring and evaluation and support for knowledge management. The project management costs, including the provision made for M&E, represent about 2% of total project costs.

Implementation responsibilities

The two institutions that have been the key to successful implementation of AISP and other projects are Agricultural Projects Implementation Unit (APIU), under the Ministry of Agriculture and ARIS (Community Development and Investment Agency), a large well financed organization, that focuses particularly on community based initiatives and has a mandate to alleviate poverty. The two would have the prime responsibility for the implementation of LMDP. Each would have its clear areas of responsibility and each would be financially accountable for the implementation of its own activities,

with the APIU having overall responsibility for project oversight and coordination. Memoranda of Understanding would be drawn up between the APIU and ARIS and between the APIU and the other implementing partners for which the APIU has responsibility.

Project coordination and oversight

There are a number of bodies that already exist that will be used to help provide guidance and support for the project. They include: the Ministry of Agriculture Steering Committee and the ARIS Steering Committee. The project would use both of these and, as and when necessary, matters concerning LMDP would be placed on the agenda of these two bodies for discussion and advice. In addition, a project-specific oversight body would be formed to provide guidance for project management – the Project Coordination and Reference Group. It would include representation from each of the implementing agencies, representation from each of the two oblast administrations, and representation from the PC level and private sector. The body would have a balance between government and civil society members. It would meet quarterly and on an ad hoc basis as required and be an advisory, not an executive body. It would review progress of the project against targets and its success in meeting the performance indicators. It would also review the progress against the annual work programme and budget.

Financial management, procurement and governance

The project's financial management arrangements would build on the experience gained by APIU and ARIS in fulfilling their responsibilities for financial management under AISP. Their handling of the project accounts, audits, procurement and disbursement are considered to be satisfactory and fully consistent with the financial management rules and regulations of IFAD and the World Bank. Financial management staff of both institutions are well trained and experienced in carrying out their responsibilities. Similarly, a joint WB/IFAD Mid-term Review Mission for the AISP found that the APIU and ARIS have adequate procurement capacity in terms of qualified staff, who has been trained internationally, and the established procedures are in place to undertake procurement of goods and services on a competitive basis.

Project Costs

The total project costs, including physical and price contingencies, are estimated at about US\$ 39.5 million (KGS 2.0 billion). Physical and price contingencies are 2% of the total project costs and the foreign exchange component is estimated at about 4% of the total project costs. Taxes and duties make up approximately US\$ 0.2 million.

Project financing

IFAD would provide a *loan* of US\$ 11 million and a *grant* of US\$ 11 million (each representing 28% of the project costs), and an *ASAP grant* of US\$ 10 million (25% of total project costs). The *government contribution* is estimated at US\$ 0.3 million (0.6% of project costs). Approximately US\$ 7.1 million (18%) would be provided by the *beneficiaries* as co-financing of the Community Pasture Management Plans and other grants. The Republican Association of PUUs would provide around 0.4% of the project costs.

Project benefits

The main Project benefits would go to households in the 190 PUUs areas that constitute the Project areas in the selected oblasts. Some 304,000 households would benefit directly and indirectly from the Project's interventions (80% of the targeted population). The pasture management and animal health activities would reach a high proportion of the target population with the largest part of Project investment going directly to the beneficiaries in the form of matching grants, training and technical assistance. Benefits would derive from: (i) increased pasture yields and less vulnerable pastures; (ii) raised feed crop yields and expanded cultivated feed crop area; (iii) improved resilience and capacity of smallholders for livestock and pasture management; (iv) reductions in livestock mortality and improved livestock performance; (v) opportunities for better breed improvement and selection; and (vi) reducing risk through the installation of an early warning system to benefit pasture communities.

In addition approximately 300 women would benefit from involvement in milk value chain business groups and additional income generation activities. More than 90% of Project costs would go directly to Project beneficiaries, with over 70% of total Project investment provided directly to beneficiaries in the form of matching grants.

Logical Framework

Results Hierarchy	Indicators	Means for Verification	Risks (R) & Assumptions (A)
Goal. Contribute to the reduction in poverty and enhanced economic growth in pasture communities	<ol style="list-style-type: none"> 95 000 households (25% of the targeted population) with additional improvement in household assets ownership index 25% of targeted population with increased climate resilience (ASAP) 10% reduction in the prevalence of child malnutrition 	<p>Quantitative baseline, mid-term review, project completion survey. Health statistics. Studies to complement indicator based data</p>	<p>(A) Political stability and conducive macro-economic framework (R) Influence of overall economic development concealing project achievements</p>
Development Objective. Improved livestock productivity and enhanced climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers	<ol style="list-style-type: none"> The value of livestock and livestock products sold by participating households has increased by an average of 15%, compared with the pre-project level of sales (baseline survey). 15% of poor households have improved nutrition and food security from increased consumption of meat and dairy products 	<p>Baseline, mid-term, completion surveys Financial records of project Enterprise groups Qualitative studies</p>	<p>(A) A sound use of climate change vulnerability assessment informs and drives adaptation work (R) Elite capture of a disproportionate amount of the gains from increased production and local level conversion of animal, milk and meat surpluses sold on the market and to processors</p>
Component 1. Community Based Pasture Management and Vulnerability Reduction			
Outcome 1. More productive and climate resilient pastures, and increased supplementary feed available to community livestock	<ol style="list-style-type: none"> 25% increase in average milk yields and 15% increase in average weight of cattle, sheep and goats sold in local markets 225 mt incremental of high quality/cleaned barley and 45 000 mt fodder are available in project communities by the end of the project period (assuming a 40% barley/60% fodder) 20% reduction in mortality of animals caused by disasters (ASAP) 	<p>Project M&E records National, oblast and rayon statistics and inventories Policy documents, laws, strategies</p>	<p>(A) Adaptation measures are economically successful and sustainable, and supported by the local communities (A) Key concerned stakeholders have the capacity to plan, design and implement required adaptation measures (R) Livestock producers do not respect the 'carrying capacity' of the assigned pastures resulting in a degradation of the natural grass cover hence productivity declines</p>
Output 1.1 Climate risk-mitigation pasture and animal health management plans incorporating needs and priorities of poor and women	<ol style="list-style-type: none"> 190 approved pasture management and animal health plans in the Project area effectively integrating climate risk mitigation and adaptation measures (ASAP); Disputes regarding access to pastures reduced by 30% Increase in pasture fees collected by 20% by the end of the Project 	<p>Project M&E records National, oblast and rayon statistics and inventories Baseline reports and pasture productivity records</p>	<p>(A) PCs are implementing Plans in a timely and efficient manner (A) Effective collaboration between project team, Ministry of Emergencies, and Hydromet (R) Livestock producers do not pay pasture fees in full reducing capacity of PCs to operate effectively. (R) Assignment of pasture to livestock producers generates conflicts which negatively impacts on</p>

				their productive use (R) Entrenched gender inequalities and lack of women's participation in pasture committees
Output 1.2 Resilient and sustainable investments prioritized in community pasture management and animal health plans completed and functioning	<ol style="list-style-type: none"> 648 000 men and women (30% of the targeted population) have access to infrastructure (water; shelter; storage; pasture connectivity roads) that is climate resilient and environmentally sound (ASAP) 17 000 ha of pasture is rehabilitated through eco-system restoration approaches (ASAP) 	Project M&E records Baseline reports and pasture productivity records		(A) Effective and timely technical assistance secured for investment (R) The project fails to capture the interest of local communities (R) Poor maintenance of CPMP investments results in reduced benefits to the livestock farmers
Output 1.3 Institutions involved in pasture management are strengthened and have capacity to integrate climate risk management into management plans and policy making	<ol style="list-style-type: none"> 315 Pasture Users' Unions (PUUs) benefiting from a functional early warning system for extreme climate events hazards (heat and cold waves, floods, frost and drought) (ASAP) 	Project M&E records Records of policy and advocacy initiatives Knowledge products created by the project Scientific papers Media articles and footage		(A) Cross-sectorial cooperation between MoAM, State Agency for Environmental Protection, Forestry, Ministry of Emergencies and civil society (A) Capacity in place in research and academic institutions (Kyrgyz University, University of Central Asia etc.) (R) Lack of funds or capacity for research work
Component 2. Animal Health and Production Services				
Outcome 2. Healthier livestock with lower levels of mortality	<ol style="list-style-type: none"> Livestock mortality rates in the project area reduced by 2% 80% of livestock farmer households have reductions in their animal mortality 	State Inspectorate for Veterinary and Phytosanitary Security (SIVPhS) reports Project M&E record		(A) Effective cooperation between community vets and livestock farmers/animal health committees can be ensured
Output 2.1 Community vets provide animal health and production services on a sustainable basis	<ol style="list-style-type: none"> 380 CVs received training 380 veterinary packages provided to CVs 75 AI businesses being operated by CVs by the end of the project 	SIVPhS reports Project M&E record		(A) Sufficient number of vets will find the project veterinary package attractive and financially viable (R) Livestock farmers' ability/willingness to pay for vet services insufficient to ensure vets are financially sustainable
Output 2.2 Animal health committees providing support to Pasture Committees on animal health concerns	<ol style="list-style-type: none"> 190 Animal Health Sub-Committees of Pasture Committees formed and trained 	Project M&E record Project M&E records		(A) Livestock farmers will see the benefits in a collective approach to animal health
Output 2.3 Educational support for animal health services operating more efficiently	<ol style="list-style-type: none"> 120 new vets entering veterinary practice and 60 CVs upgrading their skills 	Kyrgyz Agrarian University annual statistics		(A) Students will find veterinary practice an attractive career opportunity

Component 3 Diversification and Market/Value Chain Initiatives

Outcome 3. Income from additional income generation activities benefits communities prone to climate change	1. Beneficiaries' household income increased at least by 20% from additional income activities (ASAP)	Project M&E records GoK statistics and records	(A) Local households are willing to engage in income diversification and improvement and strengthening of milk value chain
	2. 25 partnerships between farmer groups and processors/market intermediaries formed		(R) Weak market linkages and exploitative markets/milk processors constrain expansion of production to meet market demand
Output 3.1 Higher quality and volumes of milk available for assured markets	1. 10 milk collection/cooling centres established and 15 women's processing groups operating in the Project area	Project M&E records GoK statistics and records	(R) Contractual obligations are not fully observed and relationships break down
	2. Price per litre of milk gained by producer increases by 15%		(R) Continued closure of export markets
	3. Value added in milk improves by 20%		constrains demand for milk and dairy products
Output 3.2 Additional income-generating activities supported to enhance risk-coping mechanisms	1. 25 additional economic activities groups established, with at least 40% of them being women led groups	Project M&E records GoK statistics and records	(A) Economic diversification options are attractive to improve livelihoods and economy of smallholders
	2. 25 grants for economic diversification disbursed to new enterprises established, with at least 40% of grants to women groups		

Whenever relevant, the indicators will be disaggregated by gender

I. Strategic context and rationale

A. Country and rural development context

Country and economy

1. The Kyrgyz Republic is a mountainous, landlocked country of 198,500 km² bordering Kazakhstan, Uzbekistan, Tajikistan and China. Nearly half of the country's total area – some nine million hectares – is pastureland, which plays a key role in the country's economy, society, and culture. The population of the Kyrgyz Republic is 5.5 million of which 65% live in rural areas and depend predominantly on agriculture and livestock, but remittances and welfare also play an important role as an income supplement. Life expectancy for men is 65 years and for women 73 years. In 2011, the average household size was 4.9 members with rural households being larger than urban (5.3 versus 4.0 members)¹. With an average GDP per capita of US\$ 864, the Kyrgyz Republic is classified as a low-income country².

2. Political instability in the Kyrgyz Republic in 2005 and 2010 had a negative impact on economic growth. While GDP growth averaged 5% between 2003 and 2010, GDP shrank by 2% and 1.4% in 2005 and 2010 respectively³. With improvements in the political and security situation, the Kyrgyz economy recovered from recession, experiencing broad-based growth of 5.7 percent in 2011 which contracted, however, to 0.9 percent in 2012. Inflation also went down from 19.2% in 2010 to 5.7 percent in December 2011 and to 2.7 percent in 2012. EIU's estimates are that in 2013 inflation would be around 6.5% and 7.5% in 2014.

Rural development and agriculture

3. Although 65% of the population is rural, and 31% of the total workforce works in the agriculture sector, agriculture contributes only 21% of total GDP – down from 34% in 2002. Despite its declining share of GDP, agriculture and livestock remain the backbone of the economy, providing substantial employment, playing critical roles in both household food security and consumer price stability, and as a leading source of exports. The continuing decline in agriculture's contribution to GDP indicates that efficiency in the sector is low. With livestock contributing almost half of agriculture's GDP, there are clearly inefficiencies in the livestock sub-sector as well.

4. The rural population is heavily dependent on the productivity and conservation of pastures – both as a source of income and as a social safety net for poor households. Future additional agricultural growth and gains in rural incomes will depend greatly on the efficient use of pasture resources. Pasture conditions have deteriorated during the Soviet time with the extremely intensive use of pastures, and then during the recent past, with village and close-in (winter) pastures being severely overused and degraded, while the more remote summer pastures have been underutilized as a result of poor access often caused by deteriorating infrastructure. Average degradation of pastures has reached 49% with more than 70% of winter pasture areas being degraded according to the data of the Kyrgyz Ministry of Agriculture and Melioration. Compounding this, major diseases, such as brucellosis, echinococcosis and foot-and-mouth disease as well as parasites are widespread. The health of animals has deteriorated with the reduction in veterinary services from Soviet times and there is now a considerably reduced veterinary service, though there are attempts to strengthen the service, primarily through support for private vets and by building up the capacity of community vets.

5. Pasture productivity, hay yields, and fodder crops are strongly influenced by climate conditions. The UNFCCC projects that grassland productivity will decline in the semi-arid and arid regions of Central Asia by as much as 40-90% for an increase in temperature of 2-3°C combined with reduced summer precipitation. While warming temperatures will result in a longer growing season that may

¹ WFP – "Follow Up Emergency Food Security Assessment in the Kyrgyz Republic". August 2011.

² Below US\$ 1,005

³ In both 2005 and 2010 Governments were overthrown in popular revolutions.

benefit certain plants and fodder crops, increased drought and precipitation variability are likely to negatively affect pastures and rain-fed crops in particular (Tebaldi et al. 2006). Additionally, increased heavy rain on bare ground is likely to cause higher levels of soil loss. Decreased pasture productivity, heat stress, and reduced access to water could cause a reduction in livestock milk production (Cruz et al. 2007). The drought-induced lack of pasture and fodder may lead to overgrazing, animal death, or force livestock owners to destock herds they are unable to feed, usually at low prices.

6. A Pasture Law, which was adopted in January 2009, has been a pivotal piece of legislation for the development of the livestock sector. It reconnected management of rangeland ecosystem - summer, spring/autumn and winter pastures, provided more equitable allocation of pasture rights, provided a mechanism whereby stocking rates can be better aligned with pasture carry capacity and was expected to considerably increase generation of revenues for investment in pastures, as well as tax revenues. The key elements are: (i) viewing natural pasture as an integrated ecosystem, which should not be fragmented in management and in use and be treated as a whole; (ii) transfer of authority for pasture management to the lowest administration level of *Aiyl Okmotu*; (iii) delegation of authority for pasture management from *Aiyl Okmotu* to Pasture Users' Unions and their executive bodies, Pasture Committees (PCs); (iv) demarcation and legal registration of the boundaries of pastures to be managed by each PC; (v) more equitable access of pasture rights through broad based representation of all types of pasture users; (vi) compulsory preparation of community pasture management plans by PCs; (vii) allocation of pasture use rights through pasture tickets which determine the number of animal grazing days and grazing routes; (viii) collection of a pasture use fee, animal health charge and land tax by the PC; and (ix) setting sustainable pasture use fees.

7. Another important facet of recent livestock development has been the implementation of a number of effective livestock development projects. Notably the nation-wide Agricultural Investment Services Project (AISP), which is co-financed by the World Bank, IFAD and EU, has made important improvements both in terms of animal health and pasture development and has been instrumental in helping to operationalize the Pasture Law. Although much of what AISP has been doing is highly successful it needs to be expanded and built upon if it is going to have the desired impact on the sector.

8. The marketing of livestock and livestock products is the least dynamic aspect of the sector, with a strong underlying view in many communities that livestock is primarily for security and status rather than as a truly productive commercial asset. Sales of animals, milk and other products are generally limited to local markets. The export trade to Kazakhstan has been seriously constrained because of the closure of the border due to the prevalence of major livestock diseases such as brucellosis and foot and mouth disease.

9. There are a number of important lessons learned from various initiatives aimed at livestock sector development that have been instrumental in the design of the Project, particularly those coming out of AISP which provides an important foundation for LMDP-II interventions. These lessons are presented at the end of the next section on Project investment components, just prior to Section III, Project Implementation, and given in more details in Appendix 3 and in Working Paper 7.

Poverty context

10. Kyrgyz Republic is a low income country with a gross national income (GNI) per capita of USD\$ 990 in 2012 (Atlas method). By income level, it ranks as the second lowest in the Europe and Central Asia region after Tajikistan. In a result of broad post-independence economic reforms, poverty in Kyrgyzstan declined significantly and rapidly during 2000–2008, the official poverty estimates (which were based on expenditure per capita) decreased from 52% of the population in 2000 to 41% in 2003 and 32% in 2009. However, political crises and instability since 2010 has been negatively affecting economic growth and leading to drop back in population wellbeing, with poverty climbing back to 33% in 2010, 37% in 2011 and 38% in 2012. The extreme poverty rates have risen by 2.2 percentage

points compared to 2009 and reached the level of 5.3 percent in 2010, then dropped slightly to 4.5 percent in 2011⁴.

11. The UNDP Human Development Index (2011) for the Kyrgyz Republic is 0.615, ranking it in 126th place out of 187 countries. The Kyrgyz Republic is classified as a Low-Income Food-Deficit Country as it depends on wheat imports to cover about one-quarter of its consumption requirements. Poverty is broadest and most severe in rural and mountainous regions. In 2012, Jalalabad, Osh, Naryn, Talas, Batken and Issyk-Kul oblasts had the greatest concentrations of poverty with 56%, 51%, 40%, 40% and 28% respectively – compared to the national average of 38%. Similarly, the incidence of extreme poverty in these six oblasts was 14.1%, 2.3%, 2.5%, 0.9% and 0.1% respectively – compared to the national average of 4.4%. Also, inequality is increasing, particularly in rural populations, and food insecurity is a growing problem. Severely food insecure households spent almost half of their budget on food, affecting their ability to pay for other essential needs, including agricultural and livestock inputs.

12. Individual households have developed strategies to address their poverty – traditionally involving the ownership of livestock but more recently by having family members working in neighbouring countries like Kazakhstan or Russia. With increasing migration in search of work, the prevalence of women-headed households has been increasing, with the percent reported by WFP having risen to 32% in 2011. In agricultural/livestock areas these households are often at a disadvantage due to shortage of labour.

Climate change and Vulnerability Reduction

13. The Second National Communication (SNC) of the Kyrgyz Republic to the UNFCCC (2009) acknowledges that the country will be increasingly and strongly affected by climate change. Although the low Global Climate Models (GCM) resolution is a major issue in the forecast of climate change and its impact due to the complex relief and geography of Kyrgyzstan and its sharp altitude gradients, the SNC draws a set of conclusions on the evolution of climate in Kyrgyzstan, and performs an assessment of the sectors considered most vulnerable to climate change, which include water, agriculture and livestock and human health. Research conducted during the preparation of the SNC showed that over the last century the air temperature of the territory of the Kyrgyz Republic increased by 0,8°C. The GCM used by IPCC indicate that Central Asia is expected to experience an increase in mean annual temperature on average of 2°C by 2020 and 4/5°C by 2100. As for precipitation, estimates foresee local increase and decrease in the different parts of the country in the short term, with general, sharp decrease after 2030-2040. Overall, an increase in winter precipitation and a decrease in summer precipitation are projected for Central Asia. The model also predicts a decrease in annual runoff of 12% by 2020, with a potential three-fold increase by 2050. A thorough analysis of climate change, pastures and livestock is provided in Working Paper 3.

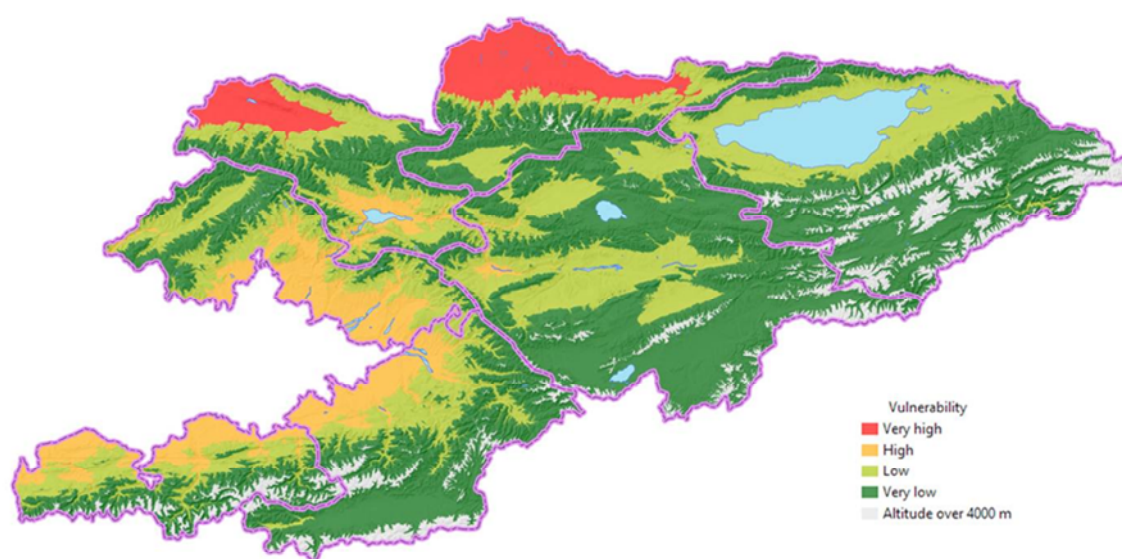
14. The geography and topography of Kyrgyzstan make it one of the most hazard-prone countries in Central Asia. Hazards such as drought, land and mudslides, floods, and river erosion are all common occurrences. The vast majority of the population lives in the valleys and foothills of the mountains, where vulnerability to these processes is particularly high. According to the World Bank Disaster Risk Management Programmes for Priority Countries (2011), destruction and loss from natural disasters totals up an average of US\$ 30-35 million per year in the Kyrgyz Republic

15. With the objective to inform the Project development phase and provide the needed scientific ground to the detailed design, IFAD undertook a study “Climate Change Impact on Pastures and Livestock in Kyrgyzstan” during the development phase of the LMDP-II. Using GIS modelling, the study performed an analysis of current climate risks and projected climate change impacts on pasture and livestock management in Kyrgyzstan. The analysis was performed according to three different altitudinal zones - below 1,500M; 1,500 to 2,500M; above 2,500M – which largely correspond to the location of winter, spring/autumn, and summer pasture. The study provided the following outputs:

⁴ Women And Men In The Kyrgyz Republic, 2007-2011 Compendium of Gender Disaggregated Statistics. National Statistical Committee of the Kyrgyz Republic

- A set of maps featuring forecasted changes in temperature and rainfall, and pastures and livestock vulnerability maps with a preliminary assessment of the locations within Kyrgyzstan that are particularly vulnerable under present climate variability and projected climate change, prioritising geographic areas for future interventions;
- A technical report explaining the findings, including key data sources, modelling assumptions, consultations undertaken;
- A set of preliminary recommendations on the proposed measures to decrease the vulnerability of pastures and pasture-dependant livelihoods in rural and mountain communities.

MAP ON LEVELS OF VULNERABILITY TO CLIMATE-CHANGE.



16. A full version of the study “Climate Change Impact on Pasture and Livestock Systems in Kyrgyzstan is available in Working Paper 6.

B. Rationale

17. A number of programmes and projects such as AISP have demonstrated that substantial improvements can be made in the livestock sector, with the right combination of activities and incentives. There is a strong need to consolidate and scale up the work of AISP, expanding the work to areas such as the preparation and delivery of animal health plans and winter feeding plans, the investment in a range of infrastructure and other activities that will unlock the potential of the pastures and livestock, and develop links to the market so as to increase the capacity of the sector to improve the economy of livestock producer households – both for women and men.

18. The close link between livestock productivity and the rational and efficient use of pastures requires a concurrent focus on the pasture/natural resource management aspects of livestock production. This in turn requires an effort to mainstream climate change adaptation into livestock and pasture management given the fact that this sector is extremely vulnerable (IFAD Vulnerability Assessment, 2013). In spite of widespread evidence that climate change-related hazards are increasingly hitting the livestock sector, the response of the international community and climate finance has so far been mostly limited to pilot initiatives. There is thus a strong argument for LMDP-II to benefit from the ASAP.

19. The Project is strongly aligned with, and contributes to the priorities of the Kyrgyz Republic’s SNC to UNFCCC, which identifies agriculture and livestock as one of the four most vulnerable areas to climate change. The Project is also aligned with other relevant national policy documents and

initiatives, including: the Kyrgyz Republic's Strategy on Adaptation to Climate Change till 2020 (2013) and the National Strategy for Sustainable Development 2013-2017.

20. The Project builds on the past and on-going experiences and policies of other international agencies and major stakeholders, including the GEF/UNDP project "Demonstrating Sustainable Mountain Pasture Management in the Suusamyr Valley, Kyrgyzstan", GIZ's "Sustainable pasture management in Central Asia" and "Sustainable use of natural resources in Central Asia" projects, and the "Mountain Societies Development Support Programme" of the Aga Khan Foundation, amongst others. During implementation, the Project will actively seek synergies and complementarities with these and other agencies involved in livestock/pasture management, climate change, and disaster risk reduction, and will establish partnerships with upcoming initiatives such as the FAO-led GEF "Sustainable management of mountainous forest and land resources under climate change conditions" and GIZ's new initiative on forest and pasture management and climate change in the Osh Oblast. Opportunities will also be identified to link up with the ongoing Joint Programme with FAO, WFP and UN Women on the Economic Empowerment of Rural Women.

II. Project description

A. Project area and target group

21. The Project area comprises three southern regions of the country - Batken, Jalalabad, and Osh. These three additional regions are contiguous to the LMDP-I regions (Naryn and Issyk-Kul) and extend to the west, bordering with Uzbekistan and Tajikistan. Together the three oblasts have a combined area of almost 80,000 km², and a total population of about 2,900,000. Most of the population is ethnic Kyrgyz with ethnic Uzbeks constituting the major part of the remaining population.

22. Livestock production is a very important economic activity of the three provinces. Combined, they account for 51 percent of the nation's cattle population, 47 percent of the sheep and goat population, and 36 percent of horses.

23. Poverty in the Kyrgyz Republic is broadest and most severe in rural and mountainous regions that are vulnerable to climate change, and the three additional oblasts are amongst the poorest in the country. Poverty in Jalalabad region is 55.7 percent, in Osh region 51.4 percent, and in Batken region it is 34.2 percent (2012). Half of the poor live in the two most populous oblasts of Osh and Jalal-Abad. The total share of the Kyrgyz Republic's population living in Osh and Jalal-Abad is 44 percent, while 54 percent of the poor live in these two southern oblasts⁵

24. The risk of poverty in the Kyrgyz Republic increases with altitude and is generally reflected in higher poverty rates in high mountainous areas. About 13 percent of the population lives in mountainous areas and half of them are poor (Poverty Mapping, WB) the investment gap in high altitude zones combined with low livestock productivity has resulted in the continuing high poverty incidence in the Project target area.

25. The livestock farming households are found within 190 Pasture Users' Union areas, which are formed at the level of the lowest administrative unit, the *Ayl Okrug*. The Pasture Committee (PC) is the executive body for the Pasture Users Union (PUU), which represents the interest of all the households that use the pasture areas. On average a PUU has a membership of 1,985 households, or about 11,200 people.

26. The Project target group has been defined as follows:

- Vulnerable households primarily among small livestock producers. They are the poorer part of the population and are vulnerable to shocks and increased natural hazards and extreme events brought by climate change (droughts, floods, frost). They tend to have a minimum livestock holding – 1-2 cows/horses and 8-10 sheep and goats and a limited area of land. A relatively high portion is food insecure for part of the year.

⁵ The Kyrgyz Republic: Poverty Profile and Overview of Living Conditions. World Bank, 2011.

- Women headed households. Due to the rise in migration of men, women headed households are becoming increasingly prevalent. They are often constrained in terms of labour to manage their livestock and carry out basic agricultural activities. Surveys have found that they have less livestock than male-headed households (41% versus 56%) and are more liable to be food insecure. On the other hand, women are often more open to the adoption of sustainable practices and the diversification of economic activities that allow a more efficient use of time and labour, creating new opportunities for smallholders.
- Other livestock producer households. These households represent the part of the PUU livestock producer households that are not classified as vulnerable but nevertheless form an important part of the project's target population. It includes families that range from those that are better off to those that do not have large livestock holdings but have a secure economy. They are not food insecure and are normally able to sell milk and animals to raise money for the household. They may have some old farm machinery, and they will often hire herders to take their animals to the summer pastures. Though difficult to estimate, they may represent about a quarter of the target population.
- Community veterinarians (CVs). While the portion that the CVs represent of the PUU/PC population is very small⁶, they are an integral and important part of the livestock producer community and an important target group for the project as they would be the focus for many of the animal health and productive initiatives of the project.

B. Development objective and impact indicators

27. The development objective is: Improved livestock productivity and enhanced climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers. The impact indicators linked to the development objective are: (i) The value of livestock and livestock products sold by participating households has increased by an average of 15%, compared with the pre-Project level of sales (baseline survey); and (ii) 15% of poor households, have improved nutrition and food security from increased consumption of meat and dairy products. The RIMS indicators linked to the Project goal, Contribute to the reduction in poverty and enhanced economic growth in pasture communities, are: 95,000 households with additional improvement in household assets ownership index; and 10% reduction in the prevalence of child malnutrition.

C. Outcomes/Components

28. The Project comprises four linked and complementary components. The first component, Community Based Pasture Management and Vulnerability Reduction, and the second component, Livestock Health and Production Services, represent 90% of Project budget and contain the funding for increasing the resilience of pasture communities and promoting better planning of pasture and animal health activities. Component 3, Diversification and Market/Value Chain Initiatives, is a small and limited intervention aimed at developing the milk value chain, build up commercial relationship between business groups in the pasture communities and the market, and promote diversification of economic activities as a means to enhance adaptation to the predicted impacts of climate change in areas where sustained income from livestock activities will be compromised. All of the activities under these components would directly benefit the Project's target groups in terms of enhancing their adaptive capacity. The fourth component provides for Project management. Detailed descriptions of each component are found in Appendix 4.

29. The component/sub-component structure of Project investments is the following:

- Component 1 – Community Based Pasture Management and Vulnerability Reduction.
- Community Risk-mitigation Pasture Management and Investments.
- Pasture Institutional Strengthening.

⁶ On average two per PC/PUU.

- Component 2 – Livestock Health and Production Services.
- Strengthening Veterinary and Community Animal Health Services.
- Animal Health Education and Capacity Building.
- Component 3 – Diversification and Market/Value Chain Initiatives.
- Component 4 – Project Management.

30. Component 1 – Community-Based Pasture Management and Vulnerability Reduction.

This component will take advantage of the conducive environment provided by the new Pasture Law, the national emergency response activities and climate change adaptation policies, and will support Pasture Users Unions (PUUs) and Pasture Committees (PCs) in the design, development and implementation of community-based pasture management plans that fully integrate animal health activities as well as adaptation and disaster risk-reduction (DRR) measures to increase the resilience of this sector to climate change. The outcome from the component would be: *More productive and resilient pastures, and increased supplementary feed available to community livestock.*

31. Sub-Component 1.1 – Community Risk-mitigation Pasture Management and Investments.

The sub-component provides for the initiatives that are required to improve the resilience and productivity, use and access to the pastures coming within 190 PCs/PUUs areas. It will provide support to PUUs/PCs in the design, development planning and implementation of risk-mitigation community-based pasture management and animal health plans that fully integrate adaptation measures to increase the resilience of this sector to climate change.

- Legal and Regulatory Reform. LMDP-I will continue providing policy and legal advice to the Pasture Department (PD) and State Agency for Environmental Protection and Forestry (SAEPF) on further advancement of pasture reform and developing legislation to support its implementation. LMDP-I through contracted local service providers will develop awareness and training materials and will train outreach organizations or individuals, who will continue delivering legal training to the PUUs on the ground. LMDP-II will complement the latter activity by providing information and training to the PUUs in Batken, Jalalabad and Osh oblasts.
- Policy Dialogue on Climate Change Adaptation. The Project intends to streamline its work, achievements and lessons learned to influence policy dialogue on climate change adaptation/mitigation, disaster risk reduction and environmental sustainability that has been triggered in the Kyrgyz Republic by a broad range of national, international, governmental and non-governmental actors. The Project will focus its policy work on supporting the PD in the development of a sectorial adaptation plan on pastures and livestock, stemming from the overall National Adaptation Strategy that is being finalized. The Project will also inform the preparation of the Third National Communication to UNFCCC, making available all the data and information included in the climate vulnerability assessment for the Kyrgyz Republic produced by IFAD during the development phase of LMDP-II (see Working Paper 6).
- Boundary Demarcation and Pasture Inventory. LMDP-I and LMDP-II will facilitate completion of demarcation of external administrative pasture boundaries of Project PUUs and digitization of these administrative pasture boundary maps. There are several PUUs which have disputes over boundaries and the Project will support them with legal and technical assistance to address the conflicts and resolve them in a participatory and transparent manner. The Project will also support defining pasture areas within administrative PUU boundaries based on participatory assessment and legal inventory. ARIS in cooperation with the PD and the State Registration Agency will develop guidelines for such legal inventory and demarcation of pasture areas and test the approach in some AOs. Guidelines, based on testing, will be used to contract inventory/GIS service provider/s to undertake such inventory and digitalization of pasture areas for all Project PUUs. Digitized maps will be maintained at the PD, the SAEPP, and will be provided to the PUUs to be used as a tool for pasture assessment and management.

- Upgrading Community Pasture Management Plans (CPMPs). CPMPs that already exist in most PCs would need to be improved to effectively integrate animal health planning, improved winter feeding, climate adaptation measures and to determine risk-mitigation priorities for investments. In view of this, the Project teams will facilitate assessment of priorities for investments in the PUU areas with consideration of climate change adaptation needs and animal health planning. This reassessment is made possible by the considerably expanded size of the matching grants funds available under LMDP-I and LMDP-II compared to those within AISP. As part of this process, training and capacity building would be provided to the PC and PUU members to carry out the assessment and planning efficiently, ensuring the active participation of the more vulnerable households and involvement of women in planning and decision making. The activity includes support provided by ARIS to facilitate the process and help in investment planning.
- CPMP Investment Projects. This will support priority investment for implementation of the risk mitigation pasture management plans, building on the effective management model established in previous IFAD interventions and based on the close cooperation between the APIU and ARIS. The total funding provided to finance the community/PMP investment projects is about US\$ 25 million, comprising 75% matching grant and 25% community contribution in kind and cash, with the major part expected to come in the form of labour and local materials. The grants to the PUUs would be channelled through ARIS in line with their design, i.e. type, phasing and implementation, determined by the respective CPMPs. The PUUs would be expected to commit to the implementation and the achievement of the targets by signed agreements, which would envisage a phased financing of the CPMPs against the clearly identifiable milestone indicators. Subject to the PUU's agreement and priorities, a block grant will be provided to each PUU for the implementation of its plan. The exact amount of each grant would be linked to the AO population, PUU pasture area, level of poverty, livestock number, and performance of PUU and PC evaluated against agreed upon indicators, such as the rate of collection of pasture use fees, and the PC's governance and accountability arrangements. . In order to facilitate the adoption of adaptation and risk reduction measures in the CPMPs, a pre-defined list of eligible options for investment will be put together, that can strengthen the adaptive management of pastures and promote a more strategic and sustainable use of key resources such as water, soil, fodder etc. These options will include, inter alia:
 - Restoration of degraded pastures through rotation and fencing, and improvement of vegetation cover/pasture yield/ha with highly diverse native plant species/genetic varieties (grasses, leguminous plants, small bushes), tolerant to climate constraints (e.g. summer drought);
 - Infrastructure that allow/facilitate the revival of traditional management (transhumance), which is critical to adapt the seasonal livestock pressure on winter and summer pastures to climate conditions (road improvement, connectivity bridges, stock watering points, etc);
 - Water management measures to favour pasture resilience through increased water retention and regulation and to improve water balance and decrease evapotranspiration in areas (especially at low altitude) where hotter/prolonged summer can increase the threat of drought (fences for shade, measures to retain water in soil, drainage, riverine and water spring restoration, protection and shade through reforestation in water points);
 - Measures to prevent soil erosion, mudslides and floods, including the plantation of bushes and trees that, besides being effective against soil erosion, can act as a barrier against storms and wind, and serve as a possible source of by-products (fruit, berries, wood);
 - Infrastructure to enhance the value of spring/autumn pastures in view of the longer grazing season allowed by increased temperatures and shorter winter season (construction of livestock shelters and upgrading of facilities for herders);

- Agricultural machinery to produce/harvest/store fodder (grass cutters, hay making machines, silage choppers, etc.) to increase the availability of fodder and create reserves for the long winter period;
- Restoration of riverine vegetation (better regulation of water, barrier against floods, improve water quality, source of fodder).. Whenever possible, these measures would be carried out with use of adapted technology that allows energy saving and easy maintenance and replication (i.e. the thermo-isolation of shelters and stabling structures using straw was successfully tested in previous projects). The Project, through a number of restrictions and safeguards, will make sure that CPMPs include a balanced mix of investment activities, and that they properly capture the need for specific interventions on climate change adaptation and disaster risk reduction. The outcomes and recommendations of the vulnerability risk assessment carried out by IFAD during the Project development phase will be instrumental in this respect, as they will be used to raise awareness and enhance understanding at the PUU level, thanks to proper training and briefing sessions that will be organised by ARIS prior to the start of the participatory design process leading to the formulation of the CPMPs.
- Community Fodder Seed Programme. Like with LMDP-I, the Project will collaborate with the National Federation of Community Seed Funds (NFCSF) to establish about 90 Community Seed Funds (CSFs) for winter fodder crops in Batken, Jalalabad and Osh oblasts.

32. **Sub-Component 1.2: Pasture Institutional Strengthening** will mainly expand the activities initiated under LMDP-I to the Project area, yet in addition it would integrate climate change adaptation throughout all the proposed activities. This investment would primarily focus on the following national institutions that support pasture development: Pasture Department, Republican Association of Pasture Users' Unions, Kyrgyz National Agrarian University, and the Kyrgyz Livestock and Pasture Research Institute. In addition, an effective Early Warning System (EWS) for floods, frost and drought would be established under the sub-component.

- Pasture Department. The Project will continue to provide technical guidance to the PD in assessing the health of pastures and monitoring the performance of PCs, including: training oblast level PD staff, young professionals and providing assistance on more detailed research on future impacts of climate change at local levels (for example, identifying areas more affected by future droughts, production of future wind scenarios, studies on future climate variability, etc.). The Project will fund the employment of about 30 young professionals – university graduates who will work in the Department for 1-2 years to gain field experience. The capacity of the PD to effectively deal with climate adaptation and disaster risk reduction related to pasture management will be enhanced through a specific capacity building programme including training of staff at both central and rayon level, study tours and technical assistance on resilient pasture management, monitoring, demarcation and sustainability issues. The activity will in addition provide for public awareness campaigns on pasture management. The Project would also continue supporting the PD in monitoring CPMPs' performance through contracting the teams of independent evaluators.
- Republican Association of Pasture Users' Unions. The Project will continue support the Association initiated under LMDP-I. The Project would strengthen 34 rayon level Pasture Users' Associations located in the LMPD/LMDP II area and the national level association. The support would be in form of equipment, technical assistance, training and covering operational costs on a downscaling basis.
- Kyrgyz National Agrarian University. In addition to the activities included in LMDP-I, the Project will provide technical guidance to the Agrarian University in upgrading and delivering modules on risk-mitigation in pasture management, which will be incorporated into the existing Bachelor degree curricula on agriculture. The modules will include climate proofing, adaptation and risk reduction related to pasture management, through the involvement of

national and international research institutions (including UCA, ICARDA, CAREC etc.) active in the field of climate adaptation and pastures.

- Kyrgyz Livestock and Pasture Research Institute. In addition to the activities envisaged under LMDP-I, the Project will link climate change adaptation and disaster risk reduction to research leading to the development of climate-focused research plans that will allow the implementation of field projects aimed at improving resilience of the sector. As with LMDP-I, the support will include two interventions: (i) Review of current research plans and financing and development of long-term, costed research plans; and (ii) Implementation of selected pasture and livestock research projects.
- Early Warning System (EWS) for pastures and livestock will provide policymakers, technicians, pasture committees and farmers with the most up-to-date and accurate information available on meteorological-related risks. The proposed EWS would comprise of the following elements: (i) an Automated Weather Forecasting System (AWFS); (ii) integrated models of derived variables (DVM); and (iii) a GIS (Geographical Information System) platform to adapt the information to the user's needs and to facilitate its management. This will be coupled with a capacity building programme to prepare institutions and beneficiaries in the implementation and use of the EWS. The AWFS will be hosted by the Hydromet Agency of the Kyrgyz Republic. The Project will count on the existing experience of the Hydrology and Water Resources Department of the Slavic University in applying hydrological models, to link them to the EWS thus providing timely information on water balances and hazards (river floods, flash floods) and forecasting their effects on pasture systems. Assessment of training needs will be undertaken for operationalizing and managing the AWFS, and adequate training would be provided. The GIS platform, including derived variable models, would be hosted at the PD, which would lead on its development, participating in the definition of content and prioritizing variables to be mapped. This also would be coupled with the required training.

33. **Component 2 – Livestock Health and Production Services.** The Programme will aim at establishing an effective private veterinary service through: (i) additional support and training to ensure that Community Vets (CVs) are self-sufficient and delivering an effective demand-driven service; (ii) the promotion of the profession and incentives to ensure young people are motivated to take up the work of private veterinarians as a viable career in the current economy; and (iii) supporting the transition of CVs from service providers for basic animal health prevention to more holistic advisers on both veterinary aspects and production management practices. Based on the lessons learned from previous project interventions and an evolving situational analysis as well as taking into account the coverage by the WB-funded PMIP, the Project would endeavour to address current constraints through a set of specific activities built into two sub-components: (i) Strengthening Veterinary and Community Animal Health Services, and (ii) Animal Health Education and Capacity Building. The first sub-component would be in principle a geographical expansion of LMDP-I to Batken, Jalalabad and Osh oblasts, thus include mainly the community level activities of LMDP-I in these regions, while the second sub-component envisages some supplementary national level activities to top-up the LMDP-I allocations to ensure the expanded geographical area. The outcome of Component 2 would be: *Healthier livestock with lower levels of mortality*.

34. **Sub-Component 2.1: Strengthening Veterinary and Community Animal Health Services.** The activities planned under this sub-component are: (i) Establishing and Training Animal Health Sub-Committees, and (ii) Community Veterinarian Capacity Building.

- Establishing and Training Animal Health Sub-Committees. The Project will support the establishment of 190 animal health sub-committees (AHSCs) as sub-committees of the PCs in the Project area. The AHSCs will coordinate provision of herd/flock health and production services to ensure steady gains in livestock productivity. The three key investments under this activity are: (i) upgrading AHSC guidelines and training materials (to mainly include CCA issues), (ii) AHSC mobilisation/facilitation, and (iii) AHSC strengthening.

- Community Veterinarian Capacity Building. The Project will continue the support to 380 CVs in the Project area, who meet the following criteria: (i) registered with the Veterinary Chamber, (ii) under contract with an AHSC, and (iii) a member of the rayon level veterinary association. The Project will promote CVs as the primary service providers for comprehensive preventative herd/flock health and productivity improvement programme, including: vaccination contracts with the AHSC, general animal health and production extension support, advising farmers on better animal management and feeding, selling drugs and other animal remedies, and facilitating the take-up of Artificial Insemination. The activity focuses particularly on technical and business training of the CVs coupled by the provision of veterinary packages containing essential equipment, AI equipment (upon request), veterinary drugs and medications, with the CVs contributing at least 50% of the cost. Also included is a limited support for private veterinarian rayon associations and capacity building for the Veterinary Chamber.

35. **Sub-Component 2.2: Animal Health Education and Capacity Building**

- Updating Veterinary Education Programme. The capacity building and training programmes under this sub-component would be linked to a needs assessments survey to identify knowledge gaps and understanding of animal health, feeds, feeding and production management. It is envisaged that LMDP-I would elaborate a comprehensive training and capacity building programme which would include development of materials to address the issues identified in the survey. This Project makes a limited allocation for updating the above programme.
- Veterinary Education and Training. Like with LMDP-I, the Project would continue working closely with the Kyrgyz National Agrarian University (KNAU) to ensure the preparation of highly qualified graduates.
- Student Incentive Programme. The Project would include a variety of initiatives to provide incentives for students to enter the veterinary faculty and ultimately become a CV.
- Professional Development and Training. As with LMDP-I, the Project would continue supporting the professional development and continuing education programme that would be institutionalized in the veterinary faculty.
- Kyrgyz Scientific-Research Veterinary Institute. Like with LMDP-I, the Project will support the updating of a long-term research plan, implementation of selected research projects, and international training courses for young professionals.

36. **Component 3 – Diversification and Market/Value Initiatives.** The rationale for the third component is the need to promote diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. The Project will encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women – can build upon, improve, and expand existing value chains and develop additional sources of income, becoming service providers for the wider community. The objective of the component is to enable livestock producers in the Project area to expand their milk production to meet market demand and thereby achieve improved returns from their dairy animals as well as introduce a set of additional viable income-generating activities that would increase the resilience of poor vulnerable groups. The approach is to work, on a relatively limited scale, with groups of livestock producers and communities within the PUUs and to facilitate their development as business/market groups. The aim is to pilot through commercial and realistic operations how best to implement such interventions as a basis for future scaling up. The outcome of Component 3 would be: *Income from additional income generation activities benefits communities prone to climate change.*

37. As with LMDP-I, this component would mainly focus on the milk value chain, with the aim of adding value to the milk produced, by supporting two initiatives: (i) establishment of milk collection and cooling centres, through a partnership arrangement with milk processing plants; and (ii) support to women's groups to set up small-scale milk processing facilities focused primarily on high quality traditional products.

38. In addition to the above, the component includes a provision of support to livelihood diversification as a means of adaptation, and support to innovative additional income-generation activities in cooperation with private and/or public enterprise partners, and mainly through emphasis on women. The main identified investments will preliminary include: (i) solar greenhouses for the production of vegetable and horticulture products, which would meet a growing need coming not only from the communities themselves, but also from the fast-growing national and international tourism sector; and (ii) multipurpose solar dryers or electricity-powered dryers for the drying of fruits, herbs, and aromatic plants. To define further income-diversification activities, the Project would benefit, at mid-term, from an exercise that would assess the introduced pilot activities, and would also look at additional income diversification activities that could be supported.

39. **Component 4. Project Management.** The component provides for the overall management of the Project by the Agricultural Projects Implementation Unit (APIU) under the Kyrgyz Republic Ministry of Agriculture and Melioration (MoAM), generally referred to as the Ministry of Agriculture. The component provides for the operation of the APIU Project management office in Bishkek and includes financing for upgrading the office equipment, mobility, communications, staffing and other operating costs. A separate provision has been made for the monitoring and evaluation of the Project and additional support provided for knowledge management. These activities complement the ones envisaged under LMDP-I, thus the Project management costs, including the provision made for M&E, represent only about 2% of total Project costs.

40. While the APIU would have overall responsibility for implementation of the Project, ARIS would be responsible for implementation of all those aspects that involve communities and the management of Project grants. ARIS would have a considerable degree of autonomy in managing these Project activities and would have its own budget and financial arrangements with IFAD. Component 4 provides only for the staffing and operation of the APIU, not for ARIS, which is provided for under the Sub-Component "Community Risk-mitigation Pasture Management and Investments".

41. **Linkages among components.** There is considerable complementarity among the Project components as noted within the component descriptions. They form a coherent and mutually supporting framework focused on improving the livestock and livelihoods of livestock producers in the 190 PCs/PUUs as brought out under a section that follows entitled 'Approach'. The full integration of climate adaptation and vulnerability reduction measures strengthens the long-term sustainability of this approach and provides a safety net that multiplies the opportunities for achieving an enduring improvement of the livelihoods of livestock producers' communities.

D. Lessons learned and adherence to IFAD policies

42. The experience of other interventions, in particularly AISP, upon which many of the activities are based, has produced important lessons learned for the design of LMDP-II.

43. Lessons have been learned with respect to the general sector implementation environment as well as with respect to specific issues in the livestock sector.

44. Regarding the general sector implementation environment four salient lessons have been learned:

- The complex problems facing agriculture and rural development and poverty reduction in the Kyrgyz Republic make for an environment where a single intervention is unlikely to deliver lasting results. This is even more true in the livestock sector where for example progress made in animal health is quickly lost if momentum is not kept up. Long-term perspective and commitments are required to achieve long-term impact and sustainability.
- Frequent re-assignment (separation, amalgamation, and re-separation) of institutional responsibilities for agriculture, irrigation/water, agricultural research and agro-processing without long term vision has created a somewhat unstable policy environment that makes a programmatic approach all-important.

- All rural residents are stakeholders in pasture management, given the multiple and often overlapping uses of pasture resources. In spite of the inherent potential for social conflict, rural communities, adequately empowered and supported, have proved to be conscientious and effective managers of common resources.
 - It has been generally accepted that gender equity is less of an issue in the Kyrgyz Republic than many countries due to the gender-egalitarian legacy of the Soviet system. There is, however, growing evidence that this legacy is being increasingly challenged by the re-emergence of more patriarchal traditional norms, particularly in rural areas. There is thus no room for complacency with respect to implementation-specific measures to empower women to acquire the means and ability to participate in the mainstream of economic and social development, as well as in the decisions that affect their lives and those of their families.
45. Specific lessons learned from the implementation of AISP include the following:
- The project approaches, which involve (i) promoting public service provision through public-private partnerships and (ii) increasing community involvement in the management of natural resources and public service provision, are increasingly important in an environment where there is a need for fiscal discipline and improved governance and accountability.
 - The development of legislation to overhaul the system was partially thanks to particular political circumstances, but also reflected positive home-grown experience with pasture management that reflected a decentralized approach. This approach provides a stronger basis for encouraging more environmentally sustainable practices while also maximizing the economic uses of pasture lands for grazing and for secondary uses. The basic institutional set-up has been put in place and is showing robust signs of being effective in the Kyrgyz context, albeit with glaring capacity needs as well as weak accountability mechanisms. Improved animal health and nutrition leading to increased productivity is important in the short term. However, the factor that will drive and finance the development of the livestock sector in the longer term is the incentives provided by markets that reward quality livestock products. Providing access to these markets for the small livestock farmers is the logical extension of efforts aimed at increased livestock productivity.
 - The implementation arrangements with the APIU and ARIS have proved reliable and effective. LMDP will also involve a wider pool of national and international experts, and will build on the experience developed by partner institutions in the field of climate change adaptation and rural development, in order to meet the capacity building and technical assistance needs required to successfully implement the Project.
 - The reforms have succeeded in engaging the users of pastures in a system where they have voice and more directly benefit from management. While local communities through their pasture users' unions/associations have shown a readiness to take on the responsibility for the management of their pasture resources, few of them have from the outset the technical and managerial capacity needed for successfully shouldering those responsibilities. This is even more true where new approaches, activities and technologies for climate adaptation and vulnerability reductions are promoted and introduced. Sustained external support during the initial years is crucial for the long-term success and sustainability of the community pasture users' unions. It is important to add to these incentives more detailed technical understanding of how to manage the resource, particularly the long term costs from improper management. This requires effective capacity building which would comprehend: better connections between research and technical advances with the PUUs/PCs; development of training differentiated to different needs of PUUs/PCs, with information presented in a relevant manner; a system of efficiently renewing knowledge when there is turnover; and development of horizontal learning through exchanges and taking advantage of ICT. Specific focus areas should be: support to pasture committees with basic data (community pasture maps showing boundaries and carrying capacity, etc.), specific training and capacity building on climate change adaptation, coping strategies and techniques, and risk reduction, awareness building

among all pasture users, ensuring access to adequate advisory and support services for the PCs, providing initial financial support for the implementation of the pasture management plans without discouraging the achievement of financial self-sufficiency, and ensuring that the interests of all pasture users, including secondary users, are served, including empowerment for income diversification.

- An important factor for sustainability of the established pasture users' unions is clarification of the legal and policy framework of the PUUs/PCs. This work includes building in a mechanism to resolve the disputes on demarcation of pastures to be managed in a manner that stakeholders will recognize and observe. It also needs to involve the confirmation of the role of PUUs/PCs and how they relate to local governments. It should also provide for guidance and monitoring of PUUs/PCs in performing their function of pasture management, including incorporation of sustainable techniques and ultimately better outcomes in the use of pastures, with mechanisms for monitoring and redress if they are not performing their function.
- In order to be socially accepted, PUUs and PCs should be built based on genuine accountability principles. The same dynamics that can lead to elite capture, lack of inclusion, and non-responsiveness of local governments will affect the PUUs and particularly the PCs. If this occurs on a large scale, the reforms may be endangered. It is never very effective to centrally prescribe local accountability though devising mechanisms – these must depend on the social norms and participation of the persons in the localities. At the same time, ARIS's experience and other analogous community efforts demonstrate that relatively easy procedures can be incentivized and to some degree enforced: it must ensure that information relevant to persons can easily be made available and is actionable. Enforcement is also made more possible through demonstration of the operation of accountability mechanisms, such as a public accounting of allocations and receipts, through the use of mobile phones to verify the conduct of such events.
- There needs to be much better mechanisms for measuring progress and feedback on the management of pastures. Baselines and expected results should be communicated and understood. These results should then feed into the preceding three blocks of activities (policy formulation, institutional development, and quality of management). In all of these activities, it is important to maintain as much transparency as is possible to build trust in the reforms and demonstrate the impact that they are having.
- It has been recognized that, while control of animal diseases is important, vaccination and preventative interventions would remain ineffective without addressing the basic management practices related to nutrition, feeds and feeding. This is particularly true in a framework of the foreseen climate change and related ecological and environmental disruption: strengthened livestock health conditions are critical to building the resilience of the sector and minimising the risks derived by increased climate-due stress.
- It is necessary to adopt an approach to support the Community Vets (CVs) not only as service providers for basic animal health prevention and care but as the source of information in a more holistic approach to include feeds, feeding and other production management practices. Although the mobilization of private vets was initiated under AISP, the rapid decline in government field services was not anticipated and there is an urgent need to accelerate the investments and provide a viable and sustainable demand driven alternative. AISP has demonstrated the potential role for CVs to become livestock health and extension service providers and has established a basis for equitable remuneration, fee-for-service delivery systems and the willingness of farmers to pay for high quality services, which produced measurable results.
- Although considerable work has been done on the veterinary legal framework, additional work would be required to ensure the legal basis and clarification of the roles and responsibilities of private vets. In addition, the drafting of secondary legislation is required to support the new

Veterinary Law and to ensure that it is harmonized with existing laws, regulations and decrees.

46. The design of LMDP-II responds to and is fully consistent with IFAD policies and in particular supports the following:

- IFAD Strategic Framework - 2011-2015 – from among the policy goals at the programme and project level, LMDP would meet four of the six stated goals in the Strategic Framework.
- IFAD Environment and Natural Resource Management Policy – the LMDP interventions to facilitate better and more sustainable management of pasture resources would lead to a qualitative and quantitative improvement of the resource base, while the complementary strategy to develop supplementary feeding, especially improved winter feeding, would support a number of the core principles outlined in the Policy.
- IFAD Climate Change Strategy - The strong adaptation focus of the Project meets the goal of IFAD's strategy to maximize impact on rural poverty in a changing climate, supporting innovative approaches to helping smallholder producers – both women and men – build their resilience to climate change, helping smallholder farmers take advantage of available incentives and funding, and informing a more coherent dialogue on climate change, rural development, agriculture and food security. Innovation will be introduced thanks to strong investment into new actions, technologies for the climate proofing of Community Pasture Management Plans, and the design and introduction of an Early Warning System, which will decrease the rural poor's vulnerability to increasingly frequent extreme climate events (heath, cold waves, frost and drought). The Project will also enhance climate-related knowledge management by contributing to the forging of a climate change partnership between institutions, donors and practitioners at the national level, and by informing key policy processes.
- Private Sector: Deepening IFAD's engagement with the private sector. The key to the strategy adopted for Component 3 is, inter alia, the establishment of partnerships with milk processors and other market operators. This is very much in line with the IFAD policy for the private sector which stresses the need to organize 'farmers into groups and build their capacity to negotiate with private companies, by building trust among the various partners, and by supporting a better business environment where such partnerships can flourish'. By placing a strong focus on women, the Project acknowledges their role in creating and running businesses - women own between 13 and 38 per cent of enterprises worldwide - as fundamental for growth and poverty reduction. Private sector initiatives will also be encouraged in Component 1 of the Project, i.e. in the CPMP investments and strengthening private vets.
- IFAD Policy for Gender Equality and Women's Empowerment – LMDP will focus on Strategic Objective 1 (Economic Empowerment), and in order to achieve this will put in place mechanisms to achieve SO2 (Equal voice and decision-making), as well as explore what interventions may be needed under SO3 (reducing workloads) to achieve the above; this is especially appropriate in a project that prioritizes adaptation to climate change, which is widely recognized to add to women's already heavy workloads (See checklist in Annex 12).

III. Project implementation

A. Approach

47. LMDP-II is a largely a geographical expansion of the LMDP-I, from northern Naryn and Issyk-Kul oblasts to three southern oblasts of the country, namely Batken, Jalalabad, and Osh. LMDP-II also incorporates approaches and arrangements for climate change adaptation in the entire IFAD Programme thanks to the availability of Adaptation for Smallholder Agriculture Program (ASAP) financing. Thus, notwithstanding the "sequential" financing, LMDP-I, LMDP-II and the World Bank-funded Pasture Management Improvement Project (PMIP) will be implemented as one coherent,

national programme in all operational aspects, as originally envisaged when setting out to design a successor project to AISP in January 2012. A consultation between IFAD and the World Bank in the course of two joint preparation missions has confirmed the mutual intention to continue the strong partnership already developed in the past during implementation of three co-financed projects in the agricultural sector. The WB-funded PMIP will be implemented in Chuy and Talas oblasts, while some activities will be implemented at the national level. Both LMDPs and the PMIP will complement each other, specifically in terms of the implementation modalities, arrangements and Programme activities.

48. Although LMDP-I provides opportunities in terms of enhancing the way pastures are managed at the community and national level, the possible impacts of climate change were not explicitly taken into account when setting priorities for long-term investments in improving pastures and ensuring the sustainable development of this sector. LMDP-II will mainstream adaptation priorities within CPMPs and subsequent investments to enhance the resilience of communities.

49. The vulnerability assessment undertaken within the framework of LMDP-II design process has identified a preliminary set of adaptive measures to reduce climate risks for livestock and pastures and increase the resilience of smallholder herders in Kyrgyzstan. In this respect, LMDP-II will ensure that climate change adaptation priorities are integrated within the CPMPs in all the LMDP-I and LMDP-II project areas.

50. The LMDP approach is based on community-driven development to enhance adaptive capacity, reduce climate-induced risk and reduce poverty. The core of the Programme and the focus for many of the LMDP's activities is the Pasture Committee (PC), locally referred to as the *Jaiyt* Committee, and the Pasture Users Unions (PUU). These institutions are the ones that would be pivotal to organize and carry out the participatory planning process that would be the basis for refining the risk-mitigation Community Pasture Management Plans (CPMPs). These plans would involve the development of the new Animal Health Management Plan, linked to the Animal Health Sub-Committee (AHSC) of the PC, which would be established under the Programme. The plans would thus provide the basis for carrying out improvements to the pastures and management of the use of those pastures in order to help improve their sustainability and enhance their resilience. Similarly, these plans would provide the framework for improving the availability of feed, especially winter feed that would be supported by the Programme actions for production of increased quantities of fodder through the community seed fund initiative. The same planning process would be used to identify, prioritize and agree on the investment projects that would be financed by the Programme in each PC/PUU. These investments which would range from improvements in infrastructure to enhance mobility (which is essential in order to reduce pressure on pastures close to settlements) or provide water points for the animals, or provide farm investments to improve availability of feed (including storage), would complement the other initiatives that would be included in the CPMPs. These plans also provide the linkage to the national disease control and vaccination programmes that would be supported by LMDP-I. Finally, the plans would be the starting point for the identification of groups of livestock producers, both women and men that would like to start a milk collection and cooling centre or a women's milk processing facility, as well as engage in additional income activities as a means of enhancing their adaptive capacities and increasing the return to their animals and their labour.

51. Another of the pivotal elements in the Programme approach is the focus on building up the capacity and financial sustainability of the community vets (CVs), sometime referred to as 'private veterinary specialists or private vets'. The CVs are the front line for advice to and support for the livestock producers – both for veterinary advice and for production advice. They replace the old Soviet-era public veterinary service but there is still considerable effort required to not only strengthen the CVs and the services that they provide, but also to link them better with the PCs and the newly formed AHSCs. However, strengthening the current cadre of CVs is not sufficient as they are too few in number and quite a few are getting to retirement age. This is the basis for another set of Programme activities: the training and incentive programmes to get more vets, both women and men, into veterinary practice in the Programme oblasts. For the improvements contained in the CPMPs to be realized, the CVs must play an active and critical role.

B. Implementation responsibilities

52. Institutionally, in the agricultural/livestock sector in the Kyrgyz Republic, capacity has been developed both inside and outside government to implement projects such as the Agricultural Investment Services Project (AISP). There are several institutions that have been engaged in implementation of AISP and which will continue to be engaged in LMDP implementation, acting as beneficiaries and service providers at the same time. It is essential that their roles are clear and do not overlap, and their activities are well coordinated. The two major institutions that are the key to successful implementation of AISP and other projects are the Agricultural Projects Implementation Unit (APIU) under the Kyrgyz Republic Ministry of Agriculture and Melioration (MoAM), and the Community Development and Investment Agency (ARIS), a large organization with outreach on the ground that focuses particularly on community-based initiatives and has a mandate to alleviate poverty. These institutions will have the prime implementation responsibility for both LMDP-I and LMDP-II.

53. Each would have its clear areas of responsibility and each would be financially accountable for the implementation of its own activities, with the APIU having overall responsibility for Project oversight and coordination. Memoranda of Understanding (MOUs) would be drawn up between the APIU and ARIS and between the APIU and the other implementing partners for which the APIU have responsibility. These institutions are: Pasture Department (PD), State Inspectorate for Veterinary and Phytosanitary Security (SIVPSS), Kyrgyz Scientific Research Livestock and Pasture Institute (KSRLPI) often called more simply as the Kyrgyz Livestock and Pasture Research Institute (KLPR), the National Federation of Community Seed Funds (NFCSF), Kyrgyz National Agrarian University (KNAU), Kyrgyz Scientific Research Veterinary Institute (KSRVI), and the Republican Association of Pasture Users' Unions (RAPUU). Appendix 5 spells out in some detail the roles and responsibilities of each of these institutions, as well as those for APIU and ARIS. The roles and responsibilities for APIU and ARIS are summarized below:

54. **APIU.** The responsibilities of APIU are the following: (i) Overall responsibility for Project implementation, coordination, oversight and reporting to IFAD and government, including liaising closely with ARIS that would operate a relative independent series of activities but would nevertheless be accountable to the APIU as part of the Project implementation team; (ii) APIU's core responsibilities include: financial management; managing the performance of the partner national organizations; shortlisting, evaluating, contracting and managing performance of service providers⁷; overall Project monitoring and evaluation and impact surveys, and knowledge management; and reporting for all Project activities; (iii) responsibility for all national level activities including the technical and related inputs of the national level institutions to ensure that they are deployed effectively and support the implementation of the range of national level activities and complement and provide the necessary inputs into the Project's community level activities that would be the responsibility of ARIS; and (iv) regarding the working relationship with ARIS, APIU would facilitate dialogue and coordination with ARIS.

55. **ARIS.** The responsibilities of ARIS are: (i) overall responsibility for all Project implementation at the community level, focused on PCs and PUUs including the management of all Project grant funds; (ii) to coordinate and be accountable for effective performance of the combination of its own ARIS staff, contracted service providers and technical inputs from government's technical agencies in the implementation of the community focused activities; (iii) monitoring and evaluation of its own activities, assembly and dissemination of information for knowledge management and the related reporting; and (iv) financial management of those activities for which ARIS is responsible.

C. Project coordination and oversight

56. A number of already existing bodies will be used to help provide guidance and support for the Project. They include the Ministry of Agriculture Steering Committee and the ARIS Steering

⁷ Except for those that will be contracted by ARIS.

Committee. The Project would use both of these and, as and when necessary, matters concerning LMDP would be placed on the agenda of these two bodies for discussion and advice. In addition to these two bodies, a Programme-specific oversight body has been formed under LMDP-I to provide guidance for Programme management - the Project Coordination and Reference Group. It includes representation from each of the implementing agencies, representation from each of the oblast administrations, and representation from the PC level and the private sector. The body has a balance between government and civil society members. It meets semi-annually and on an ad hoc basis as required, and is an advisory, not an executive body, rather a 'sounding board' for discussion of issues that arise during implementation and for which it can provide insights and advice to Project management. It would review progress of LMDP against targets and its success in meeting the performance indicators. It would also review the progress against the annual work programme. As and when required, the Group could form smaller working groups to tackle specific issues on which the Programme needs advice. These would be temporary bodies with a specific purpose and output, which would be disbanded once they have provided the inputs required.

D. Planning, M&E, learning and knowledge management

57. **Monitoring and Evaluation.** LMDP-II will follow the system established under LMDP-I which is in turn based on the IFAD guidelines on the results based M&E system by including all the necessary corporate requirements. The M&E and KM systems will be the main learning systems for the entire LMDP. These are largely described below for the whole Programme. Details are found in Appendix 6.

58. *Project start-up activities* would include: (i) recruitment of supplementary staff and TA experts, including a climate change adaptation specialist to supplement the expertise of ARIS; (ii) updating the ongoing MOUs between key implementing partners if required; (iii) conducting a gender sensitive, livelihoods-oriented baseline survey for the entire LMPD; (iv) preparing detailed first-year Annual Work Plan and Budget including an 18-month Procurement Plan; (v) upgrading the Programme M&E system; (vi) updating the LMDP-I Implementation Manual (PIM); and (vii) Project start-up workshop.

59. *Baseline survey.* The objective of the baseline survey is to establish benchmarks for time-series comparisons between Programme beneficiaries and non-beneficiary 'control' populations. A specialised agency/service provider would be recruited to undertake the baseline survey, which will include biophysical and socio-economic baseline data. The detailed indicators for this survey would be developed by the Gender, M&E and KM team in the APIU, using the key indicators in the Logframe and RIMS Framework, including the indicators associated with ASAP which will be needed to verify impact on resilience. The details and methodology for the baseline survey and its sample size and indicators would be agreed with the APIU, ARIS and IFAD. This survey will be repeated again at the end of the Programme to help assess the impact of Programme activities, in addition to the outcome surveys that would be undertaken on annual basis.

60. *M&E system.* The proposed M&E system, and associated Management Information System (MIS), would provide comprehensive information for effective and efficient management of the Programme, assess the impact on adaptive capacity and contribute to learning from implementation experience for all stakeholders. The Programme Logframe provides an initial list of indicators to be used to track progress and assess achievements in terms of outputs and associated outcomes, as well as success in achieving the Programme's objectives and development goal. The refined and finalised indicators arising from the LMDP-I Start-up Workshop would shape the Programme's Baseline Survey. Also, the Project has allocations complimentary to LMDP-I to fund: (i) outcome surveys; (ii) mid-term review; (iii) participatory monitoring and evaluation; (iv) impact assessment; and (v) upgrading the MIS established under LMDP-I.

61. *Results oriented annual work plans and budgets.* APIU would have overall responsibility, with ARIS and the other implementing partners compiling their own AWPBs and submitting them to the APIU. The Project level AWPB covers key issues, objectives, annual work plan and budget, rationale for setting specific targets, and the planning process in a narrative text. The RIMS indicators and the ASAP indicators to monitor resilience of targeted communities to climate change are required to be

included in the AWPB as the basis for preparing the annual RIMS report, which also includes the ASAP indicators that need to be monitored separately.

62. *Outcome surveys.* In an effort to shift the focus from impact documentation at completion to outcome measurement during project implementation, projects are required to survey small sample of beneficiaries annually to: measure the positive or negative changes/outcomes taking place at the household level; provide timely performance information so that corrective actions may be taken when required; and to assess targeting efficiency.

63. *Mid-term review.* A mid-term review would be carried out at the end of the second year (third year of LMDP-I). The review would cover, among other things: (i) physical and financial progress; (ii) performance and financial management of implementing partners and TA; (iii) relevance and impact of the Programme components to livelihoods, resilience, social aspects, gender and environment; (iv) recommendations to improve expected outcomes and impact; and (v) proposals for changes in the design of components and activities to reflect the findings of the assessment of performance and impact.

64. *Programme completion survey.* To be carried out during the final year of Programme implementation, as part of the preparation of the IFAD-required Project Completion Report/Impact Assessment.

65. *Participatory Monitoring & Evaluation.* ARIS would make arrangements for participatory monitoring and evaluation of the activities under LMDP in coordination with the APIU, PCs/PUUs, the Pasture Department, Pasture User Groups, and Community Vets.

66. *Reporting and Communication.* Common reporting formats would be used whenever possible. Semi-annual and annual reports, plus RIMS Progress Reports, would be produced by the Programme.

67. *Organization of M&E.* The APIU would have overall responsibility for the M&E system, building on positive experience in managing the M&E system for AISP. Under LMPD-II an additional qualified M&E Specialist will be hired to work under the Gender, M&E and KM Manager recruited for LMDP-I. The Gender, M&E and KM team, comprising the manager and two specialists (one is already hired under LMDP-I), will assist in overseeing the collection of data, its collation and analysis, and preparation of reports for use by Programme management and other stakeholders. All implementing partners will also be required to identify case studies and beneficiary profiles which highlight the Programme's progress and impact over time. The Manager within the APIU will ensure that the Programme maintains a standardised central system to compile overall monitoring and evaluation information and conducts periodic case studies and village profiles to measure changes over time. The team will also oversee gender responsibilities and KM responsibilities. They will ensure that the M&E system and MIS is gender responsive and includes sex disaggregated data, and that the analysis is gender sensitive and inclusive. The Programme Logframe would form the basis for the overall results-based monitoring and evaluation system and comprise performance monitoring and impact assessment. The ASAP indicators would need to be monitored to verify for the impact of the activities on vulnerability reduction.

68. **Knowledge Management.** The knowledge management (KM) systems and processes would be put into place at the beginning of LMDP-I with the APIU M&E, Gender and KM team developing a KM strategy using the IFAD KM strategy as a point of reference. The strategy which would look at the three pillars of KM – 'people, processes and technology' – would include a needs assessment of the main stakeholders of the Programme. A KM Needs Assessment Matrix would be prepared in collaboration with the APIU and ARIS teams.

69. *Learning Systems.* The LMDP learning systems comprise semi-annual and annual review meetings, capturing information on progress, lessons and finding solutions for implementation constraints. Annual Programme performance reports would feed into Annual Stakeholder Review and Planning Workshops. Feedback from each workshop would be factored into the project's AWPB for

the succeeding year, thus closing the circle of participatory, demand-driven planning and implementation.

70. *Linking KM to the M&E system.* A key part of M&E is critical reflection – being able to move beyond collecting, processing and reviewing data for the purpose of project efficiency. The Programme's KM system would provide a platform where the main databases and documents are stored and information organized so that the information can be processed, lessons identified, success stories, innovations and case studies documented, and thematic papers and policy briefs prepared.

71. *Studies, Documentation and Knowledge Products.* In addition to the research component, special studies would be undertaken within the Programme cycle to understand the impact of Programme interventions on the communities, especially the smaller more vulnerable livestock producers and women. Learning notes on Programme implementation (good practices and lessons) in all sectors, also focusing on smallholder resilience, would be developed by ARIS and the relevant implementation partners. The Programme would publish a semi-annual newsletter based on good practices and human interest stories, ensuring that information assembled is gender sensitive, promotes gender justice messages and reflects the success stories related to vulnerability reduction and livelihood diversification as a means of risk management. Besides this, the Programme would also produce: pamphlets, brochures, calendars, CDs, manuals, videos and posters. The KM programme will also make use of innovate tools to share internally-generated knowledge, and to feed into the Programme cutting edge information from other experiences within and outside Kyrgyzstan. These might include study tours and "learning routes", amongst others. An assessment of the achievements, gaps and needs in knowledge management will be carried out yearly by APIU, and a work plan for the following year will be agreed and put in place. (Specific details in Appendix 6).

72. *Training and Workshops.* LMDP would carry out one KM training session per year for all key LMDP staff and organise thematic workshops to share experience and help build the capacity of the LMDP staff and enhance knowledge sharing in the Programme.

73. The Programme would increase use of ICT in its activities. Although often a challenge due to incomplete penetration, nonetheless, the Programme would use mobile technologies and cloud computing and making more extensive use of crowdsourcing both knowledge and information. Spatial analysis of remotely-sensed imagery, particularly satellite imagery, permits assessment of land use and degradation of relatively large areas and can be of great use. On a more basic level, the Programme would adopt successful horizontal learning programmes whereby participants exchange knowledge and advice by simple SMS.

E. Financial management, procurement and governance

74. The Project's financial management arrangements would build on the experience gained by the APIU and ARIS in fulfilling their responsibilities for financial management under AISP and LMDP-I. Their handling of the project accounts, audits, procurement and disbursement are considered to be satisfactory and fully consistent with the financial management rules and regulations of IFAD and the World Bank. Financial management staff of both institutions are well trained and experienced in carrying out their responsibilities.

75. *Accounts.* Responsibility for the Project accounts would rest with the APIU and ARIS. The Ministry of Finance would open and maintain two Designated Accounts in US\$ for the APIU and ARIS respectively in a commercial bank acceptable to IFAD. The Directors of APIU and ARIS would be authorised to operate these accounts. The Designated Accounts would receive funds from the IFAD Loan, IFAD Grant and ASAP Grant respectively in advance to be utilised to finance the IFAD/ASAP share of Project expenditures. In order to track the income and expenditures/transactions and to enable accurate reconciliations of the Designated Accounts, separate ledgers are set up and maintained for each financing source (IFAD Loan, IFAD Grant and ASAP Grant) by the APIU and ARIS.

76. Once the Designated Accounts have been opened, and upon the Recipient's request, the Fund shall make available one (or more) withdrawal(s) of up to US\$ 2.0 million in the aggregate (equivalent to the requirements for the first six months of implementation, i.e. the Authorised Allocation) from the Loan/Grant Accounts on behalf of the Recipient and deposit such amount into the Designated Accounts. The Fund shall replenish the Designated Accounts from time to time upon request, in accordance with Section 4.08 (Designated Account) of the General Conditions, in such minimum amounts as the Fund may specify by notice to the Recipient. Local currency Project accounts would also be opened by APIU and by ARIS to deal with KGS payments.

77. *Flow of Funds Procedures.* The flow of funds arrangements, presented in Appendix 7, show that the funds would flow from IFAD separately directly to APIU and to ARIS, with each having responsibility for managing its funds and their application as per agreed work programmes and budgets.

78. *Audit Arrangements.* The Recipient, through the APIU and ARIS, shall appoint independent auditors acceptable to IFAD, under the terms of reference cleared by IFAD. The costs associated with the auditors would be financed from the proceeds of the IFAD Grant. The contracts for the audits of the APIU and ARIS would be awarded during the first year of LMDPI implementation and thereafter, extended from year to year with the same independent auditor, subject to satisfactory performance and IFAD clearance. The auditors would give a separate opinion on the accuracy of the project financial statement, operation of the designated accounts and on the certified Statements of Expenditure (SOE) including adequacy of supporting documentation. The Auditors will also provide a 'Management Letter' addressing the adequacy of the accounting and internal control systems. The Recipient, through the APIU and ARIS, would submit the above-mentioned certified items to IFAD not later than six months after the end of the fiscal year to which they relate.

79. *Project Disbursement.* Disbursement methods used in LMDP-II would include reimbursement, direct payment and replenishment of the Designated Accounts. Conditions to be met prior to disbursement include the following: (i) preparation of the detailed AWPB for the first year of Project implementation and the 18-month Procurement Plan; and (iv) opening of the two Designated Accounts (Special Accounts) and designation of persons authorized to sign withdrawal applications in the APIU and ARIS. The financing rules for disbursement of the grant and loan, specified by the disbursement categories, are presented in Appendix 7, Financial Management and Disbursement Arrangements.

80. *Procurement.* The joint WB/IFAD Mid-term Review Mission of AISP assessed that the APIU and ARIS have adequate procurement capacity in terms of qualified staff, who has been trained internationally, and the established procedures are in place to undertake procurement of goods and services on a competitive basis.

81. The recommended procurement methods to be further refined at a start-up of the Project and thresholds for the procurement of goods and non-consulting services are described below:

- Contracts estimated to cost more than US\$ 100 000 equivalent will be awarded on the basis of National Competitive Bidding (NCB) or International Competitive Bidding (ICB).
- Contracts estimated to cost US\$ 100 000 equivalent or less will be awarded on the basis of National Shopping (NS) or International Shopping (IS) procedures.
- As an exception to the above, contracts estimated to cost US\$ 50 000 equivalent or less may be awarded on the basis of Direct Contracting (DC) procedures, as it may be determined in the context of IFAD's review and no objection to procurement plans.

82. Indicative procurement methods for the procurement of consulting services would be:

- Contracts estimated to cost US\$ 200 000 equivalent or more shall be awarded on the basis of expressions of interest advertised internationally following Quality and Cost Based Selection (QCBS) as a default method or Quality Based Selection (QBS) for complex or highly

specialised assignments or those which invite innovations where the best expertise available is required without consideration of price.

- Contracts estimated to cost less than US\$ 200 000 equivalent will be awarded on the basis of expressions of interests advertised nationally and following the following selection methods: Quality and Cost Based Selection (QCBS) as a default method; Quality Based Selection (QBS) for complex or highly specialised assignments or those which invite innovations where the best expertise available is required without consideration of price. Selection of SBDU Associates will be carried out following Fixed Budget Selection (FBS) procedures and on the basis of expressions of interests advertised nationally.
- As an exception to the above, contracts estimated to cost less than US\$ 200 000 equivalent may be awarded on the basis of short lists prepared by the APIU/ARIS and comprising three to six firms/individual consultants and following the following selection methods: Quality and Cost Based Selection (QCBS); Consultants Qualification (CQ), Quality Based Selection (QBS) for complex or highly specialised assignments or those which invite innovations where the best expertise available is required without consideration of price, and; Least Cost Selection (LCS) for small value services of a routine nature.
- As an exception to the above, contracts estimated to cost less than US\$ 50 000 equivalent may be awarded on the basis of Sole Source Selection (SSS).

83. The following shall be subject to prior review by the Fund:

- Award of any contract for goods and equipment to cost US\$ 50 000 equivalent or more
- Award of any contract for consulting services estimated to cost US\$ 25 000 equivalent or more
- Award of any contract through direct contracting or Sole Source Selection

F. Supervision

84. The Project would be directly supervised by IFAD. One full supervision, and one review mission would take place per year coinciding with preparation of the AWPBs. The supervision/review missions would focus on: (i) development impact based on progress against agreed indicators, joint identification of problems and solutions with recipients and implementers, and agreement on actions to achieve the Programme's objectives; and (ii) ensuring compliance with loan covenants, procurement, disbursement and the end-use of funds. The supervision team should include an expert on environment and climate change adaptation

G. Risk identification and mitigation

85. A number of risks have come up during the Programme design process, most of which have already been addressed, some others are listed in the Logframe but do not pose serious risks. There are however other risks that could seriously affect the implementation of the Programme:

- Elite capture. Elite capture of a disproportionate amount of the gains from increased production and local level conversion with the result that Programme investments do not fully benefit poorer members of the pasture communities. Response: there is always a risk that the poorer more vulnerable members of the Programme communities, including women and women headed households, will not benefit fully. However, a number of factors in the design of LMDP, supported by positive experience by ARIS in implementing AISP, gives confidence that the Programme interventions will be well targeted and inclusive of the more vulnerable segments of the target population. The participatory planning process, already used in AISP, works with specific focus groups for vulnerable households, women and women headed households and those families that use the pasture for non-livestock purposes (gatherers of herbs and medicinal plants, etc.). This inclusive approach, as well as the introduction of diversification activities as means of adaptation, will help address this risk. In addition, the

size of allocation of the matching grants for CPMP investments will reflect the level of poverty of the PCs.

- Financial sustainability of community vets. There is still an attitude among a number of livestock producers that veterinary services should be free, like they were during the Soviet period, hence a reluctance to pay for services. This can affect the ability of the CVs to establish viable and sustainable businesses. Response: This risk is recognized and the Programme will assist CVs to build up their businesses through training, both technical and business training, and provision of a package of veterinary materials and equipment to enable them to provide good and professional services to the livestock producers. In addition, the CVs will be linked to the Animal Health Sub-Committees, which form part of the Pasture Committees that are the executive body for the livestock producers in the community. While it can be difficult to get livestock producers to pay for production advice, experience elsewhere indicates that there is a willingness to pay for veterinary advice.
- Extreme weather events. Pasture productivity, hay yields, and fodder crops are strongly influenced by climate conditions. Heat stress and other extreme events could cause a reduction in livestock productivity and an increase in disease incidence. The drought-induced lack of pasture and fodder may lead to overgrazing, animal death, or force livestock owners to destock herds they are unable to feed. Current fodder varieties have been impacted by prolonged summer heat waves. Response: This risk was recognised during the design phase and a vulnerability assessment was undertaken to guide Programme activities that enhance adaptive capacity. Pasture communities will have access to information regarding disaster risk through the Early Warning System; improved agricultural research will promote introduction of heat tolerant varieties; the design of the risk-mitigation CPMPs, its subsequent investments and the introduction of pasture inventories and additional income-generation activities are meant to reduce the impact of this risk.
- Market dynamics. Two linked market-related risks are weak market linkages and exploitative markets/milk processors, and the inability to attract sufficient quantities of milk from producers on a regular basis. Response: While there are often complications in getting relationships with milk processing plants working smoothly, two factors mitigate against this happening under the Programme: first, the milk processing plants are operating under capacity and need additional supplies of milk and second the milk processing plants have volunteered to take a financial share in the proposed milk collection and cooling centres. While there can also be problems on the supply side, other Programme interventions, including improved pasture productivity, better availability of feed and expansion in AI availability should increase the amount of milk produced, over and above local needs.

IV. Project costs, financing, benefits and sustainability

A. Project costs

86. The total investment and incremental recurrent Project costs, including physical and price contingencies, are estimated at about US\$ 39.5 million (KGS 1.96 billion). Physical and price contingencies are low at 1% of the total Project costs due to the fact that investments associated with the various grants represent around 70% of the total Project costs (expressed as a lump sum, no contingencies). The foreign exchange component is estimated at US\$ 1.6 million or about 4% of the total Project costs. Taxes and duties make up approximately US\$ 0.2 million. Majority of Project management expenses are covered under LMDP-I, therefore the funds allocated to the Project Management component make about 2% of the total Project costs. A summary of the Project costs by component is presented in the table below.

Table 1: Project Costs by Component

Component	(Som Million)			(USD '000)			%	%Total
	Local	Foreign	Total	Local	Foreign	Total	Foreign Exchange	Base Costs
A. Community-based Pasture Management and Vulnerability Reduction								
1. Community Risk-mitigation Pasture Management and Investments	1,510.2	8.6	1,518.7	30,819.4	175.0	30,994.4	1	79
2. Pasture Institutional Strengthening	98.8	44.6	143.4	2,016.0	909.8	2,925.8	31	8
Subtotal Community-based Pasture Management and Vulnerability Reduction	1,608.9	53.2	1,662.1	32,835.4	1,084.8	33,920.2	3	87
B. Livestock Health and Production Services								
1. Strengthening Veterinary and Community Animal Health Services	89.5	2.1	91.6	1,826.9	43.5	1,870.4	2	5
2. Animal Health Education and Capacity Building	42.5	13.6	56.1	867.1	277.9	1,145.0	24	3
Subtotal Livestock Health and Production Services	132.0	15.7	147.8	2,694.0	321.4	3,015.4	11	8
C. Diversification and Market/Value Chain Initiatives	59.1	0.9	60.0	1,206.8	18.2	1,225.0	1	3
D. Project Management	32.3	5.0	37.3	658.9	101.9	760.7	13	2
Monitoring and Evaluation	3.9	0.1	4.1	79.8	3.0	82.8	4	-
Subtotal Project Management	36.2	5.1	41.3	738.6	104.9	843.5	12	2
Total BASELINE COSTS	1,836.3	74.9	1,911.2	37,474.8	1,529.3	39,004.1	4	100
Physical Contingencies	12.8	0.3	13.1	260.9	5.6	266.5	2	1
Price Contingencies	33.2	6.4	39.7	215.1	42.3	257.4	16	1
Total PROJECT COSTS	1,882.3	81.6	1,963.9	37,950.8	1,577.1	39,527.9	4	101

B. Project financing

87. An IFAD loan, US\$ 11 million (27.8% of the total Project costs), would finance: 30% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 10.2 million), 7% of the Livestock Health and Production Services Component (US\$ 0.2 million), and 69% of the Project Management Component (US\$ 0.63 million). An IFAD grant of US\$ 11.0 million (27.8% of the total Project costs) would be used to finance: 23% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 7.8 million), 74% of the Livestock Health and Production Services Component (US\$ 2.2 million), 61% of the Diversification and Market/Value Chain Initiatives Component (US\$ 0.75 million), and 29% of the Project Management Component (US\$ 0.26 million). An ASAP grant of US\$ 10.0 million (25.3% of the total Project costs) would be used to finance: 28% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 9.8 million) and 18% of the Diversification and Market/Value Chain Initiatives Component

(US\$ 0.22 million). The Government contribution is estimated at US\$ 0.27 million (2%) and includes contributions from its budget to primarily cover a part of EWS O&M costs as well as taxes (see below). The Republican Association of Pasture Users' Unions would provide around US\$ 175 000 (less than 1% of the total Project costs) to meet some of its operational expenses. Approximately US\$ 7.0 million (18%) would be provided by the beneficiaries as co-financing of the Community Pasture Management Plans and other grants.

88. The Government contribution would cover all taxes and duties on all Project inputs that involve funding from the IFAD Loan/Grant and ASAP Grant or any other external source of funding associated with the IFAD Loan/Grant and ASAP Grant. In addition, the Government is expected to contribute from its budget about US\$ 54 000 to cover a part of the operational costs to support the EWS. The estimate of taxes and duties was based on the rates in effect prevailing at the time of the design. In conformity with the principle that no taxes or duties would be financed out of the proceeds of the IFAD Loan/Grant and ASAP Grant, any future changes in the rates and/or structures of taxes and duties would have to apply to the project.

89. Tables 2 and 3 below provide summaries by the project components and expenditure accounts of the proposed financing arrangement. The other summary financing tables are provided in Appendix 1 of Working Paper 1.

Table 2: Financing Plan by Components (US\$)

Component	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		PU Association		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
A. Community-based Pasture Management and Vulnerability Reduction																
1. Community Risk-mitigation Pasture Management and Investments	9,881	31.6	6,105	19.5	9,037	28.9	-	-	6,256	20.0	23	0.1	-	-	31,302	79.2
2. Pasture Institutional Strengthening	292	9.6	1,646	54.0	743	24.4	54	1.8	-	-	137	4.5	175	5.7	3,047	7.7
Subtotal	10,173	29.6	7,751	22.6	9,780	28.5	54	0.2	6,256	18.2	160	0.5	175	0.5	34,349	86.9
B. Livestock Health and Production Services																
1. Strengthening Veterinary and Community Animal Health Services	5	0.3	1,314	69.5	-	-	-	-	570	30.2	1	-	-	-	1,890	4.8

Component	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		PU Association		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
2. Animal Health Education and Capacity Building	195	16.9	927	80.0	-	-	-	-	-	-	36	3.1	-	-	1,159	2.9
Subtotal Livestock Health and Production Services	200	6.6	2,242	73.5	-	-	-	-	570	18.7	37	1.2	-	-	3,049	7.7
C. Diversification and Market/Value Chain Initiatives	-	-	745	60.8	220	18.0	-	-	258	21.1	2	0.1	-	-	1,225	3.1
D. Project Management																
Project Management	617	75.5	184	22.5	-	-	-	-	-	-	16	1.9	-	-	817	2.1
Monitoring and Evaluation	10	10.8	77	87.9	-	-	-	-	-	-	1	1.3	-	-	88	0.2
Subtotal Project Management	627	69.2	262	28.9	-	-	-	-	-	-	17	1.9	-	-	905	2.3
Total PROJECT COSTS	11,000	27.8	11,000	27.8	10,000	25.3	54	0.1	7,084	17.9	216	0.5	175	0.4	39,528	100.0

Table 3: Financing Plan by Expenditure Accounts (US\$)

Expenditure Account	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		PU Association		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs																
A. Goods, Equipment and Materials																
Goods, Equipment and Materials	475	39.1	-	-	610	50.2	-	-	-	-	130	10.7	-	-	1,216	3.1
B. Vehicles																
Vehicles	54	89.3	-	-	-	-	-	-	-	-	7	10.7	-	-	61	0.2
C. Technical Assistance and Studies																
International TA	-	-	308	81.3	37	9.7	-	-	-	-	34	9.0	-	-	379	1.0
National TA /a	-	-	6,452	97.1	18	0.3	-	-	-	-	-	-	175	2.6	6,646	16.8
Subtotal	-	-	6,760	96.2	55	0.8	-	-	-	-	34	0.5	175	2.5	7,025	17.8
Technical Assistance and Studies																
D. Training and Workshops																
Training and workshops	-	-	1,477	99.3	10	0.7	-	-	-	-	0	-	-	-	1,488	3.8
E. Pasture/Livestock Improvement Grants																
Pasture/Livestock Improvement Grants	9,759	39.0	-	-	9,009	36.0	-	-	6,256	25.0	-	-	-	-	25,024	63.3
F. Value Chain and Diversification Grants																
Value Chain and Diversification Grants	-	-	462	49.1	220	23.4	-	-	258	27.4	-	-	-	-	940	2.4
G. Other Grants																
Other Grants	-	-	2,300	80.1	-	-	-	-	570	19.9	-	-	-	-	2,870	7.3
/b																

Expenditure Account	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		PU Association		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Total Investment Costs	10,289	26.6	11,000	28.5	9,904	25.6	-	-	7,084	18.3	171	0.4	175	0.5	38,622	97.7
II. Recurrent Costs																
A. Salaries and Allowances	418	100.0	-	-	-	-	-	-	-	-	-	-	-	-	418	1.1
B. Social Fund	68	100.0	-	-	-	-	-	-	-	-	-	-	-	-	68	0.2
C. Operating Expenses																
Vehicles	33	89.3	-	-	-	-	-	-	-	-	4	10.7	-	-	36	0.1
Office	60	89.3	-	-	-	-	-	-	-	-	7	10.7	-	-	67	0.2
Other	132	41.9	-	-	95	30.2	54	17.2	-	-	34	10.7	-	-	316	0.8
Subtotal	225	53.6	-	-	95	22.8	54	12.9	-	-	45	10.7	-	-	419	1.1
Operating Expenses																
Total Recurrent Costs	711	78.5	-	-	95	10.5	54	6.0	-	-	45	5.0	-	-	906	2.3
Total PROJECT COSTS	11,000	27.8	11,000	27.8	10,000	25.3	54	0.1	7,084	17.9	216	0.5	175	0.4	39,528	100.0

\a Also includes costs of ARIS. Unit costs for NTA includes charges of 17.25% to the Social Fund.

\b Micro grants to AHC, CV, CSF and scholarships.

C. Summary benefits and economic analysis

90. **Project Benefits.** The main Project benefits would go to households in the 190 PUUs areas that constitute the Project areas in the selected oblasts. Some 304,000 households would benefit directly and indirectly from the Project's interventions (80% of the targeted population). The pasture management and animal health activities would reach a high proportion of the target population with the largest part of Project investment going directly to the beneficiaries in the form of matching grants, training and technical assistance. Benefits would derive from: (i) increased pasture yields and less vulnerable pastures; (ii) raised feed crop yields and expanded cultivated feed crop area; (iii) improved resilience and capacity of smallholders for livestock and pasture management; (iv) reductions in livestock mortality and improved livestock performance; (v) opportunities for better breed improvement and selection; and (vi) reducing risk through the installation of an early warning system to benefit pasture communities.

91. About 193,420 Ha of pastures would be improved, including around 17,000 Ha of pastures rehabilitated (superficial and radical improvements) thus resulting in about 20,000 ton of carbon sequestered on an annual basis, or approximately US\$ 136 000 per annum in value terms. In addition approximately 300 women would benefit from involvement in milk value chain business groups and additional income generation activities. Implementation of the Community Pasture Management Plans and Diversification/Value Chain Grants for women would result in incremental production (at least 15%), consumption and sales of meat and milk which in turn improves nutrition status of the rural population in the Project oblasts and increases their income. Installation of the EWS would allow to avoid losses of assets estimated at approximately US\$ 1 million annually. More than 90% of Project costs would go directly to Project beneficiaries, with over 70% of total Project investment provided directly to beneficiaries in the form of matching grants.

92. **Unquantifiable Benefits.** The adoption of a risk-reduction community demand-driven approach would result in: (i) empowering communities to manage their own resources in a more efficient manner; (ii) accustoming the community to prioritize, plan and implement proposed adaptation and subsequent economic activities; (iii) assisting communities, organised on a voluntary basis, to interact more effectively with local administration, central government and other sources for the delivery of services; (iv) helping to develop new relationships and public-private partnerships under a democratic form of governance; and (v) orienting communities and individuals to improve their livelihoods using market-oriented approaches. As a result, it is expected that communities and their organisations would be strengthened through participatory and gender sensitive approaches matched with equally strengthened capacity of government agencies and other service providers who would be able to meet expressed community priorities in a timely and transparent manner.

93. Environmental / Adaptation Benefits. The Project is designed around vulnerability reduction and restoration of natural assets. It supports implementation activities, technical assistance and training, promote policy dialogue and strengthen knowledge management related to that. The main benefits would accrue from: (i) increased preparedness of pasture communities and risk-mitigation through the EWS and participatory planning; (ii) area of land saved and land restored; (iii) improved agro-ecosystems; (iv) increased value of nutrient recovery in the soil; and (v) increased moisture availability, water infiltration and improved water quality and availability in pastures.

94. Employment Generation. Additional employment opportunities for the rural population would be generated in the Project area either as hired labour or as increased household labour requirements for both on-farm and off-farm activities as well as through Project supported-works for rural infrastructure, pasture rehabilitation schemes and improved pasture access.

95. **Financial Analysis.** A comprehensive set of financial analyses have been undertaken of the Project's different investment activities, including preparation of five production models: (i) Pasture Superficial Improvement; (ii) Pasture Radical Improvement; (iii) Controlled Grazing; (iv) Alfalfa; and (v) Annual Grass. A financial model has also been prepared for the Project investments in the PC/PUU as captured in the Community Pasture Management Plan. In addition, financial models were

prepared for the two milk value chain interventions: milk collection and cooling centres and women's milk processing groups; as well as for a solar greenhouse representing an opportunity for income diversification. The results of the detailed analyses are presented in Appendix 10, Financial and Economic Analysis and in Working Paper 2.

96. The *five production models*, assessing income in the without and with project scenarios, show incremental increases ranging from US\$ 10/Ha for the controlled grazing model and US\$ 306/ha for the radical improvement model, with an average incremental return of US\$ 114/ha over the five models. Benefit/cost ratios were also calculated for each model, which demonstrate the attractiveness of the technologies.

97. The model for a typical *Community Pasture Management Plan* (CPMP) assumes: about 19,061 ha of pastures, including 2,136 ha of winter pasture, 5,233 ha of spring and autumn pasture and 11,691 ha of summer pasture; about 4,000 ha of summer pasture are not used due to the limited access; PUU also cultivates about 200 ha of forage crops and it harvests hay and straw from about 150 ha of haymaking fields and about 1,200 ha of grain fields on average; about 3,725 heads of cattle, 13,889 heads of sheep and goats and 644 heads of horses belong to approximately 1,985 households on average. The financial analysis shows: (i) an increase in incremental income by 15%; and (ii) high benefit/cost ratio (14.6) and IRR (80%), due to the very low starting point, demonstrating the attractiveness of the investments. Sensitivity analysis shows that the model is more sensitive to the changes in price and productivity assumptions than to variations in the production and investment costs. The analysis also shows that the PUU would be able to finance its CPMP beyond the Project, supported out of its own fee collection given that it would increase from the present US\$ 5,000 to US\$ 20,000 per annum (or about KGS 230/LU per year versus KGS 60/LU currently applied on average).

98. The returns from the two milk value chain and one income diversification models also give attractive results with the internal rate of return being 55%, 61% and 63% for the milk collection and cooling centres, women's milk processing groups and solar greenhouses respectively.

99. **Economic analysis.** The economic analysis of the Project indicates that the Project is robust in economic terms. The analysis results in an ERR of 26% and a Net Present Value of US\$ 47 million taken over 20 years with the benefit stream based on the quantifiable benefits that relate directly to the activities undertaken following implementation of the components. The incremental quantifiable benefit stream comprises four main elements: (i) Community Pasture Management Plans (CPMP); (ii) Value Chain and Income Diversification Grants (VC&ID Grants); (iii) Early Warning System (EWS); and (iv) Carbon Sequestration. The sensitivity analyses show that the returns are solid. The switching values show that the Project would be economically viable even if benefits decreased by 62% and investment costs increased by 163%. A one-year delay in project benefits reduces the IRR to 23%. With a two-year delay in project benefits, the IRR falls to approximately 20%.

D. Sustainability

100. Through its design, the Project is adopting a balanced approach between environmental management, economic growth, and the strengthening of social capital. A key focus of the Project is to develop the adaptive capacity in the PCs/PUUs to be able to manage their pasture areas in an improved and sustainable fashion, taking into account the predicted impacts of climate change on pastures and pasture communities in the country. As noted above under the financial analysis, the PUUs would be able to manage their CPMPs beyond the Project due to increased fee collection. The pasture inventory, including mapping and carrying capacity, as well as the early warning system coupled by training and institutionalisation, will provide a sustainable tool for adaptive management. Similarly, the interventions under the third component, being business focused and driven by market demand from the milk processing plants and other market players, as well as the additional income-generating activities, would also be sustainable as long as they are profitable. Institutionally, the two lead agencies – APIU and ARIS – are sustainable, with APIU part of the Ministry of Agriculture and ARIS a strong, financially independent institution.

Appendix 1: Country and rural context background

A. Introduction

1. The Kyrgyz Republic is a small landlocked country bordering Kazakhstan, Tajikistan, Uzbekistan and China. The country's population in 2012 was 5.5 million, according to the Kyrgyz National Statistics Committee. The Kyrgyz Republic is a multi-ethnic country with three main ethnic groups: indigenous Kyrgyz, Russians who remained after the end of the Soviet Union, mostly in the North of the country, and Uzbeks (mainly in the Ferghana Valley in the South). Between 1999-2009, the Kyrgyz ethnic population increased from 65 percent to 71 percent, while the Russian population decreased from 13 percent to 8 percent as many returned to Russia. Uzbeks represent 14 percent of the population.
2. There are seven administrative regions called Oblasts, with three located in the South (Jalalabad, Osh, and Batken), and four in the North (Chuy, Talas, Naryn, and Issyk Kul). About 60 percent of the rural population lives in the southern regions. One-third of the population lives in 25 cities and 28 small towns, while two-thirds live in rural areas, i.e. in 1,871 villages grouped in 440 Aiyl Aimak.
3. The total land area is about 198,000 square kilometres, with 94 percent of the territory located higher than 1,000 meters above sea level, and 40 percent above 3,000 meters. About 45 percent of the land is not suitable for human habitation.
4. Although the agriculture sector contributes only modestly to the economy, making up about 30 percent of the country's Gross Domestic Product (GDP), it plays an important role in employment, absorbing more than 38 percent of the work force, and ensuring food security for the majority of rural people through subsistence-based family farming systems.
5. The Kyrgyz Republic is classified as a "Low-Income Food-Deficit Country," in that it depends on wheat imports to cover about one-quarter of its consumption requirements. In 2012, the country's "Human Development Index" score was 0.622, as defined by the United Nations Development Program, which ranked it 125th out of 187 countries, its average poverty level was about 38 percent in 2012.
6. The country experienced several political and economic crises during the last decade, including a revolution in 2005 that resulted in the president fleeing the country, winter crises in 2008 and 2009 with subsequent drought, and another revolution in 2010, which led to violent ethnic conflict in the South. The social and political instability has led to an economic decline since 2008. Ethnic violence in the South created social tensions, with internally displaced persons estimated at 75,000. Total damages were estimated at US\$490 million, about 13 percent of GDP.
7. The interim government drafted a new constitution, which was approved by voters in a referendum in June 2010. While the most important changes related to reducing the power of the president, important changes also were made with respect to the environment and natural resources, and in particular land ownership (Articles 12 and 48). But the constitutional statements are not detailed, especially regarding enforcement. The constitution states that pastures are a state property and provides greater certainty for the management of pastures, recognizing that agriculture and pasture use are important economic activities as well as culturally significant. Debates remain regarding wildlife ownership. The constitution refers to flora and fauna but does not differentiate between wild and domesticated plants and animals.

B. Development Strategy and Donor Harmonization

8. The Kyrgyz Government's National Sustainable Development Strategy for 2013-2017 and Medium Term Development Program for 2012-2014 focuses on the rule of law, an improved business environment for investment, economic development, social unity, governance and transparency in

public administration, human development, and environmental sustainability. Five donors combined to release the Kyrgyz Republic Joint Country Support Strategy (JCSS) — the Asian Development Bank (ADB), the Swiss Cooperation (SC), the UK Department for International Development (DFID), the World Bank and the United Nations. Two relevant areas in the JCSS are: pro-poor growth, plus environmental sustainability and natural resource management.

C. Food Security

9. The World Food Program Emergency Food Security Assessment of 2010 estimated that 27 percent of the population was food insecure, most moderately, but also chronically and transitory food insecure. According to the WFP, 14 percent of Kyrgyzstan's population lacked food security in 2011. Despite sufficient quantities of staple food consumed, the lack of varied diet - due to low incomes - is the main cause of food insecurity. Food insecurity is more likely to affect rural than urban households. According to WFP, rural food-insecure households either own no animals (may have been lost in unrest) or more likely few animals, with barely enough food to subsist on. In addition, they are unlikely to have any stock of animal fodder/feed. The highest prevalence of food insecurity was in Osh Oblast (55 percent), followed by Issyk-Kul, Talas, Batken and Jalalabad. The best food security situation was in Bishkek and Chui. Most of the 75,000 internally displaced people in Osh and Jalalabad from the 2010 conflict are believed to be food insecure.

10. Updates prepared on the WFP 2010 report,⁸ covering some aspects of the nutritional situation, indicate a deterioration in the nutritional status of children, particularly within severely food insecure households in rural areas where stunting reaches 35.9 percent of children under 5 years old. Food-insecure households, especially severe, continue to have less frequent support from migrants than other households (12 percent of severely food-insecure and 15 percent of moderately food-insecure, compared with 22 percent food-secure).

11. While the direct impact of the conflict in 2010 on food production was limited, the impact on households was significant. Families in affected areas of Osh and Jalalabad saw their farm machinery and tools lost and livestock looted. Moreover, some minorities did not feel secure to access their fields. The violence in southern Kyrgyzstan also resulted in the destruction of marketing infrastructure, including the main market in Osh and numerous small businesses, affecting trade and local incomes.

D. Agriculture

12. Despite its small size, the Kyrgyz Republic has significant regional environmental diversity and biodiversity. The country's diverse range of landscape types and microclimates leads to a wide-ranging diversity of ecosystems. The country is host to nearly 1 percent of all known species in the world on just 0.13 percent of the world's landmass. However the Kyrgyz Republic is one of the least accessible locations in the world. Only about 7 percent of the country's land is arable.

13. Agricultural land is classified into two main types: arable land cultivated to grow crops, and pastures, the uncultivated part used for grazing animals. Pastures comprise 85 percent of agricultural land, with arable land accounting for the remaining 15 percent. Pastures were not subject to privatization and remained state property after independence. Government privatization efforts focused only on arable land. The land reform legislation set a privatization target of 75 percent of arable land, with the remaining 25 percent to be held in a State Land Redistribution Reserve for future contingencies.

14. The government's country development strategy focuses on agriculture as a key sector for output and employment. Irrigation is a critical input for profitable and market-oriented agricultural production. Over the past decade the area planted with cereals has declined as farmers use former "wheat land" for more profitable fodder crops in response to the growing livestock sector. The United Nations Food and Agriculture Organization (FAO)/WFP estimate that gross income from fodder crops is 1.5-5 times higher than that from wheat. From 2003 to 2010, the area cultivated with fodder crops

⁸ Agnes Dhur, Second Update of Food Security and Nutrition Situation in Kyrgyzstan, WFP, April 2010

increased by 43 percent. Between 2002-2010, wheat areas decreased by 27 percent and wheat production declined by 292,000 tons. Further, lower planting of cereals is linked to lower availability of farm machinery. Agricultural productivity, particularly in terms of grain yields, is low because of under-investment. A recent report by FAO/World Bank confirmed that a lack of agricultural machinery led to reduced productivity.

15. The production of seeds in the country supplied almost all of the 2010 winter and spring wheat requirements. In addition, there were carry-over stocks of seeds that farmers had not marketed in the previous season. Until 2009, the government allocated funds for direct seed purchase, ensuring the provision of quality seed to farmers. Seed was redistributed on a credit basis. FAO notes the seed replacement rates are high given the low productivity. In 2010, seed used as a percentage of the requirements implied farmers are replacing their winter wheat seeds on average once every four years in Issyk-Kul, once every two years in Talas and Chui, twice every three years in Jalalabad and almost annually in Batken. The seed rate for wheat in the Kyrgyz Republic is about 230 kilograms/hectare (up to 300 kilograms/hectare in Issyk-Kul oblast) and 200 kilograms/hectare for barley. According to FAO, these rates are high and reflect farmers substituting seed use for other factors. For example, inadequate soil preparation and planting, reduced use of fertilizers, and harsh winters result in low seed germination.

16. Most fertilizer is imported from Uzbekistan. Use has increased over the past decade but remains low due to price, and low usage limits productivity. The main fertilizer used is ammonium nitrate which reportedly contains on average 34.5 percent of nitrogen. In terms of nitrogen application, the rate is low at 21 kilograms/hectare (2009-2010). The amount of phosphorous fertilizer applied is minimal with some 2,000 tons imported annually. Potash is generally not used. Total fertilizer application in 2009-2010 was less than half the Ministry of Agriculture guidelines: 78 kilograms/hectare compared to requirements of 175 kilograms/hectare. Prior to the conflict in 2010, most fertilizer was supplied by OshKrustek, a private company with links to Uzbek fertilizer manufacturers. After the conflict, OshKrustek ceased its operations. This has reduced supply and distribution.

17. Irrigated agriculture covers more than 1.3 million hectares. About 75 percent of the annual cereal output and nearly all the potato and vegetable production are under irrigation. However, irrigation infrastructure was mostly built during the Soviet era, mainly in the South (Osh and Jalalabad) and in Talas, and much is in need of repair and maintenance.

E. Rangelands and Pastures

18. Pastures cover 85 percent of the agricultural land. Efficient pasture management is important for livestock development, a primary income source for rural communities. As mentioned previously, pastures were not subject to privatization and remained state property after independence. Article 4(5) of the 2007 Constitution outlined ownership of land, resources, forests, flora, fauna and natural resources with the Kyrgyz Republic, stating resources may be in "private, municipal or other forms of property." Article 12(5) of the 2010 Constitution notes pastures may not be in private ownership.

19. In January 2009, the new "Law on Pastures" came into force. Article 3(1) of the law states that pastures are publicly-owned. In effect, the law gives management to the rural communities. In fact, the law transferred responsibility for pasture management to local pasture users. The major features of the new legal framework are the following:

- The Pasture Law decentralizes management of all pasture land to local government with the further option of decentralization to pasture users who form Pasture Users' Unions (PUUs).
- PUUs develop Community-Based Pasture Management and Use Plans which serve as a foundation for management, maintenance, improvements and use.
- Pastures are viewed as an ecosystem. The new law has replaced leases with use rights to encourage mobility and pasture rotation, as well as to ensure fair access for all users.

- Revenue from pasture use comes to PUUs' financial accounts and is intended for pasture improvements.
- Other users besides livestock holders participate in decision-making processes and are represented in the Pasture Committees. These are commonly women and the poor, who have no livestock but collect and harvest various resources on the pasture lands.

20. The new pasture law is generally seen as a codification of best practice in rangeland and pasture management. The law has received considerable attention and interest from other countries in the region.

F. Livestock

21. The livestock sector accounts for about half of agriculture's contribution to GDP, and is one of the strongest components of the rural economy. Livestock products represent a substantial part of the diet and as much as 20 percent of total food consumption in kilocalorie (Kcal)/per capita. In 2012, the livestock industry accounted for 5.44 million sheep and goats, 1.4 million cattle (including yaks), 0.4 million horses and 5 million chickens. More than 90 percent of the livestock are owned by small-scale farmers.

22. Since 1995 livestock numbers have been increasing, particularly in recent years. From 2003-2009 the number of cattle, horses, sheep and goats increased by 27 percent, 10 percent and 31 percent respectively, increasing pressure on pasture reserves. As a result there is an imbalance in pasture utilization, marked by under-grazing of distant summer pastures and over-grazing of village/nearby pastures. This situation, together with insufficient quality feed in the winter and early spring, has resulted in low livestock productivity. Data show productivity per capita is stagnant, raising concerns about livestock management.

23. The factors affecting low animal productivity are: poor nutrition, disease, parasites, and poor animal and farm management. By correcting these constraints, livestock sector output has the potential to increase considerably. This is important to both rural nutrition and income levels. The World Bank estimates milk production could increase by 70 percent and mutton and beef by 50 percent. For maximum results, improvements need to be made to all aspects of livestock production. But given the huge number of smallholders, it is important to prioritize disease control, animal nutrition (pasture management and winter feed), farmer knowledge and marketing, and processing. Better nourished and kept animals are less susceptible to diseases – increasing rural incomes. It is more important to focus on smallholder livelihoods and address these constraints than to increase animal numbers or change the genetic composition of the national herd.

24. According to the FAO/WFP Crop and Security Assessment in 2010, livestock rearing systems for sheep and goats, and for a major proportion of the cattle, include seasonal transhumance to intermediate and high mountain pastures (*jailoo*). The migration begins in April/May and finishes in September/October. In some mountainous areas pasture-based livestock grazing lasts all year long. Winter carrying capacity determines the size of the household breeding flock/herd, which in turn depends on a variety of home-produced feeds including the poorer quality wheat, maize and barley grain; as well as by-products such as straw and bran to supplement winter grazing and locally-produced meadow and lucerne/sanfoin hay. Furthermore, transhumant patterns were normal in most areas: an upward migration has been timely, although some disruptions were reported due to ethnic tensions, particularly in the South.

G. Machinery

25. The Kyrgyz Republic has fewer tractors per hectare than any comparable country, with a deficit estimated at 40 percent. The deficit of combine harvesters, estimated at 45 percent, is also critical. Lack of machinery leads to lower domestic production. This is particularly concerning given the increase in wheat prices and subsequent food security concerns. The sown area for winter wheat has decreased by about 27 percent since 2002. An FAO/World Bank 2009 study estimates the value of

the agricultural machinery gap at about US\$400 million. The lack of machinery is important - investing in seed and fertilizer will not increase productivity unless seedbeds are prepared properly and crops are harvested in a timely manner. According to the study, land preparation in the Kyrgyz Republic costs 55 percent more than in Kazakhstan (after adjusting for fuel subsidies). Inadequate access to credit and small farm size are the main factors that constrain farm mechanization. It is important to develop credit lines for agricultural productive assets, for leasing and facilitating access to second-hand equipment, and testing/demonstrating the efficiency of farm machinery for small-scale farming.

H. Rural Finance

26. The banking system is the main provider of financial services in rural areas. Deposit rates are low, reflecting lack of confidence in the banking system following the banking crises since independence. But research by the Asian Development Bank (ADB) also found “poor service, including difficulties with intra-bank money transfers that can be especially problematic for rural residents.” The Kyrgyz Republic also has a large number of non-bank financial institutions.

27. Farmers typically apply for short-term resources such as micro-financing. The volume of credit expanded almost four times between 2004-2008 but the share of the agriculture sector in the total volume of micro-credits provided by the banking sector remains very low at 3.5 percent. The leading institutions providing micro-credits are Aiyl Bank (covering 10 percent-15 percent of farmers' requests for micro-credit), and the Aga Khan Foundation. The interest rates of those credits are high, varying from 18 percent to 59 percent, with an average of 39 percent. Loan approval is typically delegated to branches, with approval limits more than adequate. The main constraint to getting loans is lender insistence on physical collateral, exacerbated by the inability to use rural land effectively for collateral. Cash flow-based lending is rare.

28. Following the 2010 conflict there was a temporary suspension of credit, when bank and microfinance institution branches were closed and there was a moratorium on registration of collateral. According to FAO, Aiyl Bank reported the interruption did not affect disbursements, which is surprising. As an emergency assistance fund following the civil unrest, the Russian RosselkhozBank agreed to provide a US\$30 million credit line, at interest rates of 1 percent, to two Kyrgyz banks - RSK and Aiyl. Those banks in turn were to lend in Kyrgyzstani Som at interest rates ranging from 9 percent to 18 percent to support farmers and agriculture processors affected by the events.

I. Environment and Climate Change

29. Priority environmental problems in agriculture include: inefficient water use, water logging, and soil salinization in irrigated lands caused by deteriorated irrigation and drainage systems; and degradation of pasture areas due to over-grazing, and under-grazing in more remote areas. Other issues include threats of soil pollution and, especially, nitrate contamination of surface water, particularly in those areas where farmers are not trained in the proper handling and application of agro-chemicals. Total forest area appears to be stable. Current agricultural policies and programs are aimed at protecting soils, managing pasture lands and water resources, and supporting the country's commitments to the United Nations Convention of Combat Desertification.

30. Research conducted during the project preparation showed that over the last century the air temperature of the territory of the Kyrgyz Republic increased by 0.8°C. The global climate model used by the Intergovernmental Panel of Climate Change indicate that Central Asia is expected to experience an increase in mean annual temperature on average of 2°C by 2020 and 4-5°C by 2100. When it comes to precipitation, estimates foresee local variability on the short term, with general, sharp decreases after 2030-2040. Overall, an increase in winter precipitation and a decrease in summer precipitation are projected for Central Asia. The model also predicts a decrease in annual runoff of 12 percent by 2020, with a potential threefold increase by 2050. These changes will result in increased incidence of drought, heat waves and extreme weather events.

31. The Second National Communication to the United Nations Framework on Climate Change also identifies the following, most vulnerable areas to climate change:

- Water. The combination of decreased rainfall and the significant reduction of glaciers will have a negative impact on water availability and river-flow, with changes in intra-annual distribution. The depletion of water resources might lead to an increase of arid and semi-arid desert areas from the current 15 percent to 23-49 percent in 2100.
- Agriculture and Livestock. Temperature changes will extend the areas favorable to certain crops, such as cotton and grapes, and will require overall shifts in the actual distribution of crops. Major events that threaten to reduce agriculture productivity include extended summer drought, hailstorms, windstorms, late spring and early fall frosts, and winter thaws. Decreased summer precipitation may significantly reduce the productivity of highland pastures in several parts of the country.
- Extreme climate events. The overall probability of landslides, mudflows, avalanches, high waters and breaches of high-mountain lakes will locally increase or decrease in different parts of the country, with a sharper increase in the central part of the country.

32. The Forestry Development Concept to 2025 focuses on decentralization and greater involvement of local stakeholders. From 1995-2007, a program on Collaborative Forest Management (CFM) was implemented under the Kyrgyz-Swiss Forestry Support Program. The initial focus area was the walnut forests in the southern region but CFM was also adopted in other areas that grow pistachios, almonds and poplar. The forest sector also is moving toward reforming management of forest resources with a larger engagement by local communities. This is in part is due to growing pressure from communities which now manage pasture resources and want similar arrangements for use of pastures located within the State Forestry Fund.

Appendix 2: Poverty, targeting and gender

A. National Poverty Context

Poverty and gender context

1. This Appendix is based on Appendix 2 of the LMDP-I Design Completion Report, and mainly sets out some additional information reflecting the three new oblasts – Batken, Jalaabad and Osh - and the focus on increasing resilience to climate change, though this latter is detailed more fully in Working Paper 3.
2. The Kyrgyz Republic is a low-income country with a gross national income (GNI) per capita of USD\$990 in 2012 (Atlas method). That ranks it the second lowest in Europe and Central Asia after Tajikistan. As a result of broad post-independence economic reforms, poverty in Kyrgyzstan declined significantly between 2000-2008. Official poverty estimates (which were based on expenditure per capita) decreased from 52 percent of the population in 2000 to 41 percent in 2003 and 32 percent in 2009. However, political crises and instability since 2010 has negatively affected economic growth, and poverty climbed back to 33 percent in 2010, 37 percent in 2011 and 38 percent in 2012.
3. Those considered in extreme poverty rose by 2.2 percentage points to 5.3 percent between 2009 and 2010, then dropped slightly to 4.5 percent in 2011.⁹ As with absolute poverty, rural extreme poverty rates have increased the most.
4. In 2012, the country's "Human Development Index" score as compiled by the United Nations Development Program was 0.622, which ranked it 125th out of 187 countries.¹⁰ Perhaps more relevantly, while the Kyrgyz Republic's human development performance since 1995 has improved, it has been at a slower rate than equivalent countries, suggesting that the Kyrgyz Republic is slipping further into poverty. The Kyrgyz Republic is classified as a "Low-Income Food-Deficit Country" in that it depends on wheat imports to cover about one-quarter of its consumption requirements. Poor agricultural workers have more hours available for work, but only a small share are able to secure a second job. The situation of women appears specifically precarious as the share of paid work has fallen significantly. Looking at the country's development progress through the lens of the Millennium Development Goals (MDGs) shows that the Kyrgyz Republic is partially on track to achieve the declared goals.¹¹
5. Poverty is especially high in rural areas. The rural population includes three-quarters of the country's poor, who live mainly in remote and mountainous areas, where there are limited economic opportunities, infrastructure is poor and there is little or no access to markets and social and financial services. Poverty rates are highest in the mountainous areas: Only 13 percent of country's population lives in mountainous areas, but more than half of them are poor.¹² (World Bank 2011).
6. There are significant regional differences in poverty with the highest rates - Jalalabad (56 percent), Osh (51 percent) and Batken (40 percent) oblasts - included in the LMDP-II project areas. There is also a clear correlation between these oblasts and those vulnerable to climate change - Batken, Jalalabad and Osh are connected by bands of high vulnerability as identified in a study for this design.¹³ The climate risks and hazards, and therefore their impact on poverty, vary at different altitudes.

⁹ Women and Men In The Kyrgyz Republic, 2007-2011 Compendium of Gender Disaggregated Statistics. National Statistical Committee of the Kyrgyz Republic.

¹⁰ The UNDP HDI represents a push for a broader definition of well-being and provides a composite measure of three basic dimensions of human development: health, education and income.

¹¹ For the country table, see <http://unstats.un.org/unsd/mdg/>

¹² The Kyrgyz Republic: Poverty Profile and Overview of Living Conditions. World Bank, 2011

¹³ Climate Change Impact on Pastures and Livestock Systems in Kyrgyzstan. Instituto de Estudio del Hambre. June 2013.

7. Women in the Kyrgyz Republic enjoy equal rights by law, but equality is undermined by other factors. There are many other factors affecting women's lives, such as religion, customary law, patriarchal traditions and norms. Kyrgyzstan is predominantly a Muslim country, with a growing influence of Islam on the daily life of its population. Coupled with customary law based on patriarchal traditions, it in many ways restricts women's economic mobility, ability to participate in social and community life, access to decision making and means to issue grievances.

8. The number of official female-headed households is growing, making up about 13 percent of all households. In addition, there are many households where women are the de facto heads of the family, especially because of men migrating to jobs outside of the country. At the same time, women are poorly represented in decision-making bodies, with more than 60 percent of state and local administration positions, and about 80 percent of legislative positions held by men. In the private sector, women also are under-represented in management positions. Only 25 percent of the heads of enterprises are women, and women head only 10 percent of farming enterprises.

9. There is a gender dimension to poverty in rural Kyrgyzstan. Without access to adequate household labour, female-headed households are disadvantaged and vulnerable to severe poverty. Severe food insecurity is also more prevalent among women-headed households than male-headed households. While the policy framework is broadly enabling to women, there are significant challenges to implementation. For example, although there is no legal discrimination against Kyrgyz women in regard to access to land, there are no legal mechanisms to subdivide and withdraw land share in case of divorce. As most households are headed by men, this means that few women are able to register as land owners. Significant and growing gender disparities in employment, wages and political involvement have heightened women's poverty. The re-emergence of traditions and customs including polygamy and bride kidnapping, as well as violence against women, are leading to acute social issues.

10. WFP reports that in 2011, 46 percent of the population was food-insecure (32 percent moderately and 14 percent severely). Food-insecure households were larger than food-secure households - around 6 members versus 4.6 members. Other demographic variables (age, dependency ratio, demographic and family composition, etc.) also play a significant role in defining the poor. In female-headed households, the general poverty line is lower than in male-headed households, but the extreme poverty line is higher (3.4 percent compared with 3.0 percent).¹⁴

Government responses to addressing poverty alleviation 2012 – 2014

11. One of the main tasks of government is to reduce poverty. Taking into account that the problem of poverty requires a comprehensive approach, the Kyrgyz government intends to ensure fair access to sources of economic growth and to manage economic growth in the interests of the poor. The government reforms under way, including the fight against corruption, will promote transparent management of revenues generated from economic activities and their use to help the poor. The Medium Term Development Program (2012-2014) is aimed at creating conditions in which the private sector will be able to develop, prosper and provide the jobs necessary to raise incomes and reduce poverty. Along with this, the state will concentrate its efforts on social development, applying policies that protect vulnerable segments of the population through timely and quality social services.

Lessons from targeting interventions¹⁵

12. Pasture reforms are poverty and gender sensitive. The Pasture Law ensures the inclusion of all the rural population in Pasture Users' Unions (PUUs), irrespective of whether people own livestock or use pasture resources. PUUs were not envisaged as member organizations, but were intentionally registered as Territorial Unions of Self Governance (TUS), which by legislation are open to any residents of the Ayl Aimak.

¹⁴ Women and Men in the Kyrgyz Republic, NSC, 2010

¹⁵ Mid-term Review of the Agricultural Investments and Services Project (AISP), Poverty Assessment

13. Another safeguard for vulnerable groups, such as women and poor, is reflected in the legal structure of a PUU and its executive body - Pasture Committee (PC). If rightly implemented, the law ensures that people who don't own any livestock have the same voice as small and large livestock holders. Considering that people without livestock and those with small number of livestock are largely poor and/or women, the law and project ensures that vulnerable segments of population have even more bargaining power than those who are better off.

14. This primary mechanism for ensuring social inclusion has been implemented through ARIS' procedures. Those include using focus groups as tools to reach various segments of population, actively engaging the participation of the poor, women, youth and the elderly, and giving them a voice in community deliberations, even when they did not actively participate. Well-targeted focus group discussions have been convened in most communities to ensure the appropriate consideration of interests across stakeholder groups, and to drive pasture investment decisions.

15. At the same time, the Agricultural Investments and Services Project (AISP) was not able to fully explore possibilities to increase the engagement of the poor and women in PUUs and PCs. Experience has shown that representation of women and poor in PCs has not been sufficient. So far, less than 5 percent of the PC heads are women, and many women members of the PCs are often represented by female members of Aiyl Kenesh (local councils), and hired accountants. LMDP-II will explore how to strengthen representation and to encourage vulnerable groups to play a more active role in PUUs and PCs. It is evident that where information dissemination and social mobilization have been weak, engagement of vulnerable segments has been lower.

16. There are a number of PCs where women livestock holders play an important role in the decision-making process. In some PCs, they are actively engaged in fundraising for implementing pasture management plans, in others they are engaged in the collection of pasture use payments.

17. In certain visited communities, women played a notable leadership role in Community Seeds Funds (CSF) governance – this potential should be explored by the Gender/Monitoring and Evaluation(M&E)/Knowledge Management (KM) dedicated staff for LMDP and LMDP II. The long-list of potential CSF members is generally selected based on Aiyl Okmotu (AO) data. However, the process for the final selection of beneficiaries is imprecise. There is a need for the Project to support individual CSFs in enhancing their criteria and screening processes to better target limited resources.

18. The main challenge regarding social inclusion in the formation of the PUU has been the mobilization and inclusion of non-grazing users, and small livestock owners consisting of families that have few animals, perhaps one to three, usually a mix of sheep, cows and perhaps a horse, which they manage on their own or combine with a few other households and rotate pasturing responsibilities within the group.

B. Project Area

19. The project areas for LMDP-II is contiguous to the LMDP-I (Issyk-Kul and Naryn), allowing for maximum synergy in management terms: they also are major livestock areas and among the poorest oblasts in the country. The risk of poverty increases with the altitude and is generally reflected in higher poverty rates in high mountainous areas. The investment gap in high altitude zones and low livestock productivity has resulted in continuing high poverty rates in the Programme oblasts of Batken, Jalalabad, Naryn, Issyk-Kul, and Osh. In 2010, the mountain oblasts of Naryn, Jalalabad, Talas and Issyk-Kul had the greatest concentrations of poverty with 56 percent, 50 percent, 44 percent and 43 percent respectively – compared with the national average of 34 percent. Similarly, the incidence of extreme poverty in these four oblasts was 10 percent, 0.5 percent, 7 percent and 3 percent respectively – compared with the national average of 3 percent.¹⁶

¹⁶ World Bank KG Agriculture Sector Statistics (updated January 2011).



20. The bulk of the food-insecure and at-risk population is located in Osh (38%), Jalalabad (48%) and Batken (38%) oblasts¹⁷, reflecting higher levels of food insecurity as well as the large population in these oblasts. Reduced remittances, limited land available for crop production and dependency on irregular cash are potential reasons for deterioration in these areas, in addition to increased food prices.¹⁸ The same WFP report also demonstrates that the coping strategies of LMDP-II oblasts in the face of increased food insecurity are particularly harmful for health and nutritional status (reducing the number of meals, restricting adult consumption to allow small children to eat, limiting portion sizes).

21. Smallholder farmers in the LMDP-II project areas have suffered the greatest losses in livestock, which impact severely on this significant livelihood option. As the WFP points out, “this information can be utilized for targeting purposes and also for the design of specific livelihood programs aiming to increase ownership of productive livelihood assets such as livestock.”¹⁹

22. As in many rural areas throughout the world, there are clear gender roles in livestock - in other words, men and women tend to have established roles. Women in Kyrgyzstan often engage in transhumant grazing jointly with men. In some remote mountainous areas, women even graze livestock without men, who are at that time engaged in cropping in the valley. Women are engaged in milking animals, processing dairy, wool, and meat products. They also tend to look after livestock offspring and sick animals²⁰.

23. Gender relations in the Kyrgyz Republic vary somewhat from region to region and village to village. Family decisions are generally made jointly and both men and women contribute to household income, directly and indirectly. Although the society is ostensibly patriarchal, and men traditionally had the most visible public roles, the current reality is mixed. Nonetheless, in public gatherings, patterns of deference to men, especially elderly men, are the norm, but subject to change depending on the topic and venue. In some villages in the south, women rarely attend public gatherings while in Issyk-Kul, the oblast level ARIS’ gender specialists concluded that the main gender issue is the relative passiveness of men. Village mobilizers used the results of focus groups to introduce the priorities of women in village meetings during the first year of mobilization. ARIS field staff observed that in most villages during subsequent years of the AISP, women took an increasingly active role in setting the development agenda, having discovered that the process is genuinely open and inclusive. With regard specifically to women’s participation and voice in PCs, the following findings emerged from a study in Osh:

- Customary regimes for livestock herding put women at some disadvantage, as they place the man at the head of the household and thus property rights, including animals and pasture land use rights, are attributed to him even when women play a critical role in livestock keeping. When a woman divorces, she loses all rights to the land, pasture and animals to her former husband. Nonetheless, customary use regimes are viewed positively when compared with the formal system.
- In the newer “Soviet” villages, women achieve power through more formal structures, e.g. women’s councils, but these structures are quite weak.

¹⁷ Food Security Assessment. Kyrgyz Republic. WFP. September 2012.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Women and Pastures in the Kyrgyz Republic on a case study of Chong Alai valley (Osh), A. Undeland, 2009.

- Public decision-making tends to be dominated by men and therefore their interests. Women's attendance at public meetings is not seen as "appropriate" and domestic duties in the home make it much more difficult for them to attend such meetings in practical terms.²¹
- The same report points out that at a minimum, development programmes for pasture management "need to mandate women's participation in decision-making entities for natural resources management and planning of improvements." LMDP-II will build on these lessons and findings and seek ways to ensure that women and poorer sections of the Programme target areas are able to play as active roles as possible in ensuring their priorities are heard. The Project offers an opportunity to scale up the comprehensive gender strategy set out in the LMDP-I (Working paper 7) and specifically to strengthen coping and diversification strategies.

C. Target Groups

24. LMDP-II will have an important focus on poor households that currently depend on livestock and an increasingly fragile environment for their livelihoods. The primary target groups have been defined as follows: (i) vulnerable households primarily among small livestock producers; (ii) women-headed households; (iii) other livestock producer households; and (iv) community veterinarians. LMDP-II will work to reduce the vulnerability of community-based pasture management systems, improve the quality and access to veterinary services, diversify livelihoods, and develop dairy value chains for income. Specifically, LMDP-II will target 190 Pasture Users Unions (PUUs), covering approximately 380,000 rural households and a rural population of more than 2,900,000 persons, or about 11,200 people in some 1,985 head of households per PUU:

- **Vulnerable households primarily among small livestock producers.** These households are identified by the *Aiyl Okmotu* (AO)²² and may be issued "Social Passports" that enable them to access government welfare schemes if they meet the criteria. In almost all cases, these are the most vulnerable and poorest households in an AO, which is basically equivalent to the area covered by a PC/PUU. Their land holdings are meagre and the number of sheep and cattle they keep is small. In some cases they also use the pastures for collecting dung and fuel, bee keeping, foraging, herbal medicine gathering and eco-tourism. Beekeepers and plant gatherers do not compete with other pasture users, although they may pay access fees to the AO. Some of them may be traditional herders (similar to pastoralists) who spend up to six months in the summer pasture. These heads of households can also consist of families that have few animals - usually up to 10 heads of sheep, or one to two cows or perhaps a horse, which they manage on their own or combine with a few other households and rotate pasturing responsibilities within the group. Usually one livestock unit (cow or horse) is equivalent to about five heads of small ruminants. They graze their animals in the winter pastures exclusively and keep the animals in the homestead. These heads of households are often unable to compete with other livestock owners for grazing space and unable or unwilling to pay herders for their services. Under the old pasture management regime these owners were increasingly marginalized regarding pasture use, although their animals might account for a higher proportion of family income, and constitute a greater proportion of their assets than other livestock owners. They may have less than 3 hectares of land, have no machines and can barely earn enough for their large families. While difficult to estimate the prevalence of this group to the total target group, it is believed to be relatively large.
- **Women-headed households and women.** Due to the rise in migration of men, women-headed households are becoming increasingly prevalent in all rural areas. In addition to their farming duties, women care for livestock and assume such work as milking goats and cows, and raising domestic animals (such as poultry). In some villages, women oversee the breeding of livestock. Women are primarily responsible for taking the animals to high summer pastures. The smallholder livestock producing households are mainly involved in subsistence

²¹ Ibid.

²² Sub-district with elected government

and some small surpluses of products are marketed locally or exported to the neighbouring countries (mainly to Kazakhstan). The main bulk of processing is consumed within the household. Female-headed and poor households are a primary target for LMDP-I and LMDP-II. Every effort will be made to include women including women household heads in sensitization and training activities. According to the WFP Food Security Assessment in March 2012, female-headed households had fewer livestock (41 percent) than male-headed households (56 percent). Finally, and critically, although there is now growing international understanding that climate change impacts men and women differently, there are still few projects that have applied both a climate and a gender lens, and therefore there is a lack of evidence of what works and what doesn't. The LMDP-II offers an important opportunity to understand how such interventions can contribute to closing the gender gaps in economic empowerment that are exacerbated by climate change.

- **Other livestock producer households.** These are livestock producers who have more than two to three cows and 18 heads of sheep and goats. They may have some farm machinery left over from the Soviet times. In rare cases, they have been able to maintain or have purchased the machinery on their own. They usually hire herders to take their animals to the summer pastures. Though difficult to estimate they might represent about one-quarter of the target population.
- **Community veterinarians.** A private veterinary service has slowly been growing in the PUU/PC areas. Some of the community vets (CVs) cater to villages easier to reach, thus leaving a widening gap in the demand and supply of services. Many of these community veterinarians are nearing or exceed reasonable retirement age and there is an urgent need to address this gradual attrition through promotion of others and incentives to encourage young people to take up this work as a viable career in the current economy. This is an initiative that will be taken up by the Project. While the CVs represent a very small proportion of the PUU/PC population, their multiplier effects are large because they are an integral part of the livestock producer community and therefore an important target group for the Project.

D. Targeting Strategy

Operational measures for identification of target groups

25. The results of the IFAD's study on vulnerability to climate change (2013) have guided the geographical targeting of the LMDP-II, and the selected oblasts are all categorized as highly vulnerable (see above).

26. To assist in the Project activity distribution among the target groups and to aid the identification of the main target groups, the strategy to be followed is at four levels: (i) collection of poverty data from the rayon level, (ii) identification of the different households at the village level through the Social Poverty/Social Passport, (iii) verification of the social card and passport holders, to identify women-headed and socially vulnerable head of households, and (iv) a community wealth ranking exercise based on livestock units to identify the first and third target groups namely the socially vulnerable and the other livestock producer head of households. Vulnerability to climate-related risks and hazards are also a key criterion, and are set out in detail in Working paper 3.

27. The rayon level collects cumulative information from the AO on the poverty levels of the villages while it is at the AO that the Social Poverty Cards/Social Passports are issued to the family. There is a tendency for the AO to issue these cards to non-poor households and hence there is a need to do a physical verification of these households. It is necessary to undertake the step at the AO to confirm the card holder and the poverty levels of the head of households. The verification process of the Social Poverty Card/Social Passports should be done by ARIS specialists who can get first-hand information from the targeted households to identify the women-headed households and indirect pasture users.

28. To identify the other target groups (such as smallholders), wealth-ranking exercises²³ will be conducted as part of the social mobilization stage. This needs to be done in a systematic manner with the establishment of pasture user groups (PUGs) in each village. To aid this, the ARIS staff will undergo capacity building by an international consultant on Rapid Rural Appraisal, especially wealth-ranking exercises, to identify the two groups of farmers based on units of livestock and other factors. Generally, socially vulnerable head of households will have either a large unit (cow or horse) or five small units (sheep or goats), but not both. This exercise will establish the difference in the livestock units across the operational areas and will feed into the social analysis of the Project. The wealth-ranking exercises should be done with as large a population as possible in the villages to get general consensus on the livestock holdings of the producers.

29. The process for targeting will be documented by ARIS and the baseline survey should include indicators on well-being and heads of households, and structured into the M&E so that targeting can be monitored throughout the Project duration to identify the flow of benefits and inclusion of the vulnerable.

Operational measures for ensuring inclusion

30. The PUUs will be structured to ensure that all stakeholders have a clear voice in decision-making. The unions will have equal representation of different types of pasture uses and will be part of the general assembly. There will be continuity of the target groups in the mobilization process but with strict adherence to a full quorum ensuring that women and the poor are adequately represented at the decision-making meetings. Below is the process to ensure inclusion in the decision-making process as adapted from the AISP but with special provisions to ensure inclusion of vulnerable groups and women. APIU will work with the team at ARIS to strengthen the process of mobilization and inclusion by identifying guidelines that will build into the gender strategy. In the AISP, the table of responsibilities²⁴ (division of labour at household and community level) was created as a product of the roundtable meeting, and this will be used in all subsequent mobilization and implementation phases to make sure that different types of decisions and plans involve appropriate people, especially when the tendency may be to overlook the distinction and to target information materials or training to the wrong people. ARIS will ensure through their monthly reviews at the oblast level simple documentation of the process and demonstrate the benefits of a poor-poor and gender-sensitive approach in mobilizing pasture communities. The documentation will include the analysis of the features (culture, norms, lines of accountability) of the concerned institutions (AOs, PCs, PUU, communities with their strong hierarchical kinship structures; and the Micro Project Groups (MPG), will need to be analyzed in their social composition) that can favour or hinder targeting poor people and women.

E. Gender Mainstreaming in LMDP-II

Gender in Management

31. As in LMDP-I, gender will be mainstreamed across all Project interventions and institutional arrangements, with a special focus on women-headed households. The Project Director will continue to have the overall responsibility for ensuring that gender mainstreaming is given sufficient attention - this will now include understanding and documenting gender-specific dimensions of climate change adaptation. In LMDP-I, the current M&E specialist - gender focal point of AISP - will become the M&E, gender and KM manager and an M&E, gender and KM expert will be recruited to work under her.

²³ The basic idea of the wealth ranking through rapid Rural Appraisal exercises is to quickly collect, analyze and evaluate information on rural conditions and local knowledge. This information is generated in close co-operation with the local population in rural areas. Therefore, the research methods had to be adjusted to local conditions, i.e. they had to meet the communication needs of the people. The main objectives of this exercise are: (a) To investigate perceptions of wealth differences and inequalities in a village (b) To identify and understand local indicators and criteria of wealth and well-being (c) To map the relative position of households in a village

²⁴ Table of responsibilities for animal husbandry and pasture management includes differentiating the roles of men and women, both seasonally and spatially.

They will coordinate and manage all M&E, gender and KM related activities. Gender will be a cross-cutting issue in the Terms of Reference for all staff associated with the Project.

32. LMDP-II will use the same gender and inclusion strategy developed for LMDP-I, based on the IFAD Gender Policy 2012 to guide planning, implementation, monitoring and evaluation of all components of the programme. The strategy will be shaped by guiding principles and include a simple action plan to help in monitoring gender and inclusion. This is set out in Working Paper 7 of LMDP-I's PDR. Essentially, LMDP-II offers an excellent opportunity to scale up potential gender gains in the livestock sector and in terms of resilience to climate change. LMDP-II will in addition assess synergies and learning opportunities with related IFAD initiatives, particularly the following initiatives that are starting up at the time of writing this Appendix:

- FAO-IFAD-WFP Joint Programme "Accelerating progress towards the economic empowerment of rural women," which identifies pasture management and climate change as focus areas and thereby offers clear scope for sharing knowledge and experiences;
- IFAD grant to support a regional Aga Khan Foundation "Mobilizing Public-Private Partnerships" in support of women-led small business development in Naryn Oblast;
- any relevant lessons emerging from a UNDP study on gender and climate change due out shortly (communications indicate a sparse evidence-base in the rural sector, and LMDP-II can make a valuable contribution in addressing this knowledge gap by sharing Project experience on impacts on the coping mechanisms and resilience of women and men.);
- FAO-IFAD-UN Women-WFP Joint Programme on the Economic Empowerment of Rural Women: complementary activities could include JP partners assisting with developing the gender skills of APIU and ARIS, and developing skills of women to join and participate in PUUs and committees. Partners could collaborate on networking and policy dialogue on addressing gender issues in pastoralist communities, and on strengthening the gender dimensions in M&E and knowledge management systems.

Gender at the programmatic level

33. A gender and inclusive lens will be applied across all components of the Project to ensure that they are reflected in the implementation of the Project. This is a basic guideline for the APIU to develop further with ARIS on mainstreaming gender and inclusion into the Project activities.

F. Monitoring and Evaluation in Targeting and Gender

34. Assessment of the targeting performance should be a normal part of Project participatory M&E at the field level. The Project will ensure through its M&E that it captures issues related to targeting and should include information on participation and decision-making at the different levels. In addition to having sex disaggregated data, the M&E system should be able to track Project benefits to the various target groups and to report on the same to guide management decisions for effective implementation.

35. Special studies will be undertaken within the Project cycle to understand the impact of Project interventions on women and changes in the households. The Project will publish a bi-annual newsletter featuring good practices and human interest stories that will be disseminated to all important stakeholders. For the communities, they will develop context-specific information materials that are required by the communities. Consideration will be given to ensure that the information materials are gender sensitive and promote gender justice messages alongside those of climate change. An important product would be documenting indigenous livestock management knowledge systems and evaluating how these could support increased resilience, and better support vulnerable groups through diversifying livelihoods.

36. The table below summarizes the main gender dimensions by Component.

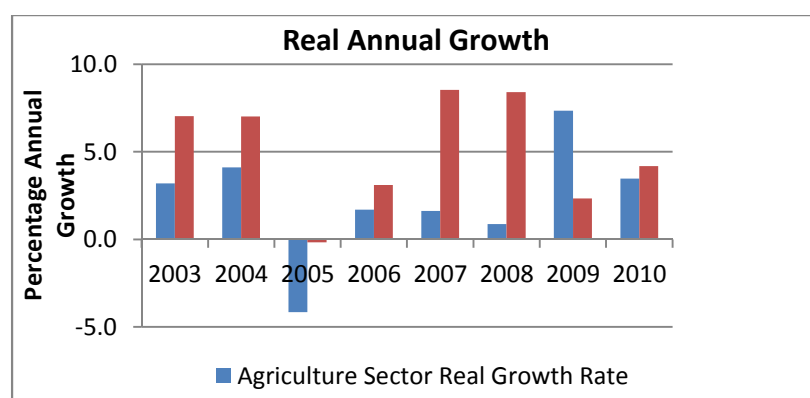
Component 1- Community Based Pasture Management and Vulnerability Reduction	<p>Community risk-mitigation pasture management and investments.</p> <p>Upgrading CPMPs - As part of the process of improving pasture management plans, training will be provided to PUU members and PCs to ensure more active participation of women/vulnerable head of households in planning and decision-making.</p> <p>Technical training for adaptive management – this will include gender, targeting, M&E, governance and conflict resolution.</p> <p>Strengthening PUUs – the governance training and advice will include an assessment of preferential arrangements necessary for subsidized or priority access to women-headed households and other vulnerable groups. Fully developed CPMPs should include a vulnerability assessment including along gender lines.</p> <p>CPMP investment projects – focus groups including young people, women and vulnerable groups will be consulted on their priorities and feed into the selection process.</p>
Component 2- Livestock Health and Production Services	<p>2.1 Strengthening Veterinary and Community Animal Health Services</p> <p>Establishing and Training Animal Health Sub-Committees - A comprehensive capacity building programme to renovate the veterinary service delivery system will include incentives for the inclusion of, women and members of poor households in the profession.</p> <p>Community Veterinarian capacity-building – In line with LMDP-I gender strategy, women will comprise at least 30 percent of trainees.</p> <p>2.2 Student Incentive Programme</p> <p>Scholarship programme – this will create opportunities for students from the poorer areas and from designated poverty households within the Project oblasts to attend the veterinary faculty at KNAU. In order to increase the portion of women entering the faculty from the current low level, a target has been set to work toward 30 percent of the candidates being women. The programme would be managed and administered by the KNAU faculty. If there are insufficient qualified students meeting the necessary poverty and gender criteria, the scholarships would remain in abeyance until the criteria could be met and would not be allocated to other students.</p>
Component 3- Diversification and Market/Value Chain Initiatives	<p>The Component places a strong emphasis on women. It aims to encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women – can build upon, improve and expand existing value chains and develop additional sources of income, becoming service providers for the wider community.</p> <p>25-30 grants for economic diversification to be disbursed, at least 40 percent to women's groups.</p> <p>Women's Milk Processing Groups. In general, the units to be set up by these groups would be established in areas that are beyond the area that could be readily accessed by a milk processing plant. Plans are to support the establishment of 10 processing units at a cost of about US\$15,000 each with a model similar to that used by the Kyrgyz New Zealand Rural Trust in Naryn Oblast. Groups would typically comprise 5-7 women who are traditionally involved in milk processing and selling of dairy products, including: kefir (liquid yogurt), smetana (sour cream), curd (cottage cheese), condensed milk and kurut. Products would be certified and positioned as safer and higher quality than those normally sold in the market. During the summer season a group would be expected to process on average 180 litres per day. Like the MCCCs, the key to success will be to develop solid partnerships with buyers in the market. However, it has also been shown that the groups can sell to kindergartens, schools, government institutions and shops.</p> <p>A processing unit would have a concrete floor, sewage and running water systems, hand washing and toilet facilities, tiling, an uninterrupted supply of electricity and glass windows. It would be equipped with a set of kitchenware (vats, pots, milk cans, stove etc), a milk pasteurizing unit, two cream separators, one butter churn, two cheese tanks and two refrigerators. In addition, a set of tools would be provided to measure the water content and milk temperature. This last feature directly addresses health, safety and climate change risks to women's livelihoods.</p>

Component 4- Project Management	<p>Project Director to have overall responsibility for gender equality</p> <p>Gender/M&E Manager and specialist positions in place: they will be included in climate change sensitization activities for LMDP oblasts, where there is a high vulnerability.</p> <p>The LMDP Gender Strategy provides for a participatory and inclusive M&E, which links with advocacy objectives by providing evidence-base of what is working and what is not to reduce gender disparities. Policy lessons could be channelled to policymakers through the activity on policy dialogue.</p>
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Appendix 3: Country performance and lessons learned

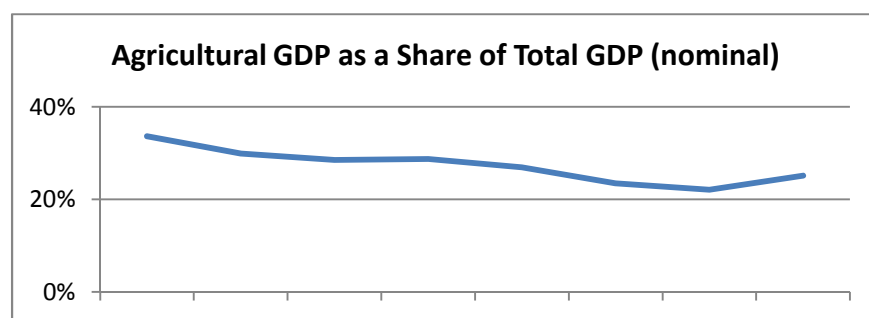
A. Introduction

1. The Kyrgyz Republic is a landlocked country of 198,500 km² bordering Kazakhstan, Uzbekistan, Tajikistan and China. The Kyrgyz Republic is very mountainous, with almost 90% of the territory 1500 m above sea level. Due to its geography, the population is concentrated in river valleys and along lakesides. Nearly one-half of the country's total area—some nine million hectares—is pastureland which plays an important role in the country's economy, society, and culture/Economic Growth.
2. With an average GDP per capita of US\$864, the Kyrgyz Republic is classified as a low income country (below US\$1,005). The Kyrgyz Republic's GDP is the lowest of the 27 former Soviet States; in contrast, neighbouring Kazakhstan ranks 5th and Russia ranks 1st. With their strong economies, both of these countries are very important to the Kyrgyz Republic as both product markets and sources of migrant employment and therefore remittance incomes. In fact, in 2010 Kazakhstan and Russia accounted for 12% and 15% of the Kyrgyz Republic's exports respectively. Any slowing of these regional economies and the associated slowing in remittance flows would have an immediate impact on Kyrgyz households (HH). In 2009, total exports equated to 55% of imports. In 2012 the budget deficit was widened towards 14% of GDP (compared to around 6.4% in 2011, to 5.1% of GDP in 2010, 1.5% in 2009 and a slight surplus in 2008)²⁵.
3. Agriculture, tourism, mining and textile production are important to the growth of the Kyrgyz economy. Since 2000, growth has been volatile. Growth relied primarily on agriculture in the 1990s (above 9% in 1996-1999). After 2000, growth was dominated by services with demand fuelled by remittances at 6.9% (compared with 1.9% from 1996-1999). Construction has grown strongly since 2000, at an average of over 10% annually also due to remittances. Political instability in 2005 and 2010 had significant negative impacts on economic growth.



4. Although 65% of the population is rural, and 31% of the total workforce works in the agriculture sector, agriculture only contributes 21% of total GDP. But despite its declining share of GDP, agriculture and livestock remain a structural backbone of the economy, providing substantial employment, playing critical roles in both HH food security and consumer price stability, and as a leading source of exports - contributing 29% of total exports in 2009. The continuing decline in agriculture's contribution to GDP indicates that efficiency in the sector is low and as a consequence incomes in agriculture are also low, with subsistence living contributing to everyday survival.

²⁵ WFP – "Follow Up Emergency Food Security Assessment in the Kyrgyz Republic". August 2011.



5. The Kyrgyz economy is recovering from 2010's political crisis. The domestic crisis posed significant challenges to the economy. Border closures, especially with Kazakhstan, hampered Kyrgyz companies and households involved in trade. The Kazakh border is a major route for livestock, dairy, vegetable and fruits exports to Kazakhstan and Russia and a route for importing wheat, flour, oil and sugar, as well as fuel and machinery spare parts to the Kyrgyz Republic. The Uzbek border is a major route for seasonal exports of vegetables and of livestock, as well as imports of nitrogen fertiliser. The security situation led to the lowest tourist arrivals in almost a decade. Interruptions in the spring farming season and problems in harvesting and marketing led to losses in agricultural production. Rising global food and fuel prices have posed additional challenges. In 2012, the economy contracted by 0.9% with inflation of 2.7%. However, in the medium term the Kyrgyz economy is expected to grow by about 6% thanks to regional growth.

6. In 2010, industrial growth was held up by exports to markets in the Commonwealth of Independent States (CIS) - particularly Russia - as well as by the high and rising price of gold amid growing turmoil on international financial markets. Nonetheless, expansion across sectors has been broad-based. In the third quarter construction returned to growth, stimulated by rising remittances from Kyrgyz workers with jobs abroad. The important agricultural sector has performed better than was expected earlier in the year.

7. Rangelands are a major natural resource in the Kyrgyz Republic, covering an estimated 45 percent of the country, or about 9.18 million ha. An additional 1.13 million ha or 5.6 percent of the total land is classified as forest land without forest cover, which means they are largely shrublands that are utilized as rangeland for grazing. Arable land only makes up about 7 percent of the country and the crop land is concentrated in low lying valleys and foothills. Most of the rangelands are located at altitudes between 1000 and 3500 m, in valleys and mountain slopes. About one-quarter of the country's rangelands are found at elevations greater than 3500 meters. Of the country's total rangeland, 43 percent has been classified as summer pastures, 30 percent as spring-autumn pasture, and 25 percent as winter pasture.

8. Following independence in 1991 and the transition from a centrally planned economy to a market system, agriculture was restructured. This resulted in a drastic decline of the livestock population, with sheep dropping from 9.9 million in 1990 to 3.5 million in 1998. The cattle population declined from 1.2 million to 830,000 in the same period. The number of yaks went from 80,000 in 1990 to only 17,000. During the early years of transition, sheep, that were allocated as a property shares to people when the collective and state farms were dissolved, were what people survived on for subsistence and to barter for other necessities. The number of livestock has been increasing rapidly during the last decade. According to official statistical data, there were about 5.4 million sheep and goats in Kyrgyzstan in 2012, but other data suggests that this number is significantly underestimated, with the real number of sheep and goats edging closer to 6.5 or even 7 million.

Livestock number 1990-2012 (in thousands)

Year/livestock	1990	1995	2000	2004	2006	2008	2009	2010	2011	2012
Cattle	1,205	869	947	1,004	1,074	1,168	1,278	1,298	1,338	1,367
Sheep and goats	9,972	4,275	3,799	3,680	3,876	4,252	4,816	5,038	5,288	5,423
Horses	313	308	306	340	345	356	372	378	389	399

Source: National Statistics Committee

9. Livestock in Kyrgyzstan was traditionally grassland based, but owing to mobility restrictions during the Soviet period it had become heavily relied on imported feed grain for winter months. With the post-Soviet transition to private farming, livestock rapidly reverted to being grassland dependent. Pasturelands face both area and productivity reduction (degradation). According to Giprozem (State Land Management Institute), about 35 percent of all pasture lands has been degraded with most severe degradation of the winter or near settlement pastures reaching 70 percent in most locations.

Pasture Degradation Rates

Pasture type	Pasture area (thousand ha)	%	Degraded area in ha	Degraded areas in %
Summer	3,951	43	1,432	36
Spring-autumn	2,756	30	1,378	50
Winter	2,440	27	1,718	70
Total	9,147	100	4,528	49

Source: Pasture Department Annual Report for 2012

10. Several factors are responsible for pasture degradation. The most significant ones are the increasing number of livestock, ineffective management of the resource by central and regional government which led to de facto 'open access' unplanned grazing, and lack of skills on planning and management of livestock production among farmers. Pasture resources play a crucial role in life of about 66% of population living in rural mountainous areas which depend on livestock as a major source of livelihood. These communities also make the poorest segments of rural population in Kyrgyzstan.

B. Threats to Economic Growth

11. Political instability in the Kyrgyz Republic in 2005 and 2010 had negative impacts on economic growth. While GDP growth averaged 5% between 2003 and 2010, GDP shrank by 2% and 1.4% in 2005 and 2010 respectively²⁶. Instability and global economic uncertainty also impacted on consumer inflation - while inflation has averaged 8.3% over the period 2003-2009, it spiked in 2008 to 25% and estimates are that in 2013 inflation would be around 6.5%.

12. Downside risks are numerous, however. The most obvious is that a renewed outbreak of political instability would threaten the growth outlook. In addition, political interference in the gold sector could disrupt the inflow of valuable export earnings. Most importantly, if a second global recession in three years were to hit Russian and Kazakh growth by way of its impact on oil prices, this would damage Kyrgyz trade and remittances in particular, with strongly negative consequences for industry, construction and the retail sector in the Kyrgyz Republic.

²⁶ In both 2005 and 2010, governments were overthrown in popular revolutions.

C. External Sector

13. The current-account deficit narrowed slightly in US dollar terms in 2011, to US\$380m, or 6.4% of GDP. Import costs rose rapidly in 2011, owing to high international prices for food and fuel, as well as to the recovery in domestic demand. However, in 2012 the external account deteriorated rapidly to about US\$ 1.3 billion or around 14% of GDP.

14. Foreign state debt stood at about 58% of GDP by the end of November 2010 and had reached nearly 60% of GDP by June 2011, while the entire sovereign debt equalled 63.6% of GDP. Furthermore, in 2012 the budget deficit was widened towards 14% of GDP (compared to around 6.4% in 2011, to 5.1% of GDP in 2010, 1.5% in 2009 and a slight surplus in 2008). This means that the country continues to require recourse to additional borrowing, notwithstanding the large amounts of foreign aid it receives and a number of debt write-offs from foreign creditors. Donor funding is partially in the form of loans and debt servicing makes up an increasing share of the state budget.

D. Policy Trends

15. The government will come under pressure to ensure that budget revenue continues to meet targets. Policy will be aimed at mitigating the impact of external economic shocks, cutting inflation, reducing poverty and restoring the economy to faster growth. Preventing the external deficit from widening too greatly will also be a crucial policy concern.

16. The Kyrgyz Republic has developed a policy programme with the IMF. It agreed a US\$100m, 18-month arrangement under the Fund's exogenous shocks facility (ESF) in December 2008, and further funding was forthcoming after the unrest in 2010. In June 2011 the Fund reached agreement on a further three-year lending programme, equivalent to around US\$106m, under its rapid credit facility (RCF). Meeting the IMF's criteria will have to be balanced against preventing further social instability. An international donor conference in 2010 agreed to provide the authorities with US\$1.1bn in 2010-12. Much of this is earmarked for essential public services, social welfare support and reconstruction efforts, following the violence in April-June 2010.

17. Political divisions, social concerns and vested interests will impede progress on implementing the structural reform agenda. The previous government pledged to make foreign direct investment (FDI) a priority, a pledge that the new administration has repeated. However, FDI inflows are likely to remain low, and will not be helped by recent signs of attempts by the government to interfere in the gold sector. A more difficult international economic environment than in 2007-08 will also limit the flow of FDI into the Kyrgyz Republic.

18. For the most part, only foreign investors familiar with the business environment in Central Asia (mostly Russian and Kazakh companies) will seek opportunities in the Kyrgyz Republic. The sale of assets to such firms is unlikely to attract controversy, owing to the long-standing historical links with these countries.

19. *Fiscal policy.* The state budget deficit widened to 4% of GDP in 2012. The provisional authorities' decision to reverse steep tariff rises for electricity and to waive some newly introduced energy taxes had an impact on budget revenue (although electricity tariffs have since risen slightly). The government will thus be reluctant to resort to steep tariff increases to address any revenue shortfall.

20. *Monetary policy:* The effectiveness of monetary policy will remain constrained by the underdeveloped nature of the domestic financial sector. The weakening of the Som that began in late 2008 continued until early 2011. In response to the threat of inflation, the discount rate has been raised in every month since September 2010, reaching 13.5% in early November 2011. With inflation dissipating and the economy sliding down into recession, however, it was then cut sharply in 2012 and dropped below 3% late in the year.

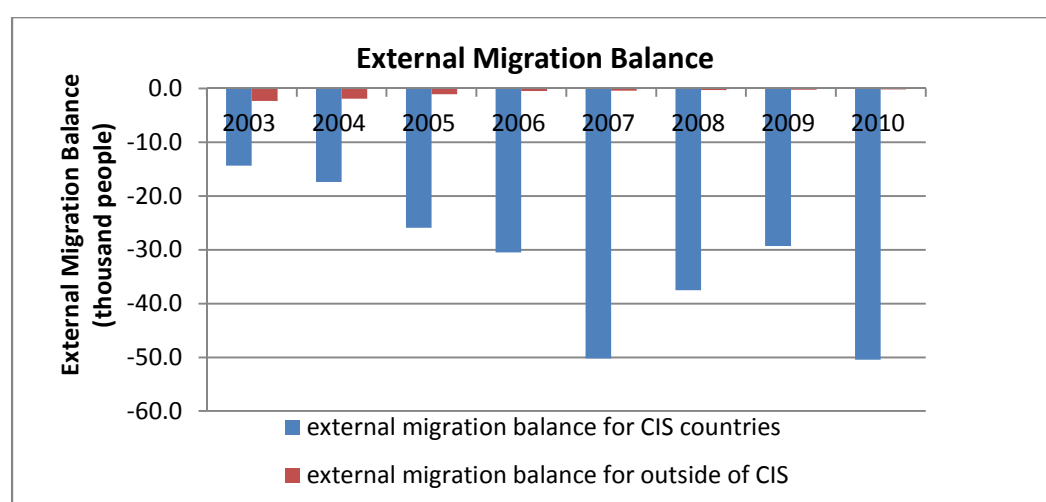
21. The national currency, the Kyrgyz Som (KGS) continued to depreciate against the US Dollar since 2010, reflecting the strengthening the US Dollar internationally and a reduction in export earnings. The exchange rate in July 2013 was US\$1:KGS 48.80, compared to 47.1 in late 2012.

E. Inflation

22. Average consumer price inflation reached 16.5% in 2011 but slowed dramatically in 2012, to just 2.7%. Inflation slowed to 1.1% since beginning of 2013.

Remittances

23. Remittances are important both to clients as well as a source of fee income for banks. Russia and Kazakhstan remain key trading partners of the Kyrgyz Republic and a major source of remittances. Remittances grew exponentially from US\$70 million in 2003 to US\$1.2 billion in 2008, falling back to US\$983 million in 2009 with recessions in Russia and banking crisis in Kazakhstan. In 2012 workers' remittances rose to US\$ 1.8 billion.



Lessons Learned

24. To address growing biological and production degradation of rangeland, WB and IFAD with participation of other bilateral donors provided technical and financial support for pasture management reforms.

Lessons learned from the earlier Sheep Development and Agricultural Support Services projects

25. The Government started implementation of the AISP in March 2008 as a part of the country agriculture sector programme, which started in 1996 with the Sheep Development Project (SDP), a first agricultural investment project funded by the IDA (US\$11.58 million), IFAD (US\$3.5 million), and the Kyrgyz Government. The SDP's objectives were to increase profitability and efficiency of sheep breeding and wool production in country, to support privatization and establishment of extension and other support services to farmers, including wool sale and veterinary services, and improve efficient usage and preservation of natural pasture resources.

26. Livestock research concentrated on sheep breeding and pasture improvement. Pasture research under the project consisted of two aspects - developing relevant techniques for monitoring the status of natural pastures; and research aimed at improving sheep feed production and fodder conservation. Monitoring was undertaken by *Gyprozem* (Land Management Research Institute) and focused on 300 key survey plots around the country, where vegetation maps have been prepared based on aspects such as botanical composition, cover and other parameters. Project facilitated developing of new approach to pasture management through lease arrangements to address issues

of degradation of winter and spring-autumn pastures. This was a first step towards pasture management reforms and culminated with the adoption of the Resolution on Pasture Lease and Use (Government Order No. 360, 2002), which regulated management and use of pastures. Project suggested to place a value on various pastures types, as part of the process of allocating individual or group pasture grazing leases. Associated with this allocation there was a proposal to provide incentives and disincentives through manipulation of rents and land taxes to encourage sheep farmers to move their flocks to summer pastures and use their leased resources in a sustainable fashion but it was not implemented mainly due to completion of the project and complexity of the approach itself to be used by farmers.

27. Pasture production and fodder conservation research was implemented by the Kyrgyz Pasture Institute and concentrated on grazing trials to show the long-term beneficial effects of protecting spring pasture intermittently to encourage regeneration.

Major lessons learned from the SDP relevant to LMDP-II:

- Project design needs to maintain flexibility to timely and adequately respond to changing global and country political, economic and social factors and environments. The decline of wool prices globally coupled with low competitiveness of Kyrgyzstan's sheep wool drastically reduced livestock number in country during the initial years of project's implementation. Some investments identified at appraisal stage were not feasible and even not appropriate later in implementation, and sound technical and economic supervision could address these issues with redirection of project activities in time and effectively.
- Project design needs to pay greater attention to the technical and absorption capacity of the implementing agencies and parties. Low capacity of the Ministry of Agriculture, Livestock and Pasture Institute, as well as of beneficiaries undermined project's activities. Projects should not be too complex and fragmented in terms of implementation arrangements.
- Projects need to be centred in the government agency with capacity building activities focused as much as possible on related governmental institutions to ensure replicability and sustainability of the results. With the high turnover in government agencies, this might be difficult to achieve and new approaches need to be considered to ensure that developed knowledge is well documented and widely disseminated to all stakeholders to ensure its availability and use.
- External technical assistance need to be closely interlinked with implementing agencies and parties to ensure ownership and maintain commitment.
- Establishment of production groups need to be bottom up and demand driven. Externally established organizations and groups require a commitment from the government to support them, and long term support from donors to ensure their viability.
- Investment in hardware (equipment, machine, etc.) without investment in operating skills leads to procurement of goods that are either not suitable or are under-utilized and as such a waste of resources.
- There is a need to facilitate well designed and a broad awareness campaign to ensure public support to sectoral reforms and transparency in utilization of resources. For the successful awareness program, project needs to have built-in sound monitoring and evaluation program.

28. SDP was followed by the Agricultural Support Services Project (ASSP) funded by the Kyrgyz government, IDA, IFAD, Swiss and UK governments. ASSP objective was to improve incentives for, and productivity, profitability and sustainability of Kyrgyzstan's agriculture through supporting arable land privatization and restructuring of Soviet era collective and state farms; supporting establishment of the extension services to provide agricultural advice to the newly emerging private farmers; establishing framework and conducive environment for seed industry development; expanding agricultural market information system; strengthening Ministry of Agriculture and Water Resources in

providing veterinary services to rural population. The project started in September 1998 and was completed in June 2005. The total cost of the project was US\$30.2 million.

29. In response to severe droughts and early snowfall in 2000, GOK and IDA agreed to include specific support for farmers in poor mountainous regions particularly affected by these natural calamities through providing them with quality seed for multiplication and on-farm use. Farmers were to establish cooperative Community Seed Funds (CSFs) which would receive and distribute the seeds, collect repayments (in the form of seed, with a 25% “fee” added) and redistribute these seeds to more members each subsequent year. The project financed the initial start-up capital in form of seed grants and the operational expenses of a group of competitively selected local NGOs that provided initial institutional support to the new CSFs. Important objectives, in addition to the immediate relief and poverty alleviation aspects, were the dissemination of improved technology as embodied in high-quality seed, increased food security, crop diversification, generating farmer awareness of the benefits of quality seeds, and improving incomes of poor farmers. The approach to the establishment and facilitating CSFs was replicated later in the AISP.

30. Already at the final stage of the ASSP in 2006, there had been one year pilot program implemented on management of pastures with the engagement of the local communities in four areas of the country. The pilot’s objectives was to develop and test approach to the management of pastureland to (i) ensure equitable access to, and socially and environmentally sustainable use of, these vast and valuable grassland resources, (ii) promote decentralization of pasture management to local self-governments and further to community-based organizations and thereby improve resource access and service delivery to the rural poor; and (iii) strengthen national expertise and develop practical experience with decentralized pasture management and thereby provide confidence-building evidence to policy makers to reform the legal, regulatory and institutional framework governing pasture management. Funding was provided for: a review of existing pasture legislation and the development of a new (draft) pasture law and regulations; mobilizing and training communities and local governments in four pilot communities and establishing community-based pasture management institutions and processes; an inventory of the communities’ pasture resources and the preparation of pasture maps; and the development, based on the experience gained during the pilot, of training material for decentralized community-based pasture management. This new sub-component was implemented by the APIU and the Pasture Department of MAWRPI, in close cooperation with the Community Development and Investment Agency (ARIS), the RASs, the TES Center (a non-governmental agricultural extension provider). The work was also conducted in collaboration with the USAID-funded Land Reform and Market Development Project.

Major lessons learned from the ASSP relevant to LMDP-II:

- Broad-spectrum change in a complex sector where there is limited experience can be made effective through a learning-oriented and continuously adaptive program approach aimed at establishing a platform for future development.
- Project design and implementation arrangements need to correspond to the capacity of all implementing agencies and beneficiaries.
- Major policy and legislative reform need extensive technical support and adopted through wide consultation processes.
- A strong M&E system is particularly important for projects that pioneer new approaches, and may need adjustment as implementation progresses. Monitorable indicators to measure achievements against the project objectives, and M&E arrangements, need to be detailed prior to project commencement including processes that enable learning from evaluation results.
- Effective donor cooperation at the country and project levels significantly improves the prospects for achieving development objectives by generating positive synergies, minimizing duplication and overlap, avoiding conflicting and/or confusing advice, and facilitating mutual support across projects.

- While financial independence for providers of agricultural services is generally desirable, self-financing options need to take account of the public goods nature of some services, the special needs of poorer rural communities, and the rate at which communities and entrepreneurs can adapt to a pay-for-service environment.
- Inclusion of women and poorer families in rural development can be particularly effective if based on proactive investigation of the needs of vulnerable groups, practical social and economic measures to respond to these needs, and monitoring and adapting these measures during implementation.

Lessons learned from the Agricultural Investment Support Project (AISP)

31. AISP was launched in 2008 and is an on-going operation funded by IDA and IFAD (US\$9 million in grant co-financing for all project activities). The Swiss Government provides parallel financing (CHF 2.14 million or about US\$1.8 million) in support of a final phase of institutional development assistance for the Rural Advisory Support (RAS) system. The project received additional IDA financing from the Global Food Crisis Response Program (GFRP) for community seed funds (US\$ 4.0 million) and additional EC funding (6.7 million Euro) under the European Union (EU) Food Crisis Rapid Response Facility. AISP was designed with consideration of the results of the SDP and as a follow up of the ASSP. The experience gained from the pilot was reflected and up-scaled in the pastureland management component of the AISP.

32. AISP's objective is to improve the institutional and infrastructure environment for farmers and herders, with a strong emphasis on the livestock sector. Key planned outcomes of the AISP are: (i) improved pasture infrastructure and quality, (ii) expanded access to farm and livestock support services, and (iii) increased livestock productivity. The Project is still being implemented and will be fully completed in 2014.

33. AISP is comprised of three main components: (i) Pasture Management and Improvement, (ii) Agricultural Support Services, and (iii) Project Management. The review of lessons learned addresses six areas of activities under AISP:

- Legal and Regulatory Reform
- Pasture Area Border Delineation and Demarcation
- Institutional Development of Pasture Users' Unions (PUUs) and Jaiyt Committees (JCs)
- Capacity Building for PUUs and JCs
- Development and Implementation of Community-Based Pasture Management Plans
- Financial Management Issues under the Reformed Pasture Management Model

Legal and Regulatory Reform

34. *Review.* Pasture management reforms in Kyrgyz Republic started as a measure to devolve management responsibilities to local governments and communities due to inability of government to promote sustainable resource management practices and ensure effective management. The AISP facilitated this major management transfer of vast pasture resources from central and provincial/district level administration to the level of local governments and further to resource users. Pasture management reform was designed based on the following three major principles:

- Ecosystem approach, viewing natural pasture as an integrated ecosystem, which should not be fragmented in management and in use and be treated as a whole. This prompted a shift in approach from a lease-based system which divided pastures by area to a fee-based use of pasture resource. This management approach reflected better de facto use practices and provided for easier and more holistic management. It mandated charging a fee for grazing use to be calculated on a livestock per-head basis, rather than 'renting' of area; this approach also organically allowed for the use of the land for purposes in addition to grazing. Pasture Management Plans (PMP) and Pasture Use Plans (PUP) were to be developed based on that principle. The PMP ensures adequate seasonal moving of animals over the entire range with

consideration of local pasture use traditions, rational pasture use and conservation requirements.

- Good governance by devolution of management to the community level, i.e. from the central to local government and resource' users. In order to ensure collective decision making and action, users were to be joint in Pasture Users' Groups (PUG) and Pasture Users' Unions (PUU), and elected leaders of the PUGs jointly with local government bodies (Aiyl Kenesh and Aiyl Okmotu) compose a Pasture Management Committees (PC);
- Sustainable use to ensure that pasture resource use is pay based. The amount of payment to be decided by local government and PCs based on livestock type, pasture efficiency, remoteness, seasonality, and use.

35. The project facilitated drafting the Pasture Law in 2008 based on the findings of the Livestock Sector Study conducted by the WB in 2005, lessons learned from the pilot activities as well as from activities of other donors and NGOs, facilitated broad based consultations of the draft law with various stakeholders, including with livestock farmers in all seven regions led by the Pasture Department. The Law was adopted in 2009.

36. There is a broad framework of policy and legislation for pastureland management. It includes the country's fundamental land tenure legislation governing major principles of land ownership and management, including the Land Code, Law on Management of Agricultural Land, Law on Registration of Rights to Land and Immovable Property; pasture management legislation which governs devolution of management authority to Pasture Users' Unions (PUUs), defines the structure, roles and responsibilities of the PUUs and their elected Pasture Committees (PCs), stipulates arrangements for access to pastures and rights of users, relationship between PUUs and local governments, as well as with the Government agency (MoAM), and sets basis for user fee payments and taxes. In addition pasture management is subject to legislation regulating forest resources, management and use principles and arrangements of other natural resources, and administrative, financial, tax laws and regulations.

37. The Pasture Law itself underwent some changes during last few years, mostly in regards to the secondary use of pasture lands for non-grazing purposes. There have been legal acts adopted on establishment and functioning of Pastureland Border Demarcation, Pasture Department also developed the Program for Pasture Development for 2012-2015 and Action Plan, which were approved by the Kyrgyz Government in February, 2012. During the past four years the policy and legal work focused on adjustment of existing legislation to reflect new principles of the pasture management and use, in particular creating enabling environment for transfer of management functions to newly established PUUs and PCs. PUUs and PCs as their executive bodies now face a new set of policy and legal framework issues, which need to be addressed. These issues are outlined in Working Paper. Policy formulated in 2008 and which served as a foundation and guiding principle for the pasture management transfer needs to be further advanced to respond to the questions that arose in implementation of the law. For instance, there are questions regarding planning for grassland based livestock farming, optimizing the role and functions of PUU and PC, and regulating the relationship between these bodies and local government. The policy and legal framework required to be formulated based on a solid evidence for appropriate levels of stocking rate, animal performance, product quantity and quality and the effects on the grassland and general environment together with the management package within which they were developed. It might be appropriate to set several model areas around the country to develop and test these approaches before upscaling at the national level.

38. *Lessons learned:*

- Overall, it was possible to bring about quite far-reaching changes in the management of a key natural resource in the country. Critical to the success was the development of a vision on pasture management transfer and what the system would look like based on real life experience from an initial pilot. These principles then informed specific policy initiatives and the development of the legal framework.

- The major change in policy was possible in part thanks to the political economy for executing such change at the national level. An effective national champion in the form of the Pasture Department Director was able to push for the changes in the system and secure political support sufficient to pass the legislation. At the same time, many changes occurred during a period of political instability which weakened the power of local administrators with vested interests in the previous system for managing pastures. For large scale reform in Kyrgyzstan with weak institutions and unstable political situation it is a key to have a strong and committed champion.
- The vision and strategy need to be built on consensus of all stakeholders. At that stage, all stakeholders agreed that pasture management system needs to be revised to reflect rapidly growing livestock number in smallholder farms coupling with increased resource degradation.
- Politically the possibility of undertaking such types of reform become easier as the PUUs concept is better understood by farmers, government officials and politicians. Initial stage of the AISP was supported by the formal information dissemination and awareness campaign. There were round tables organized at the oblast and rayon level to explain the objectives and principles of the reform. It is extremely important to maintain public awareness campaign to support advancement of reform, since any negative connotation based on misunderstanding from politicians and government representatives raises huge negativity towards work of PUUs and PCs. Politicians in Kyrgyzstan often use promises of free use of pastures without proper understanding of the reform. Largely during last few years public awareness campaign has been run solely by the Director of the Pasture Department, who has been a champion of the reform.
- There is a weak capacity in government agencies to formulate policy and requires extensive technical support.
- Policy needs to be geared towards social targets, such as increased access to pastures, economic factors such as improved animal productivity and profitability (in addition to increased number of livestock), and environmental targets, such as improved areas of pasture and increased areas under sustainable use.
- Policy and strategy initiatives should have a clear Monitoring and Evaluation plan with allocated adequate resources and clear plan to implement it. An issue in assessing the effectiveness of reforms has been the relatively weak M&E system and reporting on outcomes in the project to implement the reforms. Projects should have planned outcomes, such as fee collection rate, financial solvency and quality of O&M of pasture areas. The ultimate outcomes are livestock productivity, farm income, rural standards of living, and human health. Projects need to have monitoring and evaluation system with indicators to monitor and measure reform, such as total cost of pasture management, adequacy of resources mobilized for pasture management, collection rate for pasture management fee, quality of the management (equity, timeliness, reliability, adequacy), organizational effectiveness of PUUs, profitability of grassland based livestock, and etc.

Pasture Area Border Delineation and Demarcation

39. *Review.* Demarcation and mapping of administrative pasture border areas have proven to be the most challenging tasks in transfer of pasture management responsibilities to local governments and users' associations. Resource management by local PUU/PCs requires an adequate understanding of what resources are involved, but in numerous cases there is less than full clarity on pasture boundaries within which the PUU/PCs are to regulate usage. Undefined, vague, or disputed borders of pastureland lead to open access grazing and conflicts.

40. The Pasture Law and the later Guidelines to External Pasture Areas Border Demarcation provide the framework for the definition of pasture area boundaries. These were to be based on borders of the Soviet era collective and state farms since most *Ajyl Aimaks* (rural municipalities, the lowest level administrative unit) jurisdiction were based on the boundaries of these farms. The

planned demarcation process included a thorough legal review of documents and existing maps, consultations of neighbouring *Aiyl Okmotu* and forestry units, and agreement on the external administrative borders of pasture areas and issuance of land title documents. This process encountered several difficulties. A major constraint was that in practice very frequently maps and other legal and cadastral documentation that would have recorded the administrative boundaries were missing or not readily available to conduct demarcation. In many cases the documentation did not allow for a conclusive demarcation. Finally, project implementation also contributed to not resolving the issue owing to delays in a drawn out procurement process of private companies able to undertake the work.

41. The first batch of 245 *Aiyl Aimak* (slightly more than half of the total number in the country) which underwent administrative border demarcation were those which did not have disputed borders with other entities. The demarcation and titling has been almost finished in these areas by now. However, the work in remaining *Aiyl Aimak* have been delayed due to disputes between *Aiyl Okmotu*, between *Aiyl Okmotu* and forestry enterprises on border lines. Several disputes on pasture borders have been reviewed in courts and some *Aiyl Okmotus* (rural administrations) still do not agree with the court rulings. There are four major types of disputes related to the demarcation process:

- In many areas there have been no maps available to guide definition of external pasture area border lines;
- Conflicts between *Aiyl Okmotu* and leskhoz on borders of pasture areas under jurisdiction of the *Aiyl Aimak* and State Forestry Fund (SFF);
- Conflicts between two or more neighbouring *Aiyl Okmotu* on borders of pasture area under jurisdiction of each, especially when these *Aiyl Okrug*s were part of one Soviet-era collective or state farm (The Pasture Law stipulates that borders of pasture areas will be drawn on the basis of borders of prior collective and state farms);
- Conflicts between Pasture Committee and individuals and legal entities on internal pasture borders, especially in regards to near village (winter and spring) pastures.

42. As noted above, these disputes at times were in some cases compounded by the work of the cadastral companies recruited to carry out demarcation. In some cases these forms reportedly had not conducted thorough legal review either due to lack of such documents and maps, or owing to time pressures.

43. *Lessons learned*

- The legal basis for demarcation of pastures does not provide straightforward guidance in all cases. Future implementation of the community-based pasture management model will require a flexible, practical approach to complete demarcation, a task critical to effective local pasture management. In the cases where documentation was adequate, demarcation has been or will shortly be completed. However, the other cases require a nuanced approach. First, there needs to be given sufficient time to gather and review available documentation. Second, procedures for resolving disputes need to be formulated with particular reference to the four types of disputed boundaries which were highlighted. This in turn requires analysis of the functions of the State Forest Fund, as well as ensuring access to its documentation. Engagement of experts in land management and registration in development of guidelines for pasture borders delineation and demarcation provided a foundation to initiate process.
- Institutional relationships are important. There are good institutional relationships evinced between the State Registration Agency and the Ministry of Agriculture which led to relatively easy title issuance and registration process. These need to be sustained. On the other hand, lack of cooperation and support from Giprozem limited access to necessary cadastral inventory data, legal information and maps. This needs to be resolved.
- Provisions for transparency were successfully employed and care needs to be undertaken to provide for continued transparency about the process and result of demarcation, particularly

in more contested cases. A reviewing period for all persons in the respective *Aiyl Aimaks* needs to be ensured.

- Flexibility to monitor the process and address obstacles to demarcation needs to be built into the design. The project should have explicit monitoring of demarcation exercises and be prepared to troubleshoot more proactively.

Institutional Development of Pasture Users' Unions (PUUs) and Jaiyt Committees (JCs)

44. *Overview.* ARIS facilitated the formation of the 454 PUUs around the country, with only 15 *Aiyl Aimaks* not forming PUUs because they don't have any pasture lands. Each PUU has elected executive body, the *Jaiyt* Committee (JC). PUUs represent the aggregate interests of the animal owners and all other stakeholders within the *Aiyl Aimak* with regards to pasture management and use. The pasture law, the AISP design and operational manual aimed to establish in a democratic way inclusive grassroots structures. Thus there were provisions for stratified representation of the community, including small and large livestock holders, shepherds, and also villagers who are using pasture resources for purposes other than grazing, such as hunting, collection of medicinal herbs and roots, fuel collection, tourism and recreation, etc. It is noteworthy that (many of these non-grazing uses are of particular interest and importance to women and the poor. These major types of pasture users were to form Pasture Users' Groups (PUG) which would elect representatives to the Pasture Management Councils/*Jaiyt* Committees. The conference of PUGs was to be a governing body of the PUUs, consisting of up to 60 delegates from the various PUGs formed within the *Aiyl Aimaks*.

45. However, it seems that this original institutional set up had been modified in the course of the project's implementation. Social mobilization in different areas varied in quality and scope and thus produced different results.

46. Key issues which arose in implementation were:

- Lack of accountability of PCs to users. PUUs in some areas have formed PUGs and in others have not with PCs elected at the village meetings by those present. The general pattern is that PUUs have an executive body – JC which makes all decisions on the pasture management and use plan preparation and implementation, including on establishment and collection of fees, running micro projects. PUGs and conference of PUGs do not play any role in the activities of the PUUs. Mechanisms for accountability to the broader community appear to have been quite weak, with PC chairs exercising substantial personal discretion. Monitoring of the working of accountability mechanisms in the design was weak.
- The introduction of PCs as a new institution in many cases did not obtain local social acceptance and support from the community. Several factors, including lack of mechanisms of social accountability of PC to PUU, low capacity of PC in organizing PUU, a high turnover of PC chairpersons undermined social support and in some areas even acceptance of PC from the communities. Given the de facto institutional framework whereby PC chairs had little accountability and were not effective community groups, the PCs came to be seen by many as a duplicate of *Aiyl Okmotu*. Lack of accountability undermines pressure on non payment of pasture fees and compliance with the pasture management and use plans. Furthermore there was growing tension between *Aiyl Okmotu* and PCs, since *Aiyl Okmotu* heads feel that PCs take over some power especially in terms of collection of pasture payments and deciding on pasture improvements.
- Multiple roles of PC chairs in practice often undermine accountability. The chairperson of PC together with a full time or part time accountant often seems to be the only person making decisions on behalf of the PUUs. Thus one individual is effectively taking decisions on behalf of the community body and then executing it as head of the PC. In the rural context in Kyrgyzstan, the combination of genuinely representative leadership with management acumen is not always in place, leading to situations where PC chairs are either respected individuals but unable to manage well or, vice versa, are managing without real representative

accountability back to the community. The latter situation leads to abuse. The cause of this problem lies in part in the newness of the institutions, weak traditions of participation by communities in local governance, especially natural resource management, and also the objective difficulty of having persons in rural communities devote the time to participate in a manner that will hold PC chairs accountable for performance and integrity. Emphasis on easy-to-implement reporting formats and external monitoring of their utilization is important. ICT can be used innovatively to monitor activities (e.g. through uploading pictures of PC sessions or presentations of pasture management plans to a website).

- Not all types of users are represented in PC. Although the project design expressly sought for inclusiveness, secondary users tend to be less well represented in the PCs. In most cases, those livestock owners who use pastures for grazing but also for other purposes are classified as secondary users. This leads to exclusion of large groups of pasture users from information and decision making, as well as security of use rights.
- Participation in the PUU is mixed, with cases of non-submission to the rules for pasture usage set out by the PUU/PCs. Better cooperative capacity within communities supports greater mobility of herds and more effective, sustainable use of pastures. There were numerous reports that affluent members of the community, particularly absentee herd owners are able to obtain different treatment often supported by the interference of local authorities. There were multiple cases of nonpayment for usage, with community mechanisms for enforcing compliance largely ineffective owing to traditional power relationships. These have led to new conflicts within the community which need to be resolved.
- Low participation of women in JCs. According to some research data, not more than 6% of all PCs members are women.
- Nonetheless, there are signs of success in the overall reform. 'Teething problems' were to be expected given the large country-wide scale, the lack of prior practices of community-led natural resource management, the difficult political economy dynamics, and the overall operational and substantive complexity of the reforms. Nonetheless, pasture management clearly has not declined because of the reforms. Gathering of payments has increased several times over; these payments remain at that community level and are more likely to benefit the management of pastures than has been the case in the past. There is acceptance of the institutions (and, indeed, growing pressure from other administrative bodies keen to take over their powers) and practice will improve performance over time.

Capacity building of PUUs

47. *Review.* The capacity building program was aimed at strengthening knowledge and skills at the level of the PUUs and PCs. Building capacity and transfer of knowledge at the local level had many issues, including the following:

- the lack or inadequate knowledge and capacity in country on many technical issues of pasture management coupled with lack or insufficient technical support to develop this knowledge appropriate to country's conditions and needs, even in the RAS,
- the logistical challenge of transferring the existing and developed knowledge to 445 often remote PUUs/PCs,
- the difficulty of implementing knowledge, particularly on pasture management techniques within the PUU/PCs as well as the loss of knowledge through turnover.

48. *Lessons learned:*

- International and local technical assistance is required to support pasture management reforms. Kyrgyzstan is pioneering a country wide transfer of management of rangeland resources to the local government and communities. There is limited global experience of such transfer at the country level which can be adopted and adjusted to Kyrgyzstan. Such

reforms need substantial highly professional and timely technical assistance to develop knowledge based on country specific conditions and needs.

- Knowledge needs to be experimented before massive transfer and up-scaling. Given the pioneering nature of the effort, there needs to be substantial learning by doing in order to develop the local governance and management institutions in order to perform well. It is imperative to develop approaches and test it on a small scale first before up-scaling on a country level to minimize cost and avoid frustration of beneficiaries.
- There remains poor connections between policy, research and on ground practice of livestock farming. For instance, there has been various research undertaken by the Pasture Institute on fodder production which have not been translated into policy or capacity building of PUUs.
- The absorbing capacity of knowledge on pasture management by the PUUs is low. PUU and PCs are still at the very initial stage. Trainings are attended by chairpersons and in some cases by accountants. Many of these people often lack basic understanding of the pasture management issues and are not able to absorb and apply received knowledge. Other members of PC are reluctant to participate in trainings since they often are not engaged in PC activities or engaged in a very limited way (collection of fees from specific groups). This then requires a two-track system of capacity building at the local level. Capacity-building related to participation in the direct reforms and programs of the project, such as the pasture improvement grants, can continue largely as in the past. However, substantive issues related to sustainable pasture resource management will require a longer-term program of instruction which is geared to the local level absorption capacity as well as the particular needs of different communities and their management of pastures. Substantial resources need to be put into technically well-targeted training while also ensuring that this is put in terms that are relevant -- and hence implementable -- by the PUUs and PCs.
- The capacity building program was logistically challenging and overall were not effective. The large number of more than 450 PUU all around the country, compounded by the approximately 15 persons who people who compose PC, all with differing levels of knowledge about livestock and pastures, was extremely challenging. In addition, the separation of responsibilities with ARIS responsible for logistics, such as providing facilities, mobilizing trainees and other organizations delivering trainings proved to be problematic as well. According to trainers, often sessions were poorly attended with only very few people from PCs, and often with participants for whom topics were irrelevant. For example, accountants complained that they had to attend training on animal health to ensure that PC is present at the training. Another challenge was that financing scheme for contracts with training agencies with some advance payment and final payment after completion led to the problem that there was a shortage of available good quality trainers, lack of visual and handout materials.
- As is often the case with mass training, high turnover of participants - mainly chairpersons and accountants in PCs – would lead to the complete loss of transferred knowledge.
- Exchange visits of PC members to successful PUUs were regarded as very effective and appreciated by all participants. Evidently, poorly performing PCs were able to learn from peers and replicate good lessons in their work. Future training should likely target some of the best performing PC chairs to conduct knowledge exchanges in terms that are easily comprehended and accepted by others.
- Use of ICT in AISP has been extremely low. Although often a challenge due to incomplete penetration, nonetheless, the project can use mobile technologies and cloud computing and making more extensive use of crowdsourcing both knowledge and information. The amount of electronically available knowledge and information about land potential, including resilience, is also rapidly increasing through the efforts of a number of organizations throughout the world. Spatial analysis of remotely-sensed imagery, particularly satellite imagery, permits assessment of land use and degradation of relatively large areas can be of great use. On a more basic level, there are successful horizontal learning programs whereby participants

exchange knowledge and advice by simple SMS. This can valuably supplement knowledge exchanges.

Community-Based Pasture Management Plan.

49. *Review.* Due to lack of knowledge on management of grassland based livestock in country, it was difficult to develop and introduce a concept and mechanisms for community based pasture management. Only in 2011 the Guidelines for pasture management plan development and implementation were developed under the leadership of an international consultant. Training to PCs was then provided. However, field interviews with the PC members revealed that many of them still do not understand the value of the pasture management plan and its elements of planning to allocate grazing rights, collect fees and undertake pasture infrastructure improvements. Allocation of grazing rights is not based on stocking rates of particular plots, but reflects grazing routes which have been used by farmers and shepherds before. According to the data of the Pasture Department, in 2011 all PUUs had some sort of pasture management plan, with only 20% of them developed based on guidelines, 50% of average quality, and the rest 30% were poorly developed plans. No reviewed plans included measures on management of grazing for pasture improvements, such as rotational grazing, ceasing grazing and prohibition of grazing in a planned and specific way.

50. *Lessons learned:*

- Guidelines for preparation of pasture management plans, and the plans themselves, should be simple, considering traditional and existing knowledge at the grassroots level. A few basic principles should be emphasized, above all that the plans must aim to ensure adequate seasonal movement of animals over the entire range of the available pastures. Furthermore, there must be a commitment to take effective measures to enforce the provisions of this plan in protecting pastures.
- The use of the more distant pastures must be made obligatory for all livestock owners during the spring, summer and fall, when only a minimal number of animals, to cover the needs of the local households, should be allowed to graze on the near-village pastures. This is a fundamental prerequisite for the rehabilitation of the winter pastures, since they must have adequate time to recover and seed in the spring and early summer. The PCs should develop and enforce pasture management plans that are appropriate for the small farms and households, including the hiring of community shepherds. If necessary, stall feeding must be enforced for animals that are not sent to the more distant pastures. As noted earlier, monitoring mechanisms through use of mobile telephony can be considered to provide for enforcement.
- Rotational grazing systems should be introduced to provide the plants the necessary rest periods and the possibility to produce seeds. An annual change of specific areas to be excluded from grazing should be considered if the introduction of a rotational grazing system is too difficult to realize.
- Devolution on rangelands leads to an increasing influence of a powerful and affluent segment of livestock keepers and skilled urban absentee herd owners. This may be accompanied by an unequal distribution of productive assets and the emergence of new poverty groups if there are no proper safeguards in place.

Financial sustainability of community based pasture management

51. *Review.* Kyrgyz Government has constrained capacity to pay for the costs of pasture maintenance. Although the land is retained in state ownership, its utilization by herders is not typically use of a public good which merits state financing. However, at the same time, farmers also have constrained capacity and motivation to pay for the cost of pasture maintenance. Financing of pasture maintenance and improvement currently is based on collected pasture use fees and external donor financing. Mandatory payment for pasture use is one of the four principles of the management transfer. It is necessary to introduce in strategy incentives and accountability mechanisms need to be

put in place to motivate and enable farmers to finance most, and eventually all, of the cost of pasture management and maintenance. The management costs themselves in terms of personnel and improvements are not all that great, while the benefits to individual users is immense.

52. With the transfer of management to pasture users, collection of pasture fee has significantly increased. If the total collected revenue from pasture use in 2004 was 7.68 million Soms, it was already almost 10 times more or about 66.2 million Soms in 2011, and 82 million Soms in 2012, including 14 million Soms of land tax, which is a local tax and goes to the local budget. However, it is still notable, that in some areas PC collect very little revenue. Estimates are that only about half of potential revenue from the pasture use for grazing purposes only is gathered, even with the established low rates for pasture use (35-100 Kyrgyz Soms per head of cattle and horses, and 6-18 Soms per head of sheep and goat).

53. Setting pasture use fees has been a difficult task for the PCs, owing to social, political, economic and legal factors. According to the Pasture Law, payment for pasture use should be established by PC and approved by the local council, or *Aiyl Kenesh*. There has been a formula recommended and requirement made that it should not be less than land tax. However, most PCs recommend rate of pasture use fee just based on previous rates. Many of them have difficulty to formulate pasture use tariffs for other than grazing uses (tourism, hay making, bee keeping, etc).

54. **Pasture Investment Grants.** The project provided small grants to PUUs via ARIS for pasture-related investments, such as rehabilitation of infrastructure, improvements in pasture quality, or the production and storage of forage crops and winter feed. Each PUU received a grant of 250,000 Soms in the first year of its participation in the project; the PUU will contribute a minimum of the equivalent of 25% of the grant from its own resources (including at least 7,500 Soms in cash. In subsequent years the PUUs will be expected to finance O&M expenditures and additional investments in pasture infrastructure and improvement from revenues generated through pasture user fees. There have been 481 micro projects committed and implemented by the PUU by the end of 2012. Majority of these micro projects are on rehabilitation and construction of roads (37%) and bridges over rivers (31%). There were projects to rehabilitate water supply systems for animal and people (24), and limited number of projects aimed at increase of livestock productivity and pasture improvement (8%).

55. Key issues that emerged were the following:

- Allocation of funds to pasture improvement to PUUs should be based on the size of pasture area, on livestock size. Otherwise, the flat distribution of 200,000 Soms per PUU led to the situation, that PUUs with much larger pasture area and bigger livestock population received the same amount as PUUs with limited pasture areas and much smaller size of livestock.
- The problem with rehabilitation of roads, bridges and other infrastructure that in mountainous areas they get deteriorated very fast. PUUs need to have access to machinery to maintain the infrastructure in the course of the O&M. The machinery can be owned jointly by several PUUs either at the rayon level or along the watershed boundaries depending on the size of pastures of the *Aiyl Aimak*, their proximity to each other.
- Pasture improvement micro projects without adequate technical support can fail and lead to frustration and decrease of trust from the PUU members to PC. In one observed area, PC made investments in near village pasture area with seeding of improved fodder but at the end of the year it was severely degraded because of even increased pressure from the cattle. In other cases, PUU/PCs had limited knowledge and ability to address raised in Community Pasture Management Plan problems.
- It is imperative to have adequate technical supervision of the preparation and implementation of the infrastructure micro projects to ensure that all aspects of their efficiency, safety and sustainability are adequately considered.

Conclusions

56. The experience of pasture reforms in the Kyrgyz Republic and the AISP which underpinned them has been overall positive. The development of legislation to overhaul the system was partially thanks to particular political circumstances, but also reflected positive home grown experience with pasture management that reflected a decentralized approach. This approach provides a stronger basis for encouraging more environmentally sustainable practices while also maximizing the economic uses of pasture lands for grazing and for secondary uses. The basic institutional set-up has been put in place and is showing robust signs of being effective in the Kyrgyz context, albeit with glaring capacity needs as well as weak accountability mechanisms. There is therefore much to build upon from AISP to have the reforms be effective and to achieve the development objectives that underpinned the reforms: more sustainable, productive, healthy use of pasture resources.

57. The preceding review points to four main areas of substantive focus to provide a durable framework for the successful functioning of the reformed pasture management system. A more detailed discussion of next steps is included in Working Paper 7.

58. Clarification of PUUs/PCs legal and policy framework. This work includes building in a mechanism to resolve the disputes on demarcation of pastures to be managed in a manner that stakeholders will recognize and observe. It also needs to involve the confirmation of the role of the PUUs/PCs and how they relate to local governments. It should also provide for guidance and monitoring of PUUs/PCs in performing their function of pasture management, including incorporation of sustainable techniques and ultimately better outcomes in the use of pastures, with mechanisms for monitoring and redress if they are not performing their function.

59. Developing genuine accountability for management at the local level. The same dynamics that can lead to elite capture, lack of inclusion, and non-responsiveness of local governments will affect the PUUs and particularly the PCs. If this occurs on a large scale, the reforms may be endangered. It is never very effective to centrally prescribe local accountability though devising mechanisms – these must depend on the social norms and participation of the persons in the localities. At the same time, ARIS's experience and other analogous community efforts demonstrate that relatively easy procedures can be incentivized and to some degree enforced: it must ensure that information relevant to persons can easily be made available and is actionable. Enforcement is also made more possible through demonstration of the operation of accountability mechanisms, such as a public accounting of allocations and receipts, through the use of mobile phones to verify the conduct of such events.

60. Qualitative improvement in management of pastures. The reforms have succeeded in engaging the users of pastures in a system where they have voice and more directly benefit from management. It is important to add to these incentives more detailed technical understanding of how to manage the resource, particularly the long term costs from improper management. This requires effective capacity building which would comprehend: better connections between research and technical advances with the PUUs/PCs; development of training differentiated to different needs of PUUs/PCs, with information presented in a relevant manner; a system of efficiently renewing knowledge when there is turnover; and development of horizontal learning through exchanges and taking advantage of ICT.

61. Sound monitoring and evaluation. There needs to be much better mechanisms for measuring progress and feedback on the management of pastures. Baselines and expected results should be communicated and understood. These results should then feed into the preceding three blocks of activities (policy formulation, institutional development, and quality of management).

62. In all of these activities, it is important to maintain as much transparency as is possible to build trust in the reforms and demonstrate the impact that they are having.

Appendix 4: Detailed project description

1. LMDP-II is a largely a geographical expansion of the LMDP-I, from northern Naryn and Issyk-Kul oblasts to three southern oblasts of the country, namely Batken, Jalalabad, and Osh. LMDP-II also incorporates approaches and arrangements for climate change adaptation in the entire IFAD Programme thanks to the availability of Adaptation for Smallholder Agriculture Program (ASAP) financing. Thus, notwithstanding the “sequential” financing, LMDP-I, LMDP-II and World Bank-funded Pasture Management Improvement Plan will be implemented as one coherent, national programme in all operational aspects, as originally envisaged when setting out to design a successor project to the AISP in January 2012. A consultation between IFAD and the World Bank in the course of two joint preparation missions has confirmed the mutual intention to continue the strong partnership already developed in the past during implementation of three co-financed projects in the agricultural sector. The WB-funded PMIP will be implemented in Chuy and Talas oblasts, while some activities will be implemented at the national level. Both LMDPs and PMIP will complement each other, specifically in terms of the implementation modalities, arrangements and programme activities. As with LMDP-I, the Project will have three principal interrelated components as well as the required support for Project management and implementation. Each is described below along with their sub-components:

- Component 1 – Community-Based Pasture Management and Vulnerability Reduction
- Component 2 – Livestock Health and Production Services
- Component 3 – Diversification and Market/Value Chain Initiatives
- Component 4 – Project Management

Component 1 – Community-Based Pasture Management and Vulnerability Reduction

Rationale

2. The ability of livestock farmers to maximize the use of their pastures is constrained by many problems, including the lack of technical knowledge of small livestock holders, poor governance arrangements on pasture management, inefficient management of community livestock, shortage of feed during the winter months, environmental degradation, and lack of access to quality fodder seed and infrastructure - all of this further exacerbated by climate change. The component will address these constraints in an effort to reduce vulnerability of pasture communities and ensure livestock producer households maximize their returns while ensuring the sustainable management of pastures. The veterinary services provided for in the second component will complement such an effort.

3. The Pasture Law, passed recently, provides the legal basis for community-based pasture management. Previous pasture management practices have resulted in pasture degradation. Prior to 2009, fragmented management by government was unfair and disrupted seasonal grazing. The fragmentation of responsibility for pastures between oblast administrations responsible for remote or summer pastures, rayon administrations responsible for intensive, or spring/autumn pastures and the local self-government bodies (LSGB) in each Aiyl Okrug (AO), or sub-district, responsible for near village or winter pastures, has resulted in disruption of seasonal grazing routes, a lack of transparency in pasture allocation, inequitable access to pastures and insufficient investment in infrastructure to maintain access to pastures. In general, pastures near settlements have been over-utilized, while some summer pastures have been under-utilized, leading to species degeneration in some pastures and degeneration of some winter pasture beyond a critical point beyond which recovery requires long resting periods or reseeded in others. Collection of land tax and other revenue related to pastures was very low. The Pasture Law, which was adopted in January 2009, reconnects management of summer, spring/autumn and winter pastures, provides more equitable and transparent allocation of pasture use rights, provides a mechanism whereby stocking rates can be better aligned with pasture carrying capacity and is expected to considerably increase generation of revenues for investment in

pastures as well in local development through land tax revenues, which are directed to local budgets. The critical elements of the new arrangements for pasture management are the following:

- The transfer of authority for pasture management from Oblast Administrations and Rayon Administrations to Aiyl Okmotus (AO), which are the lowest level of government.
- The delegation of authority for pasture management from AOs to Pasture Users' Unions (PUUs). Demarcation and legal registration of the administrative boundaries of pasture areas to be managed by each PUU is a foundation to pasture management transfer.
- More equitable access of pasture users to resources through broad-based representation of all types of pasture users (small and large owners, grazing and non-grazing users) in the PUU general assembly.
- Compulsory preparation of Community Pasture Management Plans (CPMPs) by Pasture Committees (PCs) which set out a five-year plan of pasture management, improvement and investment.
- The allocation of pasture use rights based on CPMP and an annual use plan reflected in pasture tickets, which determine the number of animal grazing days and grazing routes to be used, and the volume and location of collection and harvesting of other pasture resources by each pasture ticket holder. The aim is to help achieve maximum pasture utilization rates based on improved methods of pasture health assessment and monitoring.
- Collection of payments by the PC for: (i) pasture use fee, (ii) animal health charge, and (iii) land tax.
- The setting of sustainable pasture use fees at rates which cover: (i) PC operating costs, (ii) pasture investment and maintenance costs, and (iii) local community needs.

The Added Value of Climate Financing

4. Although livestock production contributes heavily to rural livelihoods and food security, and to total agricultural sector output growth and exports, its productivity is low and far below its potential. This unfavourable situation is likely to be made worse by climate change. Pasture productivity, hay yields and fodder crops are strongly influenced by climate conditions. The UNFCCC projects that grassland productivity will decline in the semi-arid and arid regions of Asia by as much as 40-90% due to an increase in temperature of 2-3°C combined with reduced summer precipitation. Decreased pasture productivity, heat stress and reduced access to water could cause a reduction in livestock productivity and an increase in disease incidence. The drought-induced lack of pasture and fodder may lead to overgrazing, animal death, or force livestock owners to destock herds they are unable to feed. Current fodder varieties have been impacted by prolonged summer heat waves. Pastoralist communities have no access to information regarding disaster risk and no capacity to mitigate negative climate change impacts.

5. Although LMDP-I provides opportunities in terms of enhancing the way pastures are managed at the community and national level, the possible impacts of climate change are not explicitly taken into account when setting priorities for long-term investments in improving pastures and ensuring the sustainable development of this sector. LMDP-II will mainstream adaptation priorities within CPMPs and subsequent investments to enhance the resilience of communities.

6. The vulnerability assessment undertaken within the framework of LMDPII design process has identified a preliminary set of adaptive measures to reduce climate risks for livestock and pastures and increase the resilience of smallholder herders in Kyrgyzstan. In this respect, LMDPII will ensure that climate change adaptation priorities are integrated within the CPMPs in all the LMDPI and LMDPII project areas. Besides the direct, positive impact on pastures, the adaptive measures promoted by LMDP II will bring environmental benefits that are locally and globally valuable, such as carbon sequestration, water cycling, and the enhancement and conservation of local biological diversity.

Objective and Approach

7. The key objective for the component is to increase access to more productive and climate resilient pasture areas for livestock communities through a sustainable, community-led management of natural resources resulting in an increased availability of supplementary feed. At the national level, the component will continue to strengthen the regulatory and institutional framework by providing strategically important inputs of technical assistance (TA) and financial assistance to the reform of legislation relating to pasture management, and to building the technical capacity of relevant national level institutions. Within this strengthened framework, at targeted oblasts level, the participatory planning process provided for in the component, together with capacity building activities and matching grant funding of small-scale community investment projects, will be the basis for ensuring more productive and resilient pastures and sustaining the income of pasture communities. The participatory planning process, to be upgraded under LMDP-I, will incorporate both climate-resilient pasture management and animal health planning, thus linking the work to be done under both first and second components. As part of the process, the component will strengthen the governance and management capacity of PUUs and broaden the focus of PCs beyond access to and sustainability of pastures. In view of this, the component will strengthen the adaptive capacity, governance and management skills of PCs and reduce their vulnerability to climatic stress. This will be done by building understanding within PCs and their constituent farmers, most of whom are members of the Pasture Users Unions (PUUs), of the importance of incorporating disaster risk reduction measures within pasture management and use plans and ensuring the long term sustainability and health of pastures and the restoration of pasture landscapes, thus improving livestock productivity and contributing to reduced feed shortfall and income loss.

Expected Outputs, Outcomes and Indicators

8. The main expected outputs, and the associated indicators, for this component are:
- Climate risk-mitigation pasture and animal health management plans incorporating needs and priorities of poor and women
 - 190 approved pasture management and animal health plans in the Project areas effectively integrating climate risk mitigation and adaptation measures (ASAP);
 - Reduce disputes regarding access to pastures by 30%;
 - Increase by 20% pasture fees collected by the end of the Project.
 - Resilient and sustainable investments prioritized in community pasture management and animal health plans completed and functioning
 - 648 000 men and women (30% of the targeted population) have access to infrastructure (water points; shelter; storage; pasture connectivity roads) that is climate resilient and environmentally sound (ASAP);
 - US\$ 7.5 million of new or existing rural infrastructure made climate-resilient (ASAP);
 - 17 000 ha of pasture is rehabilitated through eco-system restoration approaches (ASAP).
 - Institutions involved in pasture management are strengthened and have capacity to integrate climate risk management into management plans and policy making.
 - Benefit 315 Pasture Users' Unions (PUUs) with a functional early warning system for extreme climate events hazards (heat and cold waves, floods, frost and drought) (ASAP)
9. The outputs would enable the component to achieve the following outcome (with the associated indicators):
- More productive and climate resilient pastures, and increased supplementary feed available to community livestock
 - 25% increase in average milk yields and 15% increase in average weight of cattle, sheep and goats sold in local markets;

- 225 mt incremental of high quality/cleaned barley and 45 000 mt fodder are available in project communities by the end of the project period;
- 20% reduction in mortality of animals caused by disasters (ASAP).

Investment Activities

10. This component comprises two main sub-components: (i) Community Risk-mitigation Pasture Management and Investments; and (ii) Pasture Institutional Strengthening.

Sub-Component 1.1: Community Risk-mitigation Pasture Management and Investments

11. The sub-component will include the following key activities:

- Legal and Regulatory Reform
- Policy Dialogue on Climate Change Adaptation.
- Pasture Areas Boundary Demarcation.
- Upgrading Community Pasture Management Plans (CPMPs).
- Community/PMP Investment Projects.
- Community Fodder Seed Programme.

12. **Legal and Regulatory Reform.** AISP has assisted the Pasture Department (PD) to implement legislative reform to align the tax code, budget law, customs code and administrative code with the new pasture management arrangements. An awareness and capacity building programme was delivered to PUUs by local service providers on basic principles of the Pasture Law and the importance of sustainable pasture management. LMDP-I will continue providing policy and legal advice to the Pasture Department (PD) and State Agency for Environmental Protection and Forestry (SAEPF) on further advancement of pasture reform and developing legislation to support its implementation. LMDP-I through contracted local service providers will develop awareness and training materials and will train outreach organizations or individuals, who will continue delivering legal training to PUUs on the ground. LMDP-II will complement the latter activity by providing information and training to PUUs in the Batken, Jalalabad and Osh regions.

13. **Policy Dialogue on Climate Change Adaptation.** The Project intends to streamline its work, achievements and lessons learned to influence policy dialogue on climate change adaptation/mitigation, disaster risk reduction and environmental sustainability that has been triggered in the Kyrgyz Republic by a broad range of national, international, governmental and non-governmental actors. The Project will focus its policy work on supporting the PD in the development of a sectoral adaptation plan on pastures and livestock, stemming from the overall National Adaptation Strategy that is being finalising. The Project will also inform the preparation of the Third National Communication to UNFCCC, making available all the data and information included in the climate vulnerability assessment for the Kyrgyz Republic produced by IFAD during the development phase of LMDP-II (see Working Paper 6).

14. A series of meetings and workshops will be organized during the inception phase of the project involving all relevant/interested partners, with the objective of identifying key mechanisms, processes and frameworks to disseminate/feed best practices and lessons learned into the most relevant policy planning processes. Such workshops for policy dialogue on climate change adaptation will continue during the project implementation as a part of the annual review and planning workshops envisaged under Project Management component.

15. **Pasture Areas Inventory and Boundary Demarcation:** LMDP-I and LMDP-II will facilitate completion of demarcation of external administrative pasture boundaries of Project PUUs and digitization of these administrative pasture boundary maps. There are several PUUs which have disputes over boundaries and the Project will support them with legal and technical assistance to address the conflicts and resolve them in a participatory and transparent manner.

16. The Project also will support defining pasture areas within administrative PUU boundaries based on participatory assessment and legal inventory. ARIS in cooperation with the PD and State Registration Agency will develop guidelines for such legal inventory and demarcation of pasture areas and test the approach in five Aiyl Aimaks. Guidelines, based on testing, will be used to contract inventory/GIS service providers to undertake such inventory and digitalization of pasture areas for all Project PUUs. Digitized maps will be maintained at the PD, the SAEPF, and will be provided to PUUs to be used as a tool for pasture assessment and management.

17. Upgrading Community Pasture Management Plans. Community Pasture Management Plans (CPMP) that already exist in most PUUs would need to be improved to reflect inventory data in PUU pasture areas, a community prepared pasture health assessment, and management decisions on grazing rights allocation and on pasture improvement. This would be done to effectively integrate animal health planning, improve winter feeding and climate adaptation measures, and to determine risk-mitigation priorities for investments in the PUU. In view of this, the Project facilitation teams would reassess priorities for investments in the PUU areas made possible by the considerably expanded size of the matching grants funds available under LMDP-I and LMDP-II compared to those in AISP and also incorporate animal health planning and climate adaptation measures. As part of this process, training and capacity building would be provided to the PC and PUU members to carry out the planning efficiently, ensuring the active participation of the more vulnerable households and involvement of women in planning and decision making. The activity would include support provided by ARIS to facilitate the process and help in investment planning.

18. The four key investments under this activity, “Upgrading Community Pasture Management Plans,” would be: (i) Technical Support for Adaptive Management; (ii) Strengthening Pasture Users Unions (PUUs); (iii) Pasture Assessment and Mapping, and (iv) ARIS Facilitation.

19. Technical Support for Adaptive Management. The support would complement the one provided under LMDP-I and comprise a combination of national and international short-term experts that would be contracted by ARIS, the agency responsible for the facilitation of community mobilization, participatory planning and implementation, on a needs basis. It would include the following specialities: climate change adaptation, natural resource management, pasture restoration and improvement, agronomists, disaster-risk reduction, animal health, governance and conflict resolution, gender, and M&E. ARIS outreach experts would undergo refreshment courses on PRA and social mobilization with special focus on governance, inclusion and representation.

20. Strengthening Pasture Users Unions. The activities in support of the PUUs would include:

- *Governance Training and Advice.* Like with LMDP-I, ARIS would undertake an assessment of PUUs governance capacity. This would include the verification of the characteristics of livestock owners in each village, assessment of vulnerability, evaluation of equitable representation in the general assembly and assessment of the extent to which they are able to secure adequate grazing through pasture tickets. It also would assess any preferential arrangements for provision of subsidized or prioritized access to pastures for vulnerable groups, including women-headed households. The Project also would assess the extent of conflicts within the PUUs, including disputes related to access to pasture and land use, and access to secondary pasture resources. Based on the findings of the assessment, ARIS would apply the guidelines and training materials prepared under LMDP-I and conduct training of trainers (ToTs) for selected PCs where governance and representation of vulnerable groups needs to be improved. ARIS might engage the Republican Association of Pasture Users’ Unions (RAPUU), or other capable local service providers in undertaking PUUs governance assessment and/or delivery of training.
- *Training for Pasture Management Planning.* Under LMDP-I, ARIS would be responsible in providing a solid basis for the community-based pasture management planning to be implemented under the Programme through the development of guidelines and provision of training to trainers who will in turn work with the PCs and PUU members on the following: (i) Community Pasture Management Planning; (ii) Community-based Pasture Assessment and

Mapping; (III) Integrating strategies to address winter forage production and associated winter feeding constraints on winter pastures into planning at both PC and individual farmer level; and (iv) Building the capacity of PCs to implement animal health plans including contracts with private vets. Under LMDP-II the above guidelines and training would incorporate climate adaptation measures. As a part of the training exercise ARIS, with the support of the contracted international TA, will facilitate a discussion with PC and PUU members on how to interpret the findings of the vulnerability assessment and the climate projections, and on how the study can influence the overall process of CPMP development and governance, and inform communal management planning and the review and enforcement of rules for communal resource use.

- In addition, ARIS would train the PUUs in managing the risk as per various project areas, making sure PUU are aware and are guided on the needed mitigation measures regarding investments. When fully developed CPMPs should include the following:
 - vulnerability assessment;
 - livestock inventory;
 - pasture assessment plan with the map;
 - annual pasture use plan with the map (updated annually);
 - pasture improvement plan;
 - infrastructure improvement plan;
 - animal health plan;
 - winter feeding plan;
 - risk mitigation plan;
 - secondary pasture use plan (to take into consideration seasonal adjustments and include needed investments in additional income-generating activities);
 - environmental protection plan focusing on interactions with forest land;
 - finance and investment plan;
 - conflicts mitigation plan.
- As described earlier, guidelines have been produced and the PCs have been trained on basic elements of the community pasture management. However, these guidelines will have to be revisited to take into account the possible impact of climate change on pasture resources, integrate vulnerability assessment and adaptive management considerations, as well as animal health issues. Thus, the PCs and PUUs would be trained on refining/updating the already existing plans to ensure increased resilience.
- Support for Management of Community Investment Projects. Like with LMDP-I, ARIS would train the PUUs in managing: (i) the documentation and submission of PUU project proposals for approval and financing, (ii) the detailing of the design of the project(s), including specifications for more complex works, (ii) procurement processes and financial documentation/reporting, and (iii) supervision and certification of satisfactory completion of work by service providers/contractors.
- Local and International Study Tours. To be decided based on needs assessment and in consultation with the PCs.
- Community-based Pasture Assessment and Mapping: Community-based assessment and mapping provides a special tool to help the pasture committees prepare effective community pasture management plans. Maps with results of pasture assessment prepared by the community will build awareness on existing resources, their condition and need for improvement, encourage member participation in pasture planning and will ensure sustainable management of pasture resources. LMDP-II would expand this activity to the Batken, Jalalabad and Osh regions. This will involve the following key activities:
 - Technical Support. ARIS in collaboration with the PD would contract local service provider(s) to develop the approach and guidelines to conduct community-based

pasture health assessment and mapping closely linked to methodology for pasture boundaries demarcation and digitalization. The service providers also would prepare and conduct training for trainers to transfer the knowledge to the PUUs on participatory inventory and mapping. ARIS and the service provider(s) would ensure technical backstopping for training of members of PUU/PCs and development of pasture maps. The map with the inventory data will serve as a tool to prepare and monitor the implementation of the pasture management plan.

- Provision of Tools and Equipment. GPS and planning equipment and tools and consumables will be provided at a cost of US\$ 700 for each PC to enable it to map the area.
- Maps will be prepared by the community with technical backstopping from ARIS and service providers - with layers indicating pasture resources (especially for winter forage), the condition of pasture and level of vulnerability for long-term planning, infrastructure, tracks and connectivity, environmentally sensitive locations and areas that need to be considered for rotation/resting.
- Livestock carrying capacity plans and monitoring systems: With the predicted impacts of climate change, winter feed production and spring-autumn pasture availability are the biggest constraints to development of the livestock sector in general. The livestock carrying capacity ensures adequate forage for grazing animals and leaves enough residual forage for re-growth the following year. Residual forage protects soil from erosion and increases the forage yield the following year by improving stand vigor, soil moisture and nutrient cycling. Current CPMPs incorporate the principle of livestock carrying capacity. However, LMDP-II would introduce a long-term carrying capacity approach, which refers to the average number of animals that a pasture can support over a planning period (5-10 years) and depends on the:
 - Mix of land types
 - Condition of these land types
 - Climate
 - Variety of pasture crops
 - Evenness of use by livestock
 - Livestock mobility (mobility is essential in order to reduce pressure on pastures close to settlements, and obtain the fullest benefit from the summer pastures which is essential to fatten animals for their survival during winter)
 - Feed accessibility due to water availability and geography
 - Grazing strategy or method
 - Objectives for animal production and land condition
- Calculating the long-term carrying capacity provides an indication of the safe stocking rate and provides a benchmark for projections, forecasting and ongoing management. On the other hand, seasonal adjustments may be required to optimize pasture utilization and land condition and, for that, short-term carrying capacity will be needed to take into consideration the variations in rainfall, as during periods of moisture stress, plant growth, forage quality, individual gain and total gain per hectare are all severely reduced. The implementation of a sound carrying capacity exercise will also ensure that grazing patterns are made more efficient and sustainable, and that the ecological balance of rangelands is not compromised through increased grazing and inadequate size of stocks.

21. Improving the productivity of a pasture can increase its carrying capacity. An effective monitoring system, coupled with the developed pasture inventory, ensures that pastures are sustainably managed and can better withstand climatic stresses. Regarding the monitoring system, the successful experience of UNDP in the Suusamyр valley will be taken into account.

22. The livestock carrying capacity plans would be done with support of international technical assistance, and the monitoring system with support of national technical assistance. This monitoring will be a part of the CPMP performance monitoring system established within the PD under LMDP-I, while the livestock carrying capacity plans are to be part of the CPMPs.

23. ARIS Facilitation. The facilitation will comprise the recruitment, deployment and operation of the ARIS teams in the LMDP-II oblasts to enable them to facilitate the community planning process, build capacity and manage the associated grants. The Project provides financing to enable ARIS to carry out the various processes required to implement the range of activities at the PC/PUU level. The services to be provided by ARIS under LMDP-II will cover 190 PUUs, or about 380 000 households, that are part of the Project area. The required services to be provided by ARIS – which amount to US\$3.5 million – will be specified in a result-based agreement. Details of the provisions in the agreement with ARIS are found in Appendix 3 to Working Paper 1, Project Costs and Financing and provide for:

- ARIS staff at central and regional level, utilizing to the extent possible the ARIS staff that are already in place and experienced under AISP and LMDP-I with such work in the selected oblasts
- Technical Support Team, comprising: Grassland/pasture management specialist, climate change adaptation specialist/natural resource management expert, veterinary specialist, feeding/livestock specialist, and livestock economist
- Social Fund Provisions (17.25%), as part of the government requirement for staff
- Local support, comprising the 38 Community Development and Support Officers (CDSOs) deployed to work with the 190 PUUs
- Operational Costs, for field visits, vehicle hire and ARIS central/regional offices operating costs
- Equipment and Goods, for vehicles and office equipment.

24. ARIS will assist in guiding the PCs in their development and create incentives for them to adopt best practices regarding adaptive management. This will be done by designing a performance assessment system which will measure the progress of each PUU and PC in terms of the soundness of the risk-mitigation management plans; governance standards; adequacy of staffing; adherence to community financial management and procurement guidelines; and progress in planning, implementing and monitoring each aspect of the CPMP. The assessment will pay particular attention to the performance of PCs in raising pasture fees to implement CPMPs and in aligning grazing rights with pasture and winter feed resources. Performance assessments will be undertaken by the PD field staff with Project support (see further in the section on Pasture Institutional Strengthening).

25. Like with LMDP-I, the Project will, through ARIS, conduct awareness and training campaigns so that PC/PUU members in the Project area understand the benefits of increased fees to finance improvements to pasture access and winter feeding. This activity recognizes that more information needs to be communicated beyond the 15-person executive (PC) to the entire Pasture Users' Union (PUU) membership. Educating members about the rationale behind CPMPs and investments will be important to maintain support for PCs and improve members' willingness to pay sufficient pasture use fees on all animals. The Project would provide the PCs with information to explain how pasture fees are determined and the benefits of investments financed through pasture fees. Member awareness also will help livestock owners understand how they can benefit financially by ensuring that livestock numbers are commensurate with both pasture and winter feed resources and by participating in the AHSC (of the PC) animal health plans.

26. CPMP Investment Projects. This will support priority investment for implementation of the risk mitigation pasture management plans, building on the effective management model established in previous IFAD interventions and based on the close cooperation between the APIU and ARIS. The total funding provided to finance the community/PMP investment projects is about US\$ 25 million, comprising 75% matching grant and 25% community contribution in kind and cash, with the major part expected to come in the form of labour and local materials. The grants to PUU would be channelled through ARIS in line with their pattern, i.e. type, phasing and implementation, determined by the respective CPMPs. The PUUs would be expected to commit to the implementation and the achievement of the targets by signed agreements, which would envisage a phased financing of the

CPMPs against the clearly identifiable milestone indicators. Subject to the PUU's agreement and priorities, a block grant will be provided to each PUU for the implementation of its plan. The exact amount of each grant would be linked to the AO population, PUU pasture area, level of poverty, livestock number, and performance of PUU and PC evaluated against agreed upon indicators, such as the rate of collection of pasture use fees, and the PC's governance and accountability arrangements. A pre-defined open list of eligible options for investment will be put together, that can strengthen the adaptive management of pastures and promote a more strategic and sustainable use of key resources such as water, soil, fodder etc. These option will include, *inter alia*: rehabilitation packages for degraded areas (fencing, demarcation, weed/shrub control, supplementary seeding, etc.); water management measures to favour pasture resilience through increased water retention and regulation and to improve water balance and decrease evapotranspiration in areas (especially at low altitude) where hotter/prolonged summer can increase the threat of drought (fences for shade, measures to retain water in soil, drainage, riverine and water spring restoration, protection and shade through reforestation in water points); measures to prevent soil erosion, mudslides and floods; protection against storms and winds (plantations of living fences with trees and bushes); infrastructure to access/use remote pastures (road improvement, connectivity bridges, stock watering points, etc); infrastructure to enhance the value of spring/autumn pastures in view of the longer grazing season allowed by increased temperatures and shorter winter season (construction of livestock shelters and upgrading of facilities for herders); restoration of degraded pastures and improvement of vegetation cover/pasture yield/hectare with highly diverse native plant species/genetic varieties, tolerant to climate constraints (e.g. summer drought); agricultural machinery to produce/harvest/store fodder (grass cutters, hay making machines, silage choppers, etc.); support for fodder production (leguminous plant seeds, barley and corn seeds, etc.). Whenever possible, these measures would be carried out making use of adapted technology that allows energy saving and easy maintenance and replication (i.e. the thermo-isolation of shelters and stabling structures using straw was successfully tested in previous projects).

27. The Project, through a number of restrictions and safeguards, will make sure that the CPMPs include a balanced mix of investment activities, and that they properly capture the need for specific interventions on climate change adaptation and disaster risk reduction. The outcomes and recommendations of the vulnerability risk assessment carried out by IFAD during the Project development phase will be instrumental in this respect, as they will be used to raise awareness and enhance understanding at the PUU level, thanks to proper training and briefing sessions that will be organised by ARIS prior to the start of the participatory design process leading to the formulation of the CPMPs.

28. The integration of a wide array of climate proofing and adaptation measures in the eligible investment activities will be mainstreamed in LMDP-II, and this will require the build-up of new capacity and skills through the provision of specific training and technical services at different levels (ARIS, PUUs, national and local authorities).

29. Identifying and selecting potential investments would be a part of the community pasture management planning process and will ensure that investments are consistent with the objectives and priorities identified in the community pasture management plan and that arrangements are in place to finance the recurrent maintenance costs. In conjunction with the pasture planning and as part of the CPMP, the PCs would work with community vets (CVs) to prepare and operationalize the animal health plan.

30. Part of the grants will have to be used to cover technical assistance and equipment for the PCs such as hiring local technical wardens to facilitate the preparation, implementation and monitoring of pasture management plans, and contracting engineering services to advise on the technical design for infrastructure projects and conduct technical supervision. A portion of the grants also will be used to procure office equipment such as computers, printers, and to maintain the computer networks.

31. PUU groups would be responsible for managing the CPMP investment mini project(s). These groups, which may include informal pasture user groups or self-help groups, would prepare and

implement the agreed upon investment proposals. The PUU project groups would submit proposals to the PC, which will review, prioritize and select mini projects – a process that will involve each of the villages that comprise the PC area and all households to ensure that all segments of the population have a voice. The process to be used would be based on that already successfully employed by ARIS under AISP and would involve initial awareness sessions and the identification of the key elements of the community and the formation of focus groups representing them (including women, vulnerable groups). The villages would discuss their priorities through the focus group sessions and represent these priorities at the PC level by selecting representatives of each focus group from each village to work together to produce a series of activities including investment project proposals at the PC level. Through interactions/feedback loops with the villages, the CPMP would be produced and agreed upon. The PC would present the results of the selection process to the general assembly that will approve the selection. ARIS would administer the provision of grants.

32. Community Fodder Seed Programme. In order to produce a sufficient quantity of feed and forage for winter supplementation, smallholder farmers need to cultivate increased quantities of barley (*Hordeum vulgare*), lucerne (*Medicago sativa* spp.) and sainfoin (*Onobrychis viciifolia*). The access to quality seeds and inputs remains a constraint for smallholder farmers in the Project oblasts, particularly in the more remote areas. Government initiatives and several projects (e.g. ASSP, AISP and later the UNDP project “Demonstrating Sustainable Mountain Pasture Management in the Suusamyр Valley”) have promoted cost-effective and sustainable models for community fodder seed programs to make them available to members of PUUs, using a farmer-to-farmer distribution system, such as that employed under the community seed funds that have been set up in PC areas around the country.

33. Like with LMDP-I, the Project would collaborate with the National Federation of Community Seed Funds (NFCSF) formed with the support of the AISP, to establish up to 90 Community Seed Funds (CSFs) for winter fodder crops in the Project area. The process would consist of: (i) facilitating the selection of members and the executive of the CSFs (from within the community); (ii) providing grants and the associated training and logistics to support the production of fodder seed varieties that are more adapted to climatic conditions (depending on the area and based on the climate assessment carried out by the Project). A CSF would focus particularly on poor farmers in each target area. As far as possible, seeds would be procured locally with the dual purpose to stimulate domestic seed producers and traders, and conserve local biodiversity. CSF members would repay a percentage of the grant received, in the form of a portion of the seeds produced by each farmer being distributed to other farmers in the community.²⁷ Seeds will be processed (cleaning and conditioning) and the quality will be certified NFCSF experts. This initiative would be complemented by investments by the PUUs in, for example: farm machinery, feed and fodder related equipment and storage, or minor improvements to irrigation systems.

Sub-Component 1.2: Pasture Institutional Strengthening

34. The sub-component will mainly expand the activities initiated under LMDP-I to the Project area, yet in addition it would integrate climate change adaptation throughout all the proposed activities. It would promote collaboration with Civil Society organizations and existing networks that are active in the fields of training/capacity building, planning and policy dialogue relevant to climate change adaptation, sustainable development of pastures and successful innovative work in income generating activities.

35. This investment would primarily focus on the following national institutions that support pasture development: Pasture Department, Republican Association of Pasture Users' Unions, Rayon Departments of Agrarian Development, Kyrgyz National Agrarian University, and the Kyrgyz Livestock and Pasture Research Institute. Although the capacity building would be tailored according to the needs and mandate of these institutions, the Project would keep an open and inclusive approach, and

²⁷ Exact amounts will be agreed upon between the APIU and the NFCSF, but on average a farmer will return about two times the amount received which when cleaned will produce about 120% of the original amount distributed.

will strive to involve other partners that may benefit from the exercise, as appropriate. Specific adaptation and DRR training tools would be used to support the capacity building effort, building on existing materials already available and produced under past and existing projects.

36. Pasture Department (PD). The Project would continue to provide technical guidance to the PD in developing policy and legislation to advance pasture management transfer, monitoring of pasture resources condition, through assessing the quality of pastures and monitoring the performance of PCs. This would include recruiting and training oblast level PD staff, and training young professionals and assistants on more detailed research on future impacts of climate change at local levels (for example, identifying areas more affected by future droughts, production of future wind scenarios, studies on future climate variability, etc.). The Project would fund the employment of 30 young professionals – university graduates who will work in the Department for one to two years to gain field experience. This will help to build a cadre of specialists for employment in the PD, a field-based service provider or directly by PCs in the future. The capacity of the PD to effectively deal with climate adaptation and disaster risk reduction related to pasture management will be enhanced through a specific capacity building programme including staff training at both central and oblast level, study tours and technical assistance on resilient pasture management, monitoring, demarcation and sustainability issues. A pool of national and international experts would be used to plan, organize and deliver the capacity building programme. The capacity building programme will start with a discussion on the findings of the vulnerability assessment and on how the projected changes can influence and inform future decision making in the sector. The activity would also provide for public awareness campaigns on pasture management, as the Project would continue to fund the production of public information started under AISP including radio and television programs that improve rural communities' understanding of the new arrangements for pasture management and best practice. The Project also would continue supporting the PD in monitoring CPMPs' performance through contracting the teams of independent evaluators.

37. Republican Association of Pasture Users' Unions (RAPUU). The Project would continue support to the RAPUU initiated under LMDP-I. The Project would strengthen 34 rayon level Pasture Users' Unions' associations located in the LMPDI/LMDP II area and the national level association. The support would be in form of equipment, technical assistance, training and covering operational costs on a downscaling basis.

38. Rayon Department of Agrarian Development. The Project makes a limited allocation for provision of office equipment and materials to each of 34 Programme Rayon Departments of Agrarian Development to enhance their capacity to deal with pasture management issues.

39. Kyrgyz National Agrarian University (KNAU). In addition to the activities included in LMDP-I, this Project would provide technical guidance to the Agrarian Academy in upgrading and delivering modules on risk-mitigation in pasture management, which would be incorporated into the existing Bachelor degree on agriculture. The modules would include climate proofing, adaptation and risk reduction related to pasture management, through the involvement of national and international research institutions (including UCA, ICARDA, CAREC etc) active in the field of climate adaptation and pastures. The modules would include fieldwork in the Project oblasts so that students can participate in practical community pasture management planning with PCs.

40. Kyrgyz Livestock and Pasture Research Institute (KLPRI). In addition to the activities envisaged in LMDP-I, the Project will link climate change adaptation and disaster risk reduction to research leading to the development of climate-focused research plans that will allow the implementation of field projects aimed at improving resilience of the sector. As with LMDP-I, the support would include two interventions: (i) Review of current research plans and financing and development of long-term, costed research plans; and (ii) Implementation of selected pasture and livestock research projects which have direct benefits for pasture management reform and capacity building of the PUUs. The former would involve conducting a review of the research plans and financial plans of the KLPRI. It will be important to ensure that the KLPRI has a long-term and costed research plan in place and that there is a government commitment to fund this plan before investing further in KLPRI research. If

there is sufficient commitment to the long-term research plan, the Project would fund selected pasture research and demonstration activities including a continuation of research conducted under AISP.

41. Early Warning System (EWS) for pastures and livestock will provide policymakers, technicians, pasture committees and farmers with the most up-to-date and accurate information available on meteorological-related risks. This is a brand new activity to LMDP-I. The EWS would warn institutions and farmers of imminent risks so that timely interventions can be planned and disasters can be minimized or avoided. The proposed Early Warning System (EWS) would comprise the following components: (i) an Automated Weather Forecasting System (AWFS); (ii) integrated models of derived variables (DVM); and (iii) a GIS (Geographical Information System) platform to adapt the information to the user's needs and to facilitate its management. This will be coupled with a capacity building program to prepare institutions and beneficiaries in the implementation and use of the EWS. The Project would count on the existing experience of the Hydrology and Water Resources Department of the Slavic University in applying hydrological models, to link them to the EWS thus providing timely information on water balances and hazards (river floods, flash floods) and forecasting their effects on pasture systems. The information provided by the hydrologic model will allow the PD/PCs to implement preventive actions to mitigate future water conditions and the effects on pastures. The Project also makes an allocation for O&M of the EWS on a downscaling basis. It is envisaged that Government would be supporting the system with its own budget after Project completion.

42. The AWFS would be developed to meet specific requirements of the pastures and livestock sector that are still not fulfilled by Kyrgyz institutions. These would include: (i) Extending the current forecasts from the third to the tenth day, to enable technical users to plan in advance; and (ii) Providing probabilistic forecasts to enable users to know the expected situation and the probability of occurrence of other more severe situations. The AWFS will require a feasibility analysis on the forecasting skills in Kyrgyzstan.

43. The AWFS would be hosted by the Hydromet Agency of the Kyrgyz Republic. Assessment of training needs would be undertaken for operationalizing and managing the AWFS, and adequate training provided.

44. The GIS platform, including derived variable models, would be hosted at the Pasture Department, which would lead on its development, participating in the definition of content and prioritizing variables to be mapped. This also would be coupled with adequate training. The PD would take into account the participation of experts, pasture committees and civil society in the definition of derived variables and the GIS contents. Since the GIS is accessed online, external housing would be investigated and actions to ensure proper maintenance would be addressed. Other institutions (including Ministry of Emergencies), research centres, civil society organizations and other interested users would have access to the EWS as well in order to make use of its operations for planning and programming activities. The EWS would provide predictions and observations in real-time, as well as satellite information. Users would receive timely information from the EWS through adequate communication channels (radio, SMS alerts, etc.) regarding drought, rainfall, frost, floods (and other variables that might be defined).

45. The installation, operationalization and training regarding the EWS would be done with support of international technical assistance. Working Paper 4 includes technical details of the EWS, the required expertise to undertake the task and the specific Terms of Reference.

Implementation Arrangements for Component 1

46. Under the financing agreement between IFAD and the Kyrgyz Republic, the MoAM's Agricultural Projects Implementation Unit (APIU) would bear the overall responsibility for coordination and implementation of the component. However, ARIS would be the main institution responsible for implementation of the Sub-Component 1.1: Risk-mitigation Community Pasture Management Plans and Investments, and would have direct responsibility for the facilitation of all activities and training at the PUU and PC level. In particular, ARIS would be responsible for the mobilization of PCs, provision of training on governance, community procurement, community financial management and the

matching grant fund management. However, the activities regarding the community fodder seed programme are expected to be contracted out to the National Federation of Community Seed Funds and it would be coordinated by the APIU.

47. Sub-Component 1.2: Pasture Institutional Strengthening, would be with the APIU, which would develop MOUs with each of the five implementing institutions – Pasture Department, Kyrgyz National Agrarian University, Kyrgyz Livestock and Pasture Research Institute and Kyrgyz Hydromet/Slavic University. The PD would lead the Project initiatives dealing with policy and legal reform, including developing and advocating legal framework necessary for completion of pasture management transfer, developing and upgrading guidelines and training materials, and organizing the training of trainers and management of training of PUUs and PCs in the field on both legal and technical matters. This work would be carried out in close consultation with ARIS. The PD also would, with Project support, monitor the performance of PUUs/PCs, monitor pasture condition, and the implementation of pasture management plans. The Republican Association of Pasture Users' Union would, with Project support, be engaged in mitigation of disputes between PUUs, and between PUUs and other institutions, such as local self-governance bodies and forestry enterprises. It would provide informational, methodological and technical support to its members, organize various capacity building initiatives aimed at its members, and in general represent its members' interests. Support to the RAPUU will be budgeted under the ARIS subsidiary agreement with the MoF. To this extent, ARIS will have a MOU with the RAPUU.

48. The Kyrgyz National Agrarian University would be a recipient of Project support on pasture management education and would be responsible for delivery modules on pasture management to students and organizing student field work. The Kyrgyz Livestock and Pasture Research Institute would be a recipient of support on planning pasture research and would be responsible for implementing all pasture research related field work. The Hydromet would, with Project support, be responsible for installation/operationalization of the Early Warning System in cooperation with the PD. The Slavic University will be responsible for developing hydrologic models to be used by the EWS.

49. Memoranda of Understanding (MOUs) will be drawn up and agreed upon between the APIU and each of the implementing organizations spelling out in detail the roles, responsibilities, operations, M&E and reporting requirements, and expected outputs, including the meeting of milestones and other benchmarks.

Exit Strategy

50. Community-based pasture management has already proven its efficacy and impact on the livelihood of rural pastoral communities under AISP and similar projects initiated by other agencies (UNDP, GIZ, SDC, NGOs). The regulatory and institutional framework set up through the national Pasture Law provides a framework and legislation to further the development of viable PUUs, which are instrumental for enhancing resilience of pasture communities and the sustainable management of natural resources. The core of the Project activities concentrate on replicating and scaling up what has proven "to work," with efforts to refine and improve planning in terms of mainstreaming climate change adaptation within CPMPs, putting in place the EWS and supporting boundary demarcation and community based pasture mapping/assessment and monitoring. These tools will support the future planning and effective sustainable management of pastures. Building national capacities will further strengthen the regulatory framework of the supporting institutions in terms of disaster risk.

51. There are no Project-dependent or supply driven activities and/or new institutions at any level (national and oblast levels) that need to be established. O&M of the EWS would require a very limited funding of about US\$ 30-40,000 annually, and could be easily supported by the government own budget. Therefore, it can be safely said that the PUU/PCs, which are the key focus of the component, and the processes that have been established/strengthened will continue after the lifespan of the Project. This will in turn enable the PUU/PCs to continue to better manage their pastures, to continue to produce greater quantities of fodder crops, to improve the productivity of their animals, both in terms of milk yield and weight gain, and thus enhance their adaptive capacity. The progress in

achieving these goals would be monitored during the Project with assessments made to ascertain the sustainability of the activities undertaken as a result of the Project support.

Risks

52. The main risks identified are the following:

- Livestock producer members of the PUUs do not pay pasture use fees (tickets) in full, resulting in lower capacity of PCs to fulfill their mandate. Mitigating factors – An awareness campaign and training PCs and PUUs' members would be conducted on the importance of pasture use payments and revenue. Support for investment mini projects would be linked to the level of payment of pasture use fees in each PUU. The completion of pasture inventories will help facilitate a fair allocation of grazing routes and areas which will reduce the avoidance due to dissatisfaction with the allocations. Built-in accountability and transparency mechanisms will ensure channelling of information on pasture revenue collection and use to PUU members. Another mitigating measure will be to support the PD in development of legislation to strengthen the right of PUUs to enforce penalties for non-compliance to address the problem with free riders.
- Community Pasture Management Plans (CPMP) fail to capture and prioritise measures for climate change adaptation and vulnerability reduction, due to low awareness of PC and PUU on these topics. Mitigating factors – By supplementing ARIS with climate change expertise and making use of ARIS outreach agents, the Project will ensure that the results and recommendations of the climate vulnerability assessment carried out by IFAD during Project development phase, together with other relevant information, are used to raise awareness of PC/PUU prior to the initiation of the participatory process for the design of each CPMP. The PC/PUU also would be facilitated through a menu of options for climate proofing and vulnerability reduction measures that could be included in their respective plans, as appropriate.
- Livestock producer members of PUUs do not respect the pasture management plan decision and “carrying capacity” of the assigned pasture, resulting in a degradation of the natural grass cover and herd productivity declines. Mitigating factors – A number of the factors cited above will also help mitigate against this risk. In addition, the information provided by the community pasture inventories will give the members of the PUU a much clearer understanding of the nature, extent and constraints inherent in their pasture areas. This understanding combined with a more rigorous system of pasture use fees will enable the livestock producers to better manage the carrying capacity of their pastures. However, like common grazing areas around the world, it will continue to be a problem that needs to be actively managed.
- Investments do not benefits poorer members of the community. Mitigating factors – The work of ARIS under AISP has demonstrated that the techniques used and refined under AISP have been successful in ensuring the inclusion of the different segments of the livestock communities. The new Project would build on this experience and the techniques employed and introduce additional approaches to facilitate greater participation by the poorer households, women-headed households and other vulnerable groups in prioritization and decision making within the PMP process.
- Assignment of pasture to livestock producers generates conflicts which negatively impact their productive use. Mitigating factors – While this too will be an ongoing problem, the Project would provide training in conflict resolution in conjunction with the support provided in improved pasture management through the community-based pasture inventory and improved use of pasture tickets.

Component 2 – Livestock Health and Production Services

Rationale

53. Livestock health and production services are fundamental inputs to ensure healthy and productive livestock essential to rural livelihoods in the Kyrgyz Republic. The high prevalence of animal diseases not only causes high mortality and low productivity, but poses a significant public health risk. For instance, the high rate of brucellosis and other zoonosis reduces potential off take, limits market access especially for export of animals and livestock products, and creates significant public health concerns. It has been recognized that, while control of animal diseases is important, vaccination and preventative interventions would still remain ineffective without addressing the basic management practices related to animal nutrition achievable through better pasture management and adequate feed supplementation during winter time. In recent years, the government veterinary service structure has been reformed, and the State Veterinary Department (SVD) has reduced the number of field veterinary staff to less than 700. In the meantime, a rudimentary private veterinary service has been blossoming in the countryside but still needs support to be effective. There is a need to fill the on-farm services void caused by the government vet restructuring and reduction and to work closely with the remaining SVD field staff to ensure support for CVs and the provision of veterinary services on a sustainable cost-recovery basis. Such support is critical to facilitate adequate resources for the national disease control programs. The government agencies, supported under AISP, have identified gaps in skills and competency among CVs as a significant shortcoming for the provision of quality vet services. The Project will therefore aim at establishing a vibrant private veterinary service through: (i) additional support and training to ensure that CVs are self-sufficient and delivering an effective demand-driven service; (ii) the promotion of the profession and incentives to ensure young people are motivated to take up the work of private veterinarians as a viable career in the current economy; and (iii) supporting the transition of CVs from service providers for basic animal health prevention to more holistic advisers on both veterinary aspects and production management practices.

54. Although considerable work has been done on the veterinary legal framework, and it has been a critical element in creating the foundation for a sound livestock sector, some additional inputs are required, specifically in drafting secondary legislation to support the new Veterinary Law and to ensure that the new law is harmonized with existing laws, regulations and decrees. It is envisaged that this activity would be covered by the World Bank-financed PMIP.

55. Based on lessons learned from previous project interventions and an evolving situational analysis as well as taking into account the coverage by the WB-funded PMIP, the Project would endeavour to address current constraints through a set of specific activities built into two sub-components: (i) Strengthening Veterinary and Community Animal Health Services, and (ii) Animal Health Education and Capacity Building. The first sub-component would be in principle a geographical expansion of LMDP-I to Batken, Jalalabad and Osh oblasts, thus include mainly the community level activities of LMDP-I in these regions, while the second sub-component envisages some supplementary national level activities to top-up the LMDP-I allocations to ensure the expanded geographical area.

Objective and Approach

56. The key objective for the component is to increase access to livestock and veterinary services for smallholder producers, resulting in decreased mortality and increased productivity of sheep/goat flocks and cattle herds due to the reduced incidence and prevalence of diseases. LMDP-II would continue and up-scale within three oblasts many of the activities developed under LMDP-I. It would utilize many of the same implementing arrangements and institutions, including APIU and ARIS which will again drive the process. The component would directly link to the development objective of LMDP – “Improved livestock productivity and enhanced climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers” – by establishing a viable and effective animal health and livestock productivity support service in all Programme communities, thus enabling poorer farmers with a limited number of livestock to have the opportunity to reduce their vulnerability to

poverty and food insecurity. As the national level activities are covered by LMDP-I and the WB-funded PMIP, the component will focus on supporting the emergence of private livestock and veterinary services activities at the community level.

57. The Project would invest in capacity building of the Animal Health Sub-Committees (AHSCs) of local PCs and direct support to community veterinarians to establish, expand or consolidate their businesses. As part of this process, the Project would incorporate animal health requirements within the Community Pasture Management Plans, as mentioned in the previous component. To help make these initiatives more sustainable and to provide support for the community vets, the Project would support the strengthening of the rayon veterinary associations in the Project area. Since the provision of community veterinary services is threatened by the aging of vets and the shortage of new vets coming into the system, the component includes support to the institutions responsible for training and developing a cadre of new, young veterinarians.

Expected Outputs, Outcome and Indicators

58. The main expected outputs, and the associated indicators, for this component are:

- Community vets providing animal health and production services on a financially sustainable basis
 - About 380 CVs to receive training
 - About 380 veterinary packages to be provided to CVs
 - About 75 AI businesses being operated by CVs by the end of the Project
- Animal Health Committees providing support to PCs on animal health concerns
 - 190 Animal Health Sub-Committees of Pasture Committees to be formed and trained
- Educational support for animal health services operating more efficiently.
 - About 120 new vets entering veterinary practice and at least 60 CVs upgrading their skills

59. The outputs would enable the component to achieve the following outcomes (with the associated indicators):

- Healthier livestock with lower levels of mortality
 - Livestock mortality rates in the Project area reduced by 2%
 - 80% of livestock farmer households in the Project area experience reductions in animal mortality.

Investment Activities

60. The component would have two main sub-components: (i) strengthening veterinary and community animal health services, and (ii) animal health education and capacity building. Each is described in terms of the investments provided for under the Project and the implementation arrangements.

Sub-Component 2.1: Strengthening Veterinary and Community Animal Health Services

61. The sub-component would create the means to develop a technically competent and financially sustainable community veterinary service by supporting the development of a cadre of community vets together with establishing and training Animal Health Sub-Committees (AHSCs) to provide the PCs with a knowledgeable means to help guide the planning of animal health activities within the PUU area that come within the Community Pasture Management Plans (CPMPs). The AHSCs would then be responsible for coordinating the provision of herd health and production services, working together with the CVs to ensure that the flocks and herds remain healthy and show steady gains in production yields over the life of the project. The CPMPs would include guidelines for health and production practices deemed appropriate for and agreed upon by the members. This would include routine health

procedures, compulsory vaccinations and a clear understanding among members regarding expectations for individual farm feed budgeting, preparation of winter feed, and integration with the management of optimal pasture access and rotational grazing. The AHSCs also would be expected to manage community level Animal Disease Control and Compensation Funds as the basis for preventive programs, vaccination and eventually compensation if the legal basis for this is established. The activities planned under this sub-component are: (i) Establishing and Training Animal Health Sub-Committees, and (ii) Community Veterinarian Capacity Building.

62. Establishing and Training Animal Health Sub-Committees. The Project will support the establishment of animal health sub-committees (AHSCs) as sub-committees of the PCs²⁸. The AHSCs will coordinate provision of herd/flock health and production services to ensure steady gains in livestock productivity. As required under the Pasture Law, pasture management plans would include guidelines for health and production practices such as routine health procedures, compulsory vaccinations and a clear understanding among members regarding expectations for individual farm feed budgeting, preparation of winter feed and integration with the management of optimal pasture access and rotational grazing.

63. The three key investments under this activity are: (i) Upgrading AHSC Guidelines and Training Materials, (ii) AHSC Mobilisation/Facilitation and (iii) AHSC Strengthening.

64. Upgrading AHSC Guidelines and Training Materials. Animal health and production are considered to be closely linked and the Project would adopt a holistic approach in dealing with animal health as an integral part of the production system to include feed, feeding, reproduction and on-farm food safety as the initial link in the value chain. The provision of hygienic and safe raw material at the farm level is the cornerstone of a high quality, safe value chain for animal source foods. The Project would upgrade the training and extension modules related to animal health, feeds and feeding that have been developed under LMDP-I.

65. AHSC Mobilization/Facilitation. The Project would continue to strengthen the capacity of the PCs and their pasture management responsibilities as outlined in the pasture component for the Project. In this context, the Project would support the establishment of 190 Animal Health Sub-Committees (AHSCs) under the PCs that would take on more of a role in specific livestock and animal health interventions among members and their livestock. The AHSCs would monitor the overall veterinary services among the animals before they are moved onto the pastures to ensure that they have the appropriate required vaccinations and other treatments deemed necessary by the AHSC and its members. The delivery of the veterinary services would be based upon a contract arrangement between CVs and PCs (or AHSCs) and would be facilitated through training of trainers for CVs, technical support and capacity building at all levels.

66. AHSC Strengthening. The strengthening of the AHSCs and the CVs and their respective capacity building would be a fundamental Programme contribution expected to result in a more sustainable and effective system for veterinary care and livestock production extension. This would lead to improved herd management, increased weight gains with less seasonal fluctuation and a higher off take rate from the pastures. In addition these grassroots institutions would be linked to the national animal disease control strategies and provide a more sustainable and committed framework for the future. At mid-term, an assessment of the viability and effectiveness of vet input supply channels (mainly medicines and vaccines) from central stock-houses to rural areas will be undertaken. As result of such assessment, a proposal for developing public-private partnership in support of a more efficient supply network involving the private sector (e.g. private suppliers and private veterinarians involved in field activities within the PCs) will be prepared.

67. Underpinning this approach would be a comprehensive capacity building programme at all levels of the veterinary service delivery system that will ensure knowledge, understanding and motivation and provide for a rational professional development and continuing education program for

²⁸ While AISP facilitated the establishment of PCs, provided for in the Veterinary Law, it did not establish Animal Health Committees.

all veterinary professionals in the country and include incentives for the inclusion of women and members of poor households in the profession.

68. Intensive training would be channelled to the AHSCs through the contracted PVs, which would be combined and integrated with the training to be provided under the AHSC cost-shared grants but scheduled at the beginning to get the programme started.

69. Community Veterinarian Capacity Building. AISP demonstrated the potential role for CVs to become livestock health and extension service providers at the village level and established a basis for equitable remuneration, fee-for-service delivery systems and the willingness of farmers to pay for high quality and reputable services which produced measurable results. However, CVs are struggling to become sustainable businesses based on fee-for-service from farmers and government. The value of the CVs as providers of public good services (vaccination, movement control certificates, blood testing, etc.) has only recently become appreciated by the SVD. The Project therefore would facilitate the development of income generating opportunities for CVs, including:

- vaccination contracts with the AHSC of the PC (on behalf of SIVPSS);
- general animal health and production extension support to the AHSC;
- vaccinations and/or treatments against productivity limiting diseases e.g. internal and external parasites for farmers;
- advising PCs on feed budgeting;
- advising farmers (especially in groups) on better animal management and feeding (including fodder crop production);
- selling drugs and other animal remedies; and
- providing artificial insemination services

70. The Project would continue the support to CVs (a total of up to 380 CVs) in the Project area, who however must be: (i) registered with the Veterinary Chamber, (ii) under contract with an AHSC, and (iii) a member of the rayon level veterinary association. The Project would promote CVs as the primary service providers for comprehensive, preventative herd/flock health, and promote the productivity improvement program. Specifically, the Project would adopt a holistic approach in dealing with animal health as an integral part of the production system to include feed, feeding, reproduction and on-farm food safety as the initial link in the value chain. To support this, a considerable amount of the training and extension related to animal health, feeds and feeding would be provided to the AHSCs through the contracted CVs. To enable the CVs to provide this support to the AHSCs and the members of the PUU, they would receive technical and business management training, with follow-up training provided one year later. Project inputs would include essential equipment, AI equipment and a starter pack (as demanded by vets wanting to start such a business), drugs and medications, and a fixed transportation allowance. The total package would not exceed US\$3 000 per CV (including a 50% contribution by a CV).

Sub-Component 2.2: Animal Health Education and Capacity Building

71. Effective implementation of livestock health and production programmes requires knowledgeable service providers with a good understanding of the multi-faceted aspects of herd/flock health and the feeding required for optimal productivity. AISP has delivered a number of targeted animal production and health training programmes that have had a limited impact on changing farmers' behaviour around improved livestock health and production. However, through the AISP disease control programmes, CVs are interacting with farmers on a regular demand-driven basis. These CVs possess the reputation to be able to impart information to farmers that is deemed credible and sensible to adopt, and worthy of consideration by farmers in a practicable way. The Project would take advantage of this access to farmers to upgrade the skills and knowledge of the CVs (including technical, management and extension skills). There would be five key activities:

- An updated Veterinary Education Programme

- Veterinary Education and Training
- Student Incentive Programmes
- Professional Development and Training.

72. Updated Veterinary Education Program. The capacity building and training programmes under the Sub-component would be linked to a needs assessments survey to identify knowledge gaps and understanding of animal health, feeds, feeding and production management. It is envisaged that LMDP-I would elaborate a comprehensive training and capacity building programme, which would include developing materials to address the issues identified in the survey. This Project makes a limited allocation for updating the above programme.

73. Veterinary Education and Training. Like with LMDP, the Project would continue working closely with the Kyrgyz National Agrarian University (KNAU) to ensure the preparation of highly qualified graduates. Specifically, the Project would focus on those simple upgrading activities that would directly support new graduates in developing the needs for on-farm delivery of animal health and production services. The Project would continue the programme started under the AISP and LMDP-I and support student practical attachments to work with CVs and in Government veterinary institutions including laboratories, rayon veterinary centres and the SIVPSS's epidemiology unit to learn hands-on skills. The Project would provide a nominal stipend to cover expenses for students who participate in vaccination programmes during the school year and a monthly stipend for longer attachments in the field.

74. This sub-component also would include the refurbishment and the equipment of the Teaching Laboratories (including mobile units) at the KNAU at a cost of US\$200,000. This is an additional allocation to LMDP-I. The upgrading of such facilities will allow students to increase their knowledge on two key aspects of their profession: diagnostic and clinic skills.

75. Student Incentive Programme. There is a significant need to encourage new graduates to take up positions in the major livestock keeping areas. The Project would include a variety of initiatives to provide incentives for students to enter the veterinary faculty and ultimately become a CV, such as: (i) entry scholarships, (ii) practical attachments during their programme and (iii) the opportunity to receive internship grants upon graduation.

76. A scholarship programme would be supported by the Project to create opportunities for students from the poorer areas and from designated poverty households within the three Project oblasts to attend the veterinary faculty at KNAU. In order to increase the portion of women entering the faculty from the current low level, a target for women candidates has been set at 30%. The programme would be managed and administered by the KNAU faculty. If there are insufficient qualified students meeting the necessary poverty and gender criteria, the scholarships would remain in abeyance until the criteria could be met and would not be allocated to other students. As a precondition on agreeing to enter the programme, the scholarship recipients would be required to enter the post-graduate internship programme supported under the Project (within the SIVPSS).

77. Internships would be supported by the Project for new graduates to work in close cooperation with recognized CVs as mentors and in isolated areas of need for a period of at least three years. These interns would receive a start-up package similar to the support for CVs including equipment, drugs, a transportation allowance and a monthly stipend for the first six months. Compensation also would be provided to the mentoring CV for six months. The same qualification criteria would be required for these interns as for the CVs being (i) registered with the Veterinary Chamber, (ii) member of a rayon association, and (iii) contract with a AHSC directly or through their mentor.

78. Professional Development and Training. As with LMDP-I, the Project would continue supporting the professional development and continuing education programme institutionalized in the veterinary faculty. The Project would facilitate the access to e-learning courses via Internet by providing equipment and Internet connections, and covering subscription fees. In addition, the opportunity to attend International Training Courses would be given to young professors (of which 50% shall be

women). KNAU commission will operate the selection according to knowledge and capacity gaps, and priorities identified during the needs assessment.

Implementation Arrangements

79. Under the financing agreement between IFAD and the Kyrgyz Republic, the Ministry of Agriculture's APIU will bear the overall responsibility for coordination and implementation of the Livestock Health and Production Services Component. The State Inspectorate for Veterinary and Phytosanitary Security (SIVPSS) under the guidance of the APIU will be responsible for implementing Sub-Component 2.1 "Strengthening Veterinary and Community Animal Health Services," with ARIS responsible for facilitation, combining the animal health planning with the pasture management planning in the CPMPs and for managing the grant programmes for the Community Vets and the Animal Health Sub-Committees. Memoranda of understanding (MOUs) will be agreed upon between the APIU and ARIS and between the APIU and the other implementing agencies. The activities planned for Sub-Component 2.2 "Animal Health Education and Capacity Building" will be the responsibility of the Kyrgyz National Agrarian University, under the guidance of and accountable to the APIU, with roles and responsibilities specified in an MOU. The KNAU might sub-contract Agrarian Universities located in the Project area (Jalalabad and Osh) to implement some of the activities under its responsibility.

Exit Strategy

80. In line with LMDP-I, LMDP II activities aim at strengthening animal health and production services that have been built on the models and approaches successfully implemented under AISP. The interventions planned in support of veterinary legal and regulatory aspects will further contribute to establishing a robust enabling framework in which the Project will operate. LMDP-II will be implemented by well-established institutions APIU and ARIS which will again drive the process and continue it after the end of the Project. The integration of AHSCs activities within the PCs' management plans will help make them sustainable bodies: the PCs having their own source of funding from pasture revenue and other income raising sources. As for the CVs, the initiatives supported under the programme will help the CVs develop financially sustainable businesses which, by being linked to specific AHSCs, will have close links with a large number of livestock producers to whom they will provide services. The activities supporting young students will contribute to developing the next generation of professional vets. The holistic approach in support of animal health and production that has been adopted by the Programme is the key element for the sustainability of activity in the future.

Risks

81. The main risks to Project implementation are the following:

- Livestock farmers' ability/willingness to pay for vet services (advice, visits, vaccinations, vaccination fees, AI services, etc.) are insufficient to ensure community vets are financially sustainable. Mitigating factors – Specific actions have been included to help members of these communities understand the importance of having sustainable vet services within their communities – experience under AISP indicates that awareness campaigns have been successful in combating the "dependency mindset" and developing positive attitudes within the communities.
- School graduates from the three Project oblasts do not find the study of veterinary/animal production science sufficiently attractive. Mitigating factors – this is a real risk but discussions with the KNAU indicate that there is enthusiasm in a number of areas for entering veterinary courses in university with the aim of returning to home areas to practice.

Component 3 – Diversification and Market/Value Chain Initiatives

Rationale

82. The rationale for the third component is the need to promote diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. The Project will encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women – can build upon, improve, and expand existing value chains and develop additional sources of income, becoming service providers for the wider community.

83. The rapid market/value chain assessment that was carried out during the design of LMDP-II, which examined constraints and opportunities for the marketing of livestock and livestock products from PUUs in the three oblasts, demonstrated that there are very limited opportunities to design viable project interventions in the value chains for live animals and meat products that would enable smallholder livestock farmers to capture the extra value. The market demand combined with the potential in these areas indicated clearly that the Project should concentrate on the milk value chain where there is a strong market, interested partners and the capacity to profitably produce quality milk and milk products. The rationale for the intervention is the low return currently achieved by livestock farmers from their dairy animals combined with the opportunity to develop sound partnerships with milk processors and to improve the quality and profitability of small processors of milk products by women's groups. Livelihood security through improving the diversity and security of resources, skills and technologies that are available to livestock communities will enhance the adaptive capacity of poor rural communities. If households are to be resilient then they need adequate resources to fall back on in times of need and this means finding other ways to earn an income. The vulnerability assessment that was undertaken during the design phase of the Project identified areas where climate change impacts are going to affect the stability of income generated from the livestock sector, which is one of the main economic sectors in Kyrgyzstan. For that reason, this component will identify adequate additional income activities that could be developed and that could be geared toward women in an effort to enhance their resilience. Priority for supporting income diversification will be granted to those regions that have been identified as most vulnerable to forecasted climate change by the IFAD vulnerability assessment, as a way to provide a safety net against possible economic losses of the livestock sector. There is experience in-country within previous and ongoing projects supported by UNDP, JICA, GIZ, FAO and others, which demonstrate the feasibility and economic value of income diversification, especially in fields such as horticulture, value-added, non-timber forest and rangeland products, and tourism-related services.

Objective and Approach

84. The objective of the component is to enable livestock producers in the Project area to expand their milk production to meet market demand and thereby achieve improved returns from their dairy animals as well as introduce a set of additional viable income-generating activities that would increase the resilience of poor vulnerable groups, mainly women..

85. The approach is to work, on a relatively limited scale, with groups of livestock producers and communities within the PUUs and to facilitate their development as business/market groups. The aim is to test through commercial and realistic operations how best to implement such interventions as a basis for future scaling up.

Expected Outputs, Outcome and Indicators

86. The main expected outputs, and the associated indicators, for this component are:

- Higher quality and volumes of milk produced for assured markets
 - 10 milk collection/cooling centres established in the Project area
 - 15 percent producer increases in the price per litre of milk
 - 15 women's processing groups operating by the end of the Project

- Value added in milk improves by 20%
 - Additional income-generating activities supported to enhance risk-coping mechanisms
 - 25 additional economic activities groups established, with at least 40% of them being women led groups
 - 25 grants for economic diversification disbursed to new enterprises established, with at least 40% of grants to women groups.
87. The expected outputs would lead to the following component outcome:
- Income from additional income generation activities benefits communities prone to climate change:
 - Beneficiaries' household income increased by at least 20% from additional income activities
 - 25 partnerships formed between farmer groups and processors/market intermediaries.

Investment Activities

88. Component investment is split between three activities: (i) programme development and implementation; (ii) milk value chain investments; and (iii) additional income generation for vulnerability reduction. The first is to facilitate the implementation of the component activities with the second and third representing the investment, combining the matching grant funding and group contributions, for establishing and/or upgrading enterprises.

Programme Development and Implementation

89. Like with LMDP-I, this activity provides the means to develop the detailed design to implement the two investment activities under the component:
- Component Design The component provides for the hiring of a senior international business/marketing specialist, experienced in the region with similar types of operations to develop the detailed design of the component. The expert would work closely with ARIS to develop the terms of reference, tender documents and draft the contract for the specialized business service provider that would become responsible for implementing the component activities under the supervision of ARIS.
 - Specialized Business Provider Services would be provided for in a four-year, performance-based contract with locally-based service providers that have solid experience in business/market development and specific knowledge and skills in the livestock and preferably the milk sectors and additional income generation activities for rural communities. The contract would require the service providers, working with ARIS, to carry out awareness creation/promotion for various types of investments in the communities, to support livestock producers and vulnerable segments of the communities to form business groups, and to help them prepare business plans to submit to the project for possible support. Thereafter, the service provider would carry out assessment and selection of successful groups and provide subsequent support and training of these selected groups both in technical and business practices and also in developing sound contractual arrangements with the market partner. The contracts would be structured in such a way that payments to the service provider would be linked to the successful establishment and operation of the milk collection/cooling centers, the women's milk processing group enterprises and the additional-income enterprises. At mid-term, the selected Business Provider will prepare an investment proposal for pilot activities in support of the marketing of live animals and meat produced from PCs' members. In case the proposal is favourably considered by both the GoK and IFAD, a re-allocation of project budget will be undertaken in order to cover the costs of such pilot initiative.

Milk Value Chain Investments

90. As with LMDP-I, the component would focus exclusively on the milk value chain, with the aim of adding value to the milk produced by supporting two initiatives: (i) establishment of milk collection and cooling centers, through a partnership arrangement with milk processing plants; and (ii) support to women's groups to set up small-scale milk processing facilities focused primarily on high quality traditional products.

91. A key to each initiative would be the establishment of partnership arrangements with "the market." In the case of the milk collection and cooling centers, the partnerships would be with milk processing plants that would participate in the investment in the centers and create a guaranteed market for the livestock producers' milk. In the case of the women's milk processing groups, the partnerships would be with market operators and other market outlets such as schools, kindergartens and institutions that would provide a regular outlet for the products. Thus, in both cases, the initiatives would be "market-demand led." While these enterprises would be based in the PUU areas, they would not be owned or operated by the PUUs, but rather be commercially independent enterprises which would buy milk from the livestock producers within the area of a PUU, and sometimes from adjoining PUUs, for collection/cooling or small-scale processing.

92. Milk Collection and Cooling Centres (MCCCs). About 10 groups of livestock producers would receive financing of up to US\$ 35 000 for the establishment of MCCCs in their PC/PUU areas, which are essentially equivalent to Ayil Okrug areas. On average, it is expected that the groups would comprise 20-30 persons, but the number of members would be up to the individual groups to decide. Generally, only one MCCC would be established in a PUU area, but in some cases the MCCC could cover more than one PUU. Only those PUUs that are within economic distance from a milk processing plant – on average about a 100 kilometre radius – would be able to set up MCCCs. The basis of the operation of an MCCC would be the establishment of a partnership with a milk processing plant and confirmed agreements with a sufficient number of livestock producers in the PUU to ensure adequate and regular supplies of milk to the centre.

93. The MCCCs would be based on the type of facilities that have been successfully established in Naryn and elsewhere. They would have a concrete floor, sewage and running water systems, hand washing and toilet facilities, tiling, uninterrupted supply of electricity and glass windows. They would be equipped with a two-ton (mt) refrigerated tank with attachments (pumps, hoses, etc) and small lab equipment (milk analyzer, aerometer, centrifuge, etc). Each MCCC would be staffed with a manager, a person responsible for milk handling, and a person for testing the quality of milk. The financial analysis presented in Appendix 10, Financial and Economic Analysis, demonstrates that an MCCC supplying 2 mt/day of milk for 300 days per year would produce an annual positive gross margin of 605 000 Kyrgyz Som (about US\$12 340), generating a financial return to the MCCC of 55% over a period of ten years. The returns to labour day would be around KGS 763 (about US\$16) .

94. The investment would include: (i) a matching grant from the Project, representing 40% of the investment; (ii) a contribution by the MCCC group members of 20% of the total cost in kind, primarily in labour and materials; and (iii) a contribution by the milk processing plant of the other 20%. The total cost of an MCCC is estimated to be about US\$30 000. ARIS will decide on the phasing and geographical distribution of MCCCS once it gains experience with the operation in LMDP-I and each LMDP II oblast.

95. Women's Milk Processing Groups. In general, the units to be set up by these groups would be established in areas that are beyond the area that could be readily accessed by a milk processing plant. The Project anticipates supporting the establishment of 15 processing units at a cost of up to US\$ 21 000 each with a model similar to that used by the Kyrgyz New Zealand Rural Trust in Naryn Oblast. Groups would typically comprise five to seven women who have been traditionally involved in milk processing and selling dairy products, including: kefir (liquid yogurt), smetana (sour cream), curd (cottage cheese), condensed milk and kurut. Products would be certified and positioned as safer and higher quality than those normally sold in the market. During the summer season a group would be expected to process on average 180 litres per day. Like the MCCCs, the key to success will be to

develop solid partnerships with buyers in the market. However, it also has been shown that the groups could sell to kindergartens, schools, government institutions and shops.

96. A processing unit would have a concrete floor, sewage and running water systems, hand washing and toilet facilities, tiling, uninterrupted supply of electricity and glass windows. It would be equipped with a set of kitchenware (vats, pots, milk cans, stove etc), a milk pasteurizing unit, two cream separators, one butter churn, two cheese tanks and two fridges. In addition, a set of tools would be provided to measure the water content and milk temperature.

97. The investment would include a matching grant totalling 80% of the total cost and a contribution by the women's group members of 20% in kind, primarily in labour and materials. This model demonstrates the likely returns from an investment in expanding an existing small-scale milk processing unit from 250 to 500 litres per day costing about US\$ 13 000 in terms of hardware (mainly equipment). The model assumes that the unit is run by a group of five women. The investment would result in production of 9 000 kilograms of cottage cheese, 3 600 kilograms of butter and 8 570 kilograms of sour cream per year. The financial analysis presented in Appendix 10, Financial and Economic Analysis, demonstrates that a women's group would have an annual incremental benefit of KGS 402 800 (about US\$8 220) and produce IRR of 61% over a period of 10 years. The model indicates that the household benefits for project participants would improve by about US\$1 644 per year. The returns to labour day would be around KGS 389 (US\$8).

Income Diversification for Vulnerability Reduction

98. The activities under this component include the provision of support to livelihood diversification as a means of adaptation, and support to livestock communities with innovative income-generation activities in cooperation with private and/or public enterprise partners, and mainly with emphasis on women, which will allow an integration of income generated by pastoral activities. In a climate adaptation and vulnerability reduction context, diversification will benefit pastoral households by creating new employment opportunities especially to the weakest segments of the pastoral society, such as women and youth, and by providing a valid economic complement to the strictly pastoral economy.

99. A preliminary assessment carried out during the design phase of LMDP-II identified niches for economic diversification in livestock farmers' communities, through the analysis of opportunities, gaps and needs. Several interesting case studies and best practices were gathered, including successful initiatives within previous and ongoing projects supported by UNDP, Aga Khan Foundation, JICA, GIZ and others, which demonstrated the feasibility and potential economic value of income diversification, especially in fields such as nurseries, horticulture, non-timber forest products and tourism-related services. The Project has identified small-scale horticulture as a priority field for investment, although support to other activities could be considered at a later stage, based on assessment and monitoring of the work.

100. For this component, the main investments would preliminarily include: (i) solar greenhouses for the production of vegetable and horticulture products, which would meet a growing need not only from the communities themselves, but also from the fast-growing national and international tourism sector; and (ii) multipurpose solar dryers or electricity-powered dryers for the drying of fruits, herbs, and aromatic plants. In addition to enhancing diversification and adaptive capacities, these activities will contribute to improved food and nutritional security. The promotion of these new activities will follow a resource-conscious approach: the project will make sure that the installation of greenhouses and dryers does not imply an unsustainable use of resources such as water or energy, and that the new devices do not absorb resources that are vital to livestock herders. To define further income-diversification activities, the Project would benefit, at mid-term, from an exercise that would assess the introduced activities, and also would look at additional income diversification activities that could be supported.

Implementation Arrangements

101. The same or two different milk and additional economic enterprises service providers would be responsible for different types of interventions, under the guidance and responsibility of ARIS. ARIS would have an active role in working with the service providers particularly during the creation of the program awareness and promotion campaign. Furthermore, the provision of technical and business advisory support for the MCCC's and the women's milk processing groups would be done in conjunction with the other community facilitation and planning processes that ARIS would carry out in the Project PUUs. The service providers would work with ARIS during this process and thereby provide the business and market skills to complement the community facilitation and planning skills of ARIS.

102. The sequence for the planning and selection of the MCCC's, the women's groups and the additional income activities is expected to be as follows:

- A public awareness campaign would be conducted that elaborates on the criteria for the selection of groups, possible locations based on access to market and milk processing plants, and identification of vulnerable groups for the development of other income-generation activities where income from livestock is limited. The campaign would focus on a business approach and the need for contributions by groups (to be matched by contributions in the case of the MCCC's by the milk processors).
- Service providers, with ARIS, would carry out a rapid appraisal of communities with the aim to identify groups of livestock producers and communities that could potentially be interested in establishing group businesses – either MCCC's, or women groups.
- Promising groups would be identified and given support in developing their proposals including business plans.
- Proposals would be assessed and the best ones selected for support by the Project.
- Contracts would be signed between groups who will operate the MCCC, women's milk processing facilities and the additional-income generating activities. Agreements with buyers also would be signed – and commitments made with livestock dairy producers to supply milk to the MCCC's and women's processing units.
- MCCC's/women's units and other beneficiaries would receive initial training and support and start their operations in accordance with the business plans.
- Groups would receive follow up business and technical training.
- Monitoring and evaluation would be done by ARIS/service providers and necessary additional ad hoc business and/or technical advice/support would be provided.

103. The MCCC's would be chosen based on the following criteria:

- Availability of an appropriate facility for a long-term lease by the group of livestock producers.
- Distance from the processor's location not to exceed 100 kilometres.
- Central to villages comprising the Ayil Aimak and convenient for delivering milk by dairy livestock producers.
- Access to running water and the availability of uninterrupted supply of electricity especially during the summer season.
- A dairy livestock population sufficient to supply enough milk – i.e. at least 2 metric tons per day (With the average milk yield of 5 litres per day, there would need to be at least 400 cows; however, with home consumption and side-selling of milk estimated at 20%, the number would need to be increased to more than 500 cows). It will be important to maintain an adequate number of cows accessible to the MCCC's to enable them to have a stable supply of milk during the summer migration of animals to remote pastures.
- Documented agreements with livestock producers to deliver milk to the proposed MCCC in sufficient quantities to enable the MCCC to have a financially viable operation.

104. The women's milk processing groups would be chosen based on a similar set of criteria:

- Availability of appropriate facility for a long-term lease by the group of women.
- Availability of markets and clients and agreements with market intermediaries for the purchase of their products.
- Central to villages comprising the Ayil Okrug and convenient for the delivery of milk by dairy farmers.
- Access to running water and the availability of uninterrupted supply of electricity especially during the summer season.
- A dairy population sufficient to supply enough milk, i.e. at least 500 litres a day (With the average milk yield of 5 litres per day, there should be at least 100 cows and with the home consumption and side-selling of milk estimated at 20%, the number would need to be increased to 120 cows per processing unit).

105. The additional income-generation activities would be chosen based on:

- Economic opportunities for significant value-adding additional income activities, including available infrastructure, existing skills and knowledge.
- Level of vulnerability and need for additional income where household economies from the livestock sector will be compromised by climate risk.
- Availability of organized groups, with priority given to women groups.
- Availability of markets and clients and agreements with market intermediaries for the purchase of the products.

Exit Strategy

106. The following steps should be undertaken to ensure that MCCCs and WMPGs sustain their activities after the project closure:

- The Project would provide a full set of financial, business and technical training, to enable the groups to operate financially viable and sustainable businesses. Follow-up training would also be undertaken, which would address issues that have arisen. A depreciation fund would be created from at least 20% of the profits earned to replace equipment when necessary.
- Beneficiaries would develop strong partnerships with the processors and the women's milk processing groups, and beneficiaries on additional income activities would occupy a certain market niche and establish strong relationships with the clients.

Risks

107. The following are risks that could affect the implementation of the component:

- Weak market linkages and exploitative markets/milk processors constrain expansion of production to meet market demand. Mitigation - The main way that the Project will mitigate this risk will be through an ongoing review and adjustment of the contractual arrangements with the milk processing plants to ensure that both parties understand their commitments and resolve any issues that arise. Similar arrangements will be made with the women's milk processing groups and their buyers.
- Weak uptake of income-generating activities and absence of organized groups to engage in the investments. Mitigation - The Project will mitigate this risk through awareness and training that encourages the formation of enterprises/business groups, such as helping prepare business plans to submit to the Project for possible support. The sharing of experiences regarding economic benefit will be an important means to encourage further engagement.
- Contractual obligations are not fully observed and relationships break down. There is a risk that the group of livestock producers operating an MCCC may sometimes prefer to sell milk to buyers from the outside at a higher price and thus breach the contract with the processor.

Likewise, the processor may prefer to buy milk occasionally from other suppliers at a lower price. Mitigation - The measures will include: clearly specified contracts, training on business ethics, regular M&E by service providers and ARIS, and elaboration of the benefits of long-term partnerships.

- Continued closure of export markets constrains demand for milk. This relates particularly to the closure of the border with Kazakhstan. Mitigation - The mitigation measures include ensuring a safe epizootic environment through vaccinations of animals against FMD, anthrax and other epidemic diseases and introducing a zoning system to seal an oblast to prevent the spreading of diseases into other oblasts of the Kyrgyz Republic.
- Insufficient quantities of milk available from dairy producers to enable the processing units to operate at a viable level. Mitigation - Written agreements will be entered into with all livestock producers in the area with the agreements specifying the volumes and regularity of supply and the penalties for breaking the agreements. This initiative would be supported by activities implemented under Component 1 to improve the availability of forage from the pastures and fodder for winter feed that will impact on animal nutrition and thus one's milk yield. Support for Artificial Insemination will further help improve the milk yield of animals.

Component 4 – Project Management

Rationale

108. The justification for the component is the need to provide a means to facilitate the implementation and coordination of the Project and the oversight of a range of national implementing agencies that will be responsible for specific technical aspects. There is also the need to provide for the ongoing monitoring of the Project, the development and operation of an MIS system for Project management and the need to facilitate exchange of information, assembly of lessons learned, best practices and “Project household stories”, though knowledge management. Each of these aspects will be provided for in Component 4.

Objective and Approach

109. The objective of the component is to provide effective management for the Project embedded within the government organizational structure. In this case, the Project will be the responsibility of the Agricultural Projects Implementation Unit (APIU), which comes within the Ministry of Agriculture and Melioration (MoAM). It is the same unit that is responsible for implementing AISP and LMDP-I and will retain most of the same staff. While APIU will have overall responsibility for implementation of the Project, ARIS will be responsible for implementation of all those aspects that involve communities and the management of Project grants. ARIS will have a considerable degree of autonomy in managing these Project activities and will have its own budget and financial arrangements with IFAD (see Attachment D to the main text, Flow of Funds Arrangements and Annex VII, Financial Management and Disbursement Arrangements).

110. The component would provide only for the staffing and operation of the APIU, not for ARIS which is provided for under the Sub-Component “Community Risk-mitigation Pasture Management and Investments”, which includes the cost of the assigned ARIS staff: (i) ARIS staff at central and regional level, (ii) Technical Support Team, (iii) Social Fund provisions, (iv) Local support (190 PUUs, 38 CDSOs), (v) Operational Costs, and (vi) Equipment and Goods. All provisions for operating the APIU are contained under this component and are described below.

Investment Activities

111. The investment in the APIU is split between two Project cost tables with the main costs associated with managing the Project within one sub-component and monitoring and evaluation/knowledge management in the other. These activities complement the ones envisaged under LMDP-I.

112. The first sub-component, which presents the APIU costs, covers the following items:

- Equipment and Goods, essentially office equipment
- Vehicles, one 4-wheel drive vehicle
- Technical Assistance, including audit, accounting software/support and short-term TA
- Training, funding limited to the first three years
- Salaries (largely for PY5 when LMDP-I is completed)
 - Director
 - Project Manger
 - Pasture Management Specialist
 - Livestock Specialist
 - Financial Manager
 - Procurement Specialist
 - M&E Manager
 - M&E, Gender and KM Specialist
 - IT Specialist
 - Interpreter
 - Disbursement Officer
 - Assistant Procurement Officer
- Allowances, primarily per diems and overnight allowances
- Social Fund, as per requirements
- Office Running Costs, utilities, communication and other costs
- O&M

113. Monitoring and Evaluation and Knowledge Management. The Project will apply the M&E system to be established under LMDP-I. The KM activities under this sub-component will supplement LMDP-I in terms of further enhancing a two-pronged knowledge management strategy to be established under LMDP-I and aimed at ensuring that the lessons learned and the knowledge generated by the Project are: (i) shared at the level of pasture users, local self-governments and communities, and (ii) inform and support efficient and sustainable management of pasture resources. The KM programme will make use of innovative tools to spread internally-generated knowledge, and to feed into the Project cutting-edge information from other experiences within and outside Kyrgyzstan. These might include study tours and "learning roots," among others. An assessment of the achievements, gaps and needs in knowledge management will be carried out yearly by the APIU, and a work plan for the following year will be agreed upon and put in place.

114. During the inception phase of the Programme, a series of meetings and workshops will be organized involving national partners (networks of practitioners, researchers, civil society organizations - Climate Network of Kyrgyzstan, University of Central Asia, CAREC - with the objective of agreeing on effective mechanisms of knowledge management and information flow/exchange that build on existing structures and build synergies with the set-up and capacity of each partner. These national partners will support the generation of knowledge management activities that need to be undertaken, and mainly related to development of tools for risk-mitigation pasture management plans, communication and awareness raising tools, and campaigns that can provide a framework to spread project results among a wider audience (bulletins, newsletters, web sites, workshops and conferences etc). Such workshops for knowledge management will continue during the Project implementation as a part of annual review and planning workshops.

115. At the regional level, the Project will make use of existing knowledge management and information sharing networks, including linkages with CACILM. The constant dialogue with other international institutions rooted in Central Asia and with a strong interest in information sharing (GIZ,

AKF, FAO etc) will multiply opportunities to disseminate project results throughout the region. The project will tap existing mechanisms of international knowledge networks to facilitate the mainstreaming of lessons learned into wider policy and governance contexts, and fulfill the criteria and objectives of IFAD's knowledge management strategy.

116. Details of the implementation arrangements, including the organizational responsibilities and Project organization, are presented in the Annex V, Institutional Aspects and Implementation Arrangements

Appendix 5: Institutional aspects and implementation arrangements

A. Introduction

1. One of the major factors of the livestock sector's poor performance in Kyrgyzstan is weak institutions at the national level responsible for ensuring policy and the regulatory framework, producing and transferring required knowledge, and providing technical support to livestock producers. In addition, the lack of institutions at the local level to mobilize farmers to jointly govern communal resources and protect their rights leads to low productivity of the sector, and high incidence of poverty in mountainous livestock communities.
2. Investments in the livestock sector since the country's independence has triggered fundamental changes in the structure of livestock production and marketing, a shift from inefficient state operations to the growing private sector. LMDP-I and LMDP-II investments provide a crucial opportunity to finalize such management transfer in the livestock sector, especially in regards to pasture management, climate change adaptation and the provision of animal health services. These two operations following AISP and supplemented by the upcoming World Bank-funded PMIP investment would ensure the sustainability of achieved results and advance the sector's performance to increase economic growth and alleviate poverty.
3. Achieving this will require clear understanding of and commitment of all stakeholders to the development objectives of LMDP-I and LMDP-II or Livestock and Market Development Programme (LMDP)– "Improved livestock productivity and enhanced climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers".
4. The 2009 Pasture Law has simplified and strengthened the management and administration of Kyrgyz pastures and has provided a foundation for implementation of projects such as LMDP. It has clarified pasture ownership as state and legislated for pasture management as the responsibility of the local self-government bodies, which delegate it to Pasture Users' Unions (PUU) with their elected executive bodies - Pasture Committees. The PUUs and Pasture Committees are key elements in the institutional structure of the Programme and organizational arrangements for its implementation. They are in many ways the core and the target of the Programme – the elements on which everything else hangs. As part of this paradigm, there is an implementation challenge on one hand to successfully connect communally-managed pastures with privately-owned livestock and, on the other, to successfully link private and community vets with public animal health services and the perception that animal health care is a public good that livestock producers are entitled to. In the context of successful livestock development, pastures cannot be regarded as either outputs or benefits but, like good animal health, they should be regarded as prerequisite inputs to strong livestock productivity. This creates some tension between pasture managers and livestock owners. Recognizing and managing this is central to the successful implementation of LMDP.
5. There are several institutions that have been engaged in implementation of AISP and which will continue to be engaged in LMDP implementation, acting as beneficiaries and service providers at the same time. It is essential that their roles are clear and do not overlap, and their activities are well coordinated. The two major institutions that are the key to successful implementation of AISP and other projects are the Agricultural Projects Implementation Unit (APIU) under the Kyrgyz Republic Ministry of Agriculture and Melioration (MoAM), and the Community Development and Investment Agency (ARIS), a large organization with outreach on the ground that focuses particularly on community-based initiatives and has a mandate to alleviate poverty. These institutions will have the prime implementation responsibility for both LMDP-I and LMDP-II.

Component Approach and Methodology

6. The Project has four components: Component 1, Community-based Pasture Management and Vulnerability Reduction; Component 2, Animal Health and Production Services; Component 3, Diversification and Market/Value Chain Initiatives; and Component 4, Project Management.

7. Conceptually, the Community Pasture Management and Vulnerability Reduction Component will focus on two distinct but interlinked approaches: (i) improving sustainability of and access to summer pastures; and (ii) improving the productivity of winter pastures and implementation of winter feeding plans for all the livestock within the 190 project PUUs' jurisdiction in the southern oblasts of Jalalabad, Osh, and Batken. These approaches will incorporate climate change adaptation measures. While individual flock/herd owners will make their own feeding decisions, the PUU/PC's role will be to ensure the pastures are efficiently and sustainably managed. This includes ensuring that more remote pastures are accessible and that adequate supplies of winter feed - either locally produced or purchased from outside - are available to ensure year-round livestock productivity. This requires that the Project adopt an approach that facilitates investments in the PUUs to improve the quality and quantity of forage from all pastures. But, in addition to pasture outputs, winter feed of resilient varieties will in many cases also be produced on private arable land as a cash crop by individuals or groups of individuals to supplement forage available from the pastures, especially for winter feeding. Funding climate change resilient fodder production on both arable land and on winter pastures, as well as coordinating outside purchase of additional fodder needs, are important activities for the PUUs. Therefore, institutionally, the Project will focus its activities under this component on the Pasture Users Unions and Pasture Committees. In addition to the investment in improving pasture productivity and fodder cultivation, a major emphasis in the Project is to build up the capacity of the PCs/PUUs through training, learning by doing and technical assistance. As an integral part of this approach, the Project also will help build up the capacity of the main institutions that must support this type of development: Pasture Department (PD), Kyrgyz National Agrarian University (KNAU), Kyrgyz Livestock and Pasture Research Institute or KLPRI (sometimes referred to as the Kyrgyz Scientific and Research Livestock and Pasture Institute or KSRLPI), and the Republican Association of Pasture Users' Unions.

8. Conceptually, the Animal Health and Production Services Component focuses primarily on the improvement of veterinary services in the communities that come within the 190 Project PUUs. This approach focuses particularly on the community vets and on making them technically and financially viable providers of both animal health and production services to the individual livestock producers, within the framework of the PUUs/PCs and the Animal Health Sub-Committees (AHSCs) that will be formed with support from the Project. However, the Project strategy in support of animal health requires two complementary interventions to ensure that this first initiative focused on the PCs/AHSCs will be effective: support for the national disease control programme, which is supported under the LMDP-I and without which the provision of veterinary services by the community vets will be only partially effective, and support for the education and training of vets to replace vets who are retiring (many community vets are getting old) and to bring in a new cadre of young, dynamic and well-trained vets. This strategy therefore involves two types of approaches focused on: (i) delivery of health and production services at the community level to individual herds/flocks; and (i) delivery of support at the national level through the national disease control programme and the education/training program. The second approach is mostly funded through LMDP-I. Some national level activities would be also covered by the upcoming WB-funded PIMP. The State Inspectorate for Veterinary and Phytosanitary Security or SIVPSS (sometimes referred to as the Veterinary Department (SVD) or State Veterinary Surveillance Department), in coordination with the APIU, will play a central role in the implementation of national disease control strategies by contracting community vets (CVs) to deliver vaccination programmes. CVs will work with the AHSCs to coordinate directly with individual farmers or groups of farmers to provide contract herd/flock health and production services, especially during the winter months. This will entail feed budgeting and management, and monitoring health and body weight. While SIVPSS will provide overall technical support and oversight, management of the collaboration among PVS, AHSCs and livestock producers will be contracted to ARIS.

9. The third component, Diversification and Market/Value Chain Initiatives, is a relatively small one that is intended to complement the two main Project interventions above. This component is aimed at promoting diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. The Project will encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women – can build upon, improve and expand existing value chains and develop additional sources of income, becoming service providers for the wider community. The aim is to provide added focus on the commercial side of livestock rearing with the intention to help raise the incomes of the livestock producer through supporting private sector initiatives for which there is a comparative advantage. The market/value chain analysis carried out during the design indicated clearly that such initiatives should concentrate on the milk value chain. The component will have two major windows, one on dairy production and another on alternative income generation.

10. The underlying strategy for milk value chain activities is based on the principle that the market must drive the process – thus a demand-driven rather than a supply-driven approach has been adopted with the emphasis on developing partnerships between the key market players – both the major milk processors and other market intermediaries – who will make a commitment to work with, invest in and support the development of the Project's milk handling and processing activities. Two, limited-scale initiatives are foreseen: (i) milk collection and cooling centres run by a group of livestock producers on a private sector basis as a business within the area of a PUU; and (ii) women's milk processing groups, based on the successes of similar activities in Naryn. The Project will focus particularly on the establishment of such groups in the less well-accessed areas within the three Project oblasts (with the milk collection and cooling centres set up within accessible range of the milk processing plants).

11. The Income Diversification activities will include support to livelihood diversification as a means of adaptation and support to livestock communities with innovative income-generation activities in cooperation with private and/or public enterprise partners, and mainly with emphasis on women.

12. Component 4, Project Management, is straightforward conceptually. The objective of the APIU is to ensure coordination and synergy between all implementing agencies and actors, and provide them administrative and logistical support with procurement, financial management and consolidated reporting. The team currently implementing AISP and LMDP-I also will act as a management unit for LMDP-II with some additional staff hired to complement those already in post. The APIU has adequate expertise and experience in implementing IFAD/WB-funded operations in the agricultural sector, and will be capable to undertake similar IFAD operations.

Implementation Responsibilities

13. While there will be several institutions engaged in Project implementation, the major implementing parties will be the APIU and ARIS. Each will have its clear areas of responsibility and each will be financially accountable for the implementation of its own activities, with the APIU having overall responsibility for Project oversight and coordination. Memoranda of Understanding (MOUs) will be drawn up between the APIU and ARIS and between the APIU and the other implementing partners for which the APIU has responsibility. They are: Pasture Department (PD), State Inspectorate for Veterinary and Phytosanitary Security (SIVPSS), Kyrgyz Scientific Research Livestock and Pasture Institute (KSRLPI) often called more simply as the Kyrgyz Livestock and Pasture Research Institute (KLPI), the National Federation of Community Seed Funds (NFCSF), Kyrgyz National Agrarian University (KNAU), Kyrgyz Scientific Research Veterinary Institute (KSRVI), Kyrgyz and Scientific Research Veterinary Institute (KSRVI), and the Republican Association of Pasture Users' Unions (RAPUU).

14. APIU. The responsibilities of APIU are the following:

- Overall responsibility for Project implementation, coordination, oversight and reporting to IFAD and the government. That includes liaising closely with ARIS, which will operate a relatively

independent series of activities, but will nevertheless be accountable to APIU as part of the Project implementation team.

- APIUs core responsibilities include: financial management, comprising procurement, disbursement, accounting, auditing and financial reporting; managing the performance of the partner national organizations that are responsible for implementation of specific project activities (SIVPSS, PD, KLPRI, NFCSF, KNAU, KSRVI, and RAPUU); shortlisting, evaluating, contracting and managing the performance of service providers; overall Project monitoring and evaluation (M&E), including baseline and impact surveys, and knowledge management; reporting for all Project activities including assimilating the reports from ARIS and from the other implementation partners; maintaining a results-based system of assessing the performance of the LMDP-II partner organizations employing trigger and benchmarks; all Project-level documentation and reporting; technical, financial and management backstopping and technical assistance in support of the Project implementation partners; and poverty targeting, gender mainstreaming and the pursuit of other social goals and indicators of Project effectiveness and impact.
- APIU will be responsible for all national level activities including the technical and related inputs of the national level institutions to ensure that they are deployed effectively and support the implementation of the range of national level activities and complement and provide the necessary inputs into the Project's community level activities that will be the responsibility of ARIS.
- Regarding the working relationship with ARIS, APIU will facilitate dialogue and coordination with ARIS by organizing regular joint working sessions. These will be well-structured and in-depth sessions most likely every quarter, with more informal working sessions every month, ensuring regular dialogue on all aspects of Project implementation, including but not exclusively those focused on the PCs, PUUs and the communities, so that ARIS is fully informed of the other, non-community level activities that must be harmonized with those initiatives at the community level.
- In terms of the implementation of Project components and sub-components, the APIU would have the following responsibilities, as clearly indicated in the detailed cost tables:
 - Some elements of Sub-Component 1.1 (though a major part of the sub-component would be the responsibility of ARIS), including: Legal and Regulatory Reform (PUU Training, which ARIS would handle); Boundary Demarcation and Pasture Inventory; and Community Seed Funds (through NFCSF)
 - Most of Sub-Component 1.2 through PD, KNAU, and KLPRI (except for support to RAPUU, which ARIS would handle)
 - Most of Sub-Component 2.1, excluding those aspects that will be implemented within the communities and PCs. Thus the APIU would deal with: national level support for establishment of AHSCs; and part of Community Veterinarian (CV) Capacity Building, involving training of trainers, establishing Rayon Veterinary Associations, and Strengthening Veterinary Chamber
 - All of Sub-Component 2.2, Animal Health Education and Capacity Building, primarily through KNAU and to a limited extent through the KSRVI.

15. **ARIS.** The responsibilities of ARIS are the following:

- Overall responsibility for all Project implementation at the community level, focused on PCs and PUUs including the management of all Project grant funds.
- Coordination and accountability for effective performance of the combination of its own ARIS staff, contracted service providers and technical inputs from the government's technical agencies (especially PD and SIVPSS) in the implementation of the community-focused activities for which ARIS is responsible.
- Monitoring and evaluation of its own activities, including monitoring of the related performance indicators, assembly and dissemination of information for knowledge management, and the

related reporting both to its own management and in a synthesized form to APIU to ensure that APIU is fully informed and can provide timely and appropriate guidance to ARIS.

- Financial management of all those activities for which ARIS is responsible, comprising procurement, disbursement, accounting, auditing and financial reporting.
- In terms of the implementation of Project components and sub-components, ARIS would have the following responsibilities, as clearly indicated in the detailed cost tables:
 - The core elements of Sub-Component 1.1 including: the range of activities that comprise Upgrading Community Pasture Management Plans, including all those activities that make up the facilitation and prioritization process involved in developing the climate change adaptive CPMPs inclusive of animal health issues; Community Pasture Assessment and Mapping, through the PD and service providers; the management of PC grants for the financing of investment projects identified in the CPMPs under the activity, Pasture/Livestock Management Plans Investments; and PUU legal training under Legal and Regulatory Reform.
 - Support to the Republican Association of Pasture Users' Unions under Sub-Component 1.2.
 - Those activities under Sub-Component 2.1 that deal with management of grants and strengthening the capacity of community veterinarians (CVs), comprising: the management of grants for AHSCs under the AHSC Mobilization/Facilitation, plus training of CVs under AHSC strengthening, and management of CV grant-financed input packages for the CVs which forms one part of the CV capacity building.
 - All of Component 3 by sub-contracting service provider/s and technical assistance.

16. Pasture Department (PD). The responsibilities of the PD are the following:

- The prime responsibility of the PD would be to provide the overall technical support and inputs for the Project in terms of pasture management and in doing so act as a resource for the APIU in implementing the Project and also to ARIS in implementing the community level activities for which ARIS is responsible, including technical inputs for the preparation of the PUUs' CPMPs.
- In terms of the implementation of Project components and sub-components, the PD would have the following responsibilities, as clearly indicated in the detailed cost tables:
 - The following elements of Sub-Component 1.1, in conjunction with and in support of ARIS: Pasture Boundary Demarcation and Inventory; and technical support for the whole PC facilitation and planning process involved in developing the CPMPs; evaluating and monitoring the CPMPs; also, while not having any direct implementation responsibilities, the PD would be required to liaise with the NFCSF to help ensure that the support provided for the establishment of community seed funds is consistent with the pasture and winter feeding strategy of the PCs involved.
 - Under Sub-Component 1.2, though not responsible for implementation of activities under the sub-component, it would be the recipient of support for Strengthening the Pasture Department, including provision of: Equipment and Goods, Capacity Building, and funding for Technical Assistance (support team); also under this sub-component it would help coordinate support by the APIU to the KLPRI, including assisting in updating its Long-term Research Plan and the selection and implementation of Selected Research Projects; besides it would host the GIS platform required for the development and implementation of the EWS.

17. State Inspectorate for Veterinary and Phytosanitary Security (SIVPSS). The responsibilities of the SIVPSS are the following:

- The prime responsibility of the SIVPSS would be to provide the overall technical support and guidance for the Project in terms of the veterinary and animal health activities captured under the second component. In terms of implementing Project activities, it would be responsible to the APIU and would be accountable for its performance under the Project and accountable for the funding it uses to implement the various programmes. While directly responsible to APIU,

it would also have to work closely with ARIS at the community level, in particular in ensuring that the community vets are able to develop into an effective and financially sustainable service, supporting and working closely with the AHSCs and PCs.

- In terms of the implementation of Project components and sub-components, SVSD would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 2.1, it would facilitate the implementation of the initiatives connected with strengthening Rayon Veterinary Associations and the Veterinary Chamber; it would also assume technical responsibility for carrying out the CBAHW Survey and the Development of AH guidelines and training materials (national level) under the main sub-component activity, Animal Health Sub-Committees.

18. Republican Association of Pasture Users' Unions (RAPUU). An autonomous Association of Pasture Users is the cornerstone of governance for pasture management issues. This includes protecting the interests of PUUs in government agencies, and assisting in the development of rayon PUU associations. The Project will provide the needed assistance to help operationalize the RAPUU, support that was initiated under LMDP-I. It would also have to work closely with ARIS at the community level, in particular in ensuring that the PUUs are able to develop into an effective and financially sustainable institutions. In terms of implementing Project activities, it would be responsible to ARIS and would be accountable for its performance under the Project and accountable for the funding it uses to implement the various programmes. The RAPUU would be engaged in mitigation of disputes between PUUs, and between PUUs and other institutions, such as local self-governance bodies and forestry enterprises. It would provide informational, methodological and technical support to its members, organize various capacity building initiatives aimed at its members, and in general represent its members' interests.

- In terms of the implementation of Project components and sub-components, the RAPUU would have the following responsibilities:
 - Under Sub-Component 2.1, it would be supporting the initiatives connected with establishing Rayon PUU Associations, and it would be the recipient of support under the Strengthening the RAPUU, including provision of a vehicle, office equipment, technical assistance, training and operational expenses.

19. Kyrgyz Livestock and Pasture Research Institute (KLPR). The responsibilities of the KLPR are the following:

- The role and responsibilities of the KLPR under the Project will be relatively modest but nevertheless important as it will work with the APIU, to whom it will report, to help provide technical inputs and develop new approaches to the pasture management activities of the Project. In particular, this would include the updating of a long-term research plan, with a focus on the issues and problems confronting the Project area PCs and PUUs, to help address problems and constraints that arise during Project implementation.
- In terms of the implementation of Project components and sub-components, KLPR would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 1.2, though not responsible for implementation of activities under the sub-component, it would be the recipient of support for strengthening the institute, with financing provided to update a long-term research plan followed by the funding for carrying out a number of research projects.

20. Veterinary Chamber (VC). A vibrant, autonomous and impartial national Veterinary Chamber is the cornerstone of governance for a modern veterinary service to meet international standards and ensure transparency, integrity and quality of service in both the public and private sectors. Veterinary Chamber operates mainly with licensing issues and the advanced training of private veterinary specialists. This includes updating and maintaining an electronic database of private veterinary specialists, protecting the interests of private veterinary specialists in government agencies, and assisting in the development of rayon associations for private veterinarians. The Project will provide the needed assistance to help operationalize the VC, support that was initiated under AISP and continued under LMDP-I. The responsibilities of the VC under LMDP are the following:

- (i) maintain the register of veterinarians; (ii) improve procedures and criteria for registration and issue certificates of registration and registration renewals; (iii) publish, maintain and from time to time upgrade a code of professional conduct; (iv) specify and keep under review standards, and approve programmes of education necessary for registration and continued registration; (v) conduct enquiries into and, where appropriate, impose sanctions in relation to the fitness to practice of a person registered; and (vi) advise the MoAM on any matter that the Chamber considers appropriate or that is requested by the Ministry. It would also have to work closely with ARIS at the community level, in particular in ensuring that the community vets are able to develop into an effective and financially sustainable service, supporting and working closely with the AHSCs and PCs.
- In terms of the implementation of Project components and sub-components, the VC would have the following responsibilities:
 - Under Sub-Component 2.1, it would be supporting the initiatives connected with establishing Rayon Veterinary Associations, and it would be the recipient of support under the Strengthening the Veterinary Chamber, including provision of technical assistance and training.

21. **National Federation of Community Seed Funds (NFCSF).** The responsibilities of the NFCSFs are the following:

- The prime responsibility of the NFCSF would be to support the Project in facilitating improvements in the quality and productivity of the pastures, and of the fodder crops, with a particular focus on increasing the availability of winter feed. It would facilitate the establishment of new community seed funds and provide support to them and to those already working. It will be responsible to the APIU and be fully accountable for its performance and use of funds.
- In terms of the implementation of Project components and sub-components, the NFCSF would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 2.2, it would be responsible for establishing and providing training for up to 90 CSFs over the five years of the Project. Its responsibilities under this activity would include the management, disbursement and accountability for the grants provided to the CSFs according to the operational guidelines.

22. **Kyrgyz National Agrarian University (KNAU).** The responsibilities of the KNAU are the following:

- The prime responsibility of KNAU would be to facilitate the development of a cadre of new vets who will be interested and motivated to work in the PC areas in the three Project oblasts and to facilitate the improvements in the training of pasture management. It will be responsible to the APIU and be fully accountable for its performance and use of funds.
- In terms of the implementation of Project components and sub-components, the KNAU would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 1.2, KNAU would receive funding for updating and delivery of pasture management curriculum, with a particular focus on the potentials and constraints identified by the Project in the three oblasts. It also will organize field visits for students to Project areas to help them become familiar with the issues linked to successful pasture management.
 - All of Sub-Component 2.2, Animal Health Education and Capacity Building, apart from the activity "Development of AH Education and Capacity Building Programme" which the APIU would have direct responsibility and the support provided under strengthening Kyrgyz Scientific Research Veterinary Institute.

23. **Kyrgyz Scientific Research Veterinary Institute (KSRVI).** The responsibilities of the KSRVI are the following:

- The role and responsibilities of the KSRVI will focus on assisting the APIU to develop a programme of research to support animal health and veterinary activities. It will be responsible to the APIU and be fully accountable for its performance and use of funds.
- In terms of the implementation of Project components and sub-components, the KSRVI would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 2.2, Animal Health Education and Capacity Building, it would be responsible for: updating of a long-term research plan, implementation of selected research projects, and international training courses for young professionals of KSRVI.

24. **Hydromet.** The responsibilities of Hydromet are the following:

- The role and responsibilities of Hydromet will focus on assisting the APIU with installation/operationalization of the Early Warning System in cooperation with the PD. It will be supported by the Slavic University by developing hydrologic models to be used by the EWS. It will be responsible to the APIU and be fully accountable for its performance and use of funds.
- In terms of the implementation of Project components and sub-components, Hydromet would have the following responsibilities, as indicated in the detailed cost tables:
 - Under Sub-Component 1.2 would be responsible for development and implementation of Automated Weather Forecasting System and Derived Variables Models with support from the Slavic University.

Project Organization

25. The organizational arrangements for the Programme (both LMDP-I and LMDP-II), as can be seen from the chart below, focus on APIU and ARIS being the two main institutions charged with responsibility for coordinating and implementing the Programme. As can be seen, the APIU would have responsibility for coordinating activities of a number of institutions, each of which has its own area of responsibility for Project implementation (as presented in the previous section). While the APIU would work with the national offices of each of these institutions, a number of them have offices at Oblast and levels below that: (i) the Pasture Department (PD) at oblast level, (ii) the State Inspectorate for Veterinary and Phytosanitary Security (SIVPSS) at oblast and rayon level, and (iii) the National Federation of Community Seed Funds (NFCSF) which has funds operating at the Pasture Committee (PC) level.

26. ARIS has representation at three levels, each of which will be involved in the implementation of the Project: ARIS headquarters, ARIS teams at the oblast level in all Programme oblasts, and ARIS facilitation teams at the PC/PUU level. It also will work with technical support from various service providers and outreach agents.

27. Programme Oversight. There are a number of bodies that already exist that will be used to help provide guidance and support for the Project. They include the Ministry of Agriculture Steering Committee and the ARIS Steering Committee. The Project would use both of these and, as and when necessary, matters concerning LMDP would be placed on the agenda of these two bodies for discussion and advice. In addition to these two bodies, a Programme-specific oversight body has been formed under LMDP-I to provide guidance for Programme management. It is referred to as the Project Coordination and Reference Group. It includes representation from each of the implementing agencies, representation from each of the five oblast administrations, and representation from the PC level and private sector. The body has a balance between government and civil society members. It meets semi-annually and on an ad hoc basis as required.

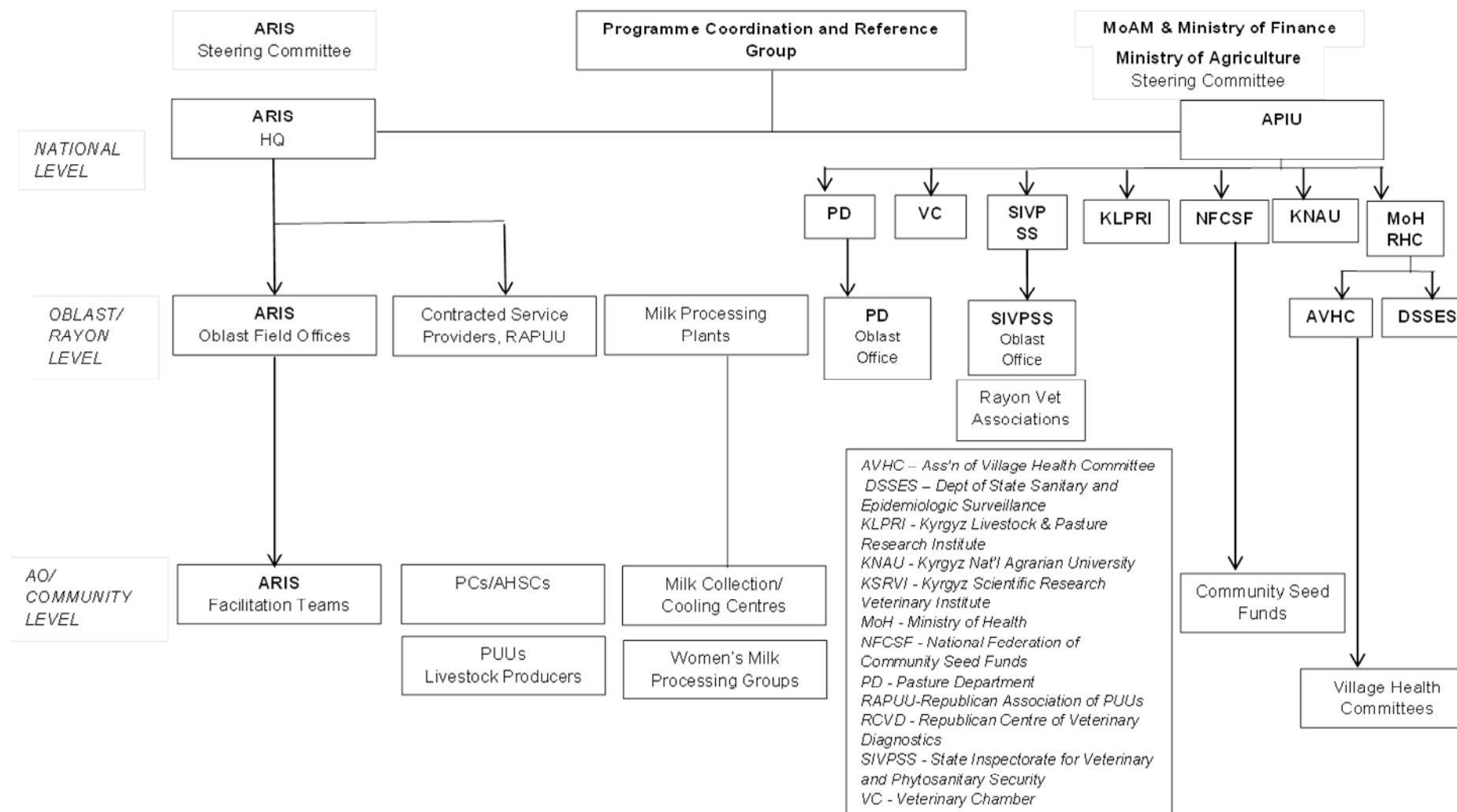
28. The Project Coordination and Reference Group is an advisory, not an executive body. It would review progress of the Programme against targets and its success in meeting the performance indicators. It would also review the progress against the annual work programme. But, most important, it would be a sounding board for discussing issues that arise during implementation and for which it can provide insight and advice to Programme management. It would also provide the

opportunity for Programme management to receive feedback on new ideas or approaches that it is considering to introduce under the Programme. As and when required, the Group could form smaller working groups to tackle specific issues on which the Programme needs advice. These would be temporary bodies with a specific purpose and output which once they have provided the inputs required would be disbanded.

29. Project Start-up Activities. These activities will include: (i) finalization of Terms of Reference for key institutions and their staff including the APIU, ARIS, the other implementing partners and required Technical Assistance; (ii) recruitment, as necessary, of key staff and TA financed by IFAD; (iii) updating the Memoranda of Understanding between the key implementing partners; (iv) conducting a gender sensitive, livelihoods-oriented baseline survey for the entire LMDP led by the APIU M&E Manager supported by national TA, plus making arrangements for subsequent repeater surveys, Participatory Rapid Rural Appraisals (PRRAs) and Participatory Impact Monitoring with particular attention on targeting, gender and socio-economic improvement issues; (v) development of an annual work plan and budget (AWPB) for the Project's first-year activities; (vi) finalization of a procurement plan for the first 18 months of Project implementation; (vii) finalization of a procurement plan for the first 18 months of Project implementation; (viii) an initial deposit in the Project's designated accounts by IFAD of up to US\$2 million; (ix) upgrading of the Programme M&E system; (x) updating of the Project Implementation Manual (PIM); and (xi) holding the Project Start-up Workshop.

30. If possible, all analyses would be carried out in time for their findings to be fed into the content of the Project Start-up Workshop. Among those invited to attend would be staff of the APIU and ARIS and representatives of other key potential stakeholders and participants in the LMDP including among others: women and men smallholder livestock producers; representatives of the project's primary target group, i.e. PUUs; veterinarians; livestock processors and traders; potential services providers; relevant farmers organizations; relevant government representatives; socio-economic profilers (e.g. the State Committee of the Kyrgyz Republic on Statistics); local government and community-based organizations reflecting the project's intended target groups, in particular rural women's organizations; representatives of other projects concerned with rural poverty reduction and development; and representatives of other relevant development assistance donors, e.g. the World Bank, the United Nations Development Program (UNDP), the Asian Development Bank (ADB), German bilateral assistance (GIZ), Swiss Development Corporation (SDC), USAID, etc. Key outputs from the workshop would include guidance on: (i) Project component content and implementing modalities; (ii) refinement/adjustments to the Project Implementation Manual (PIM); (iii) refinement to the Project's targeting criteria and M&E indicators; (iv) agreement with an Annual Work Plan and Budget (AWPB) for LMDP-II's first-year activities; and (v) finalization of an 18-month procurement plan. Outputs related to implementing modalities and associated results and impact would feed into the design of the Programme's Management Information System (MIS) and M&E system.

Programme Organization Structure



Appendix 6: Monitoring, Evaluation and knowledge management

A. Monitoring and Evaluation

1. Monitoring and Evaluation is an integral part of IFAD's operations and is now focusing on results for impacts. LMDP-II will follow the system established under LMDP-I which is in turn based on the IFAD guidelines on the results based M&E system by including all the necessary corporate requirements. The M&E and KM systems will be the main learning systems for the entire LMDP. These are described below for the entire LMDP as well.
2. Baseline Data. The objective of the baseline survey will be to establish benchmarks for time-series comparisons between project beneficiaries and non-beneficiary 'control' populations. The M&E Specialist would thereafter carry out repeater surveys, including PRAs and Project Impact Monitoring Surveys. Survey data would be mutually supplemented as appropriate through regular exchange with Government's State Committee on Statistics, World Bank-supported Living Standards Measurement Surveys (LSMS) as available and the APIU itself.
3. A specialised agency/service provider will be recruited to undertake the baseline survey for both the LMDP-I and LMDP-II project area. The indicators for this survey will be developed by the Gender, M&E and KM team using the key indicators in the Log-Frame and RIMS Framework. The methodology for the administration of the baseline survey, its sample size and indicators to be tracked will be shared and agreed with the APIU, ARIS and IFAD. ARIS will supplement this baseline survey with information on each participating community regarding inter alia overall livestock ownership, pasture resources, and pasture and livestock management practices and a series of relevant community information. From each AO, information will be collected on a random sample of participants for each project component and more detailed baseline information will be collected on them and tracked over time. The number of households to be selected from each AO for this purpose and the type of information that will be collected will be finalised by the technical specialist and agreed with APIU, ARIS and IFAD. However, the organization responsible for carrying out the survey will have to determine the exact size of the sample based on the size and distribution on the project population and the need to have useable but not always statistically significant data. The type of information collected for each household would be related to the baseline situation with reference to those factors of production which LMDP is intending to modify to ensure that the relevant indicators are tracked.
4. Results and Impact Monitoring System (RIMS) of IFAD. The Results and Impact Monitoring System of IFAD reports annually on a number of first and second level results indicators that correspond to the output and outcome indicators. IFAD has produced a standard list of these indicators, but only some of these will apply to an individual project. Prior to mid-term review, the project will report on only the first level results, but after the mid-term report it reports on second level indicators. These second level indicators are used as evidence to support ratings of the effectiveness and likely sustainability of each component. The third level RIMS results are the anchor indicators used for impact assessment.
5. The United Nations agencies (FAO, IFAD and UNICEF) have accepted that the distribution of chronic under-nutrition at the national and sub national levels using stunting (height-for-age) in growth among children under the age of five as the indicator for prevalence of poverty. The prevalence of chronic malnutrition nutrition is considered a valid measure for endemic poverty and a better indicator than estimates of per capita income. While the menu of anchor indicators are focused on a minimal set of indicators, a Plus Survey²⁹ will focus on selecting the outcome level indicators from the project logical framework and other related indicators measuring improved functionality, changes in household behaviour and other economic, environmental and social changes.

²⁹ The Plus Survey is an additional questionnaire where data is collected along with the standard RIMS impact survey questionnaires for assets' and anthropometric surveys without a control group.

6. **M&E System.** The proposed M&E system would provide comprehensive information for effective and efficient management of LMDP and contribute to learning from implementation experience for all stakeholders. The Log-frame provides an initial list of indicators to be used to track progress and assess achievements in terms of outputs and associated outcomes, as well as success in achieving the project's objectives and development goal. The M&E system will monitor targeting closely in each activity to enable the system to compile collectively their performance on targeting. This data will be used in all supervision and other missions of IFAD.

7. **AWPBs** and corresponding Procurement Plans will be the Project's principal planning instruments. Annual Stakeholder Review and Planning Workshops will review the Annual Project Performance Reports for both LMDP-I and LMDP-II and provide input to the projects' AWPBs for the succeeding year, thus closing a circle of participatory, demand-driven planning and implementation. The refined and finalised indicators arising from the LMDP-I Start-up Workshop would shape the Programme's Baseline Survey. Also, the Project has complimentary allocations to LMDP-I to fund: (i) outcome surveys; (ii) mid-term review; (iii) participatory monitoring and evaluation; (iv) impact assessment and (v) upgrading the Management Information System (MIS) established under LMDP-I.

8. **Results Oriented Annual Work Plans and Budgets (RO- AWPBs).** ARIS will compile the AWPBs and send it to APIU for finalisation. Thereafter, APIU will prepare the consolidated AWPB and submit to IFAD along with the procurement plan for review. Based on the observations made by IFAD, APIU will finalise the AWPB and submit to its Management/Authorised Supervisor for approval. A copy of the approved AWPB along with the annual procurement plan will be sent to IFAD for the purpose of monitoring. The project level RO-AWPB needs to explain key issues, objectives, focus of the annual work plan and budget, rationale for setting specific targets, and the planning process in a narrative text. The RIMS indicators are required to be included in the RO-AWPB so that this becomes the basis for preparing the annual RIMS report. The approved RO-AWPB will be translated to an implementation plan indicating start and completion time and corresponding budgets, so that this could be monitored throughout the year. This is to be done at the APIU level, and then they will need to facilitate the ARIS and other implementing agencies to follow this system as well. It may be noted that the RO-AWPB template is a planning tool at the beginning of the year, monitoring tool during implementation and a reporting tool at the end of the year.

9. **Outcome Surveys.** While IFAD has developed a standard methodology for impact measurement, these impact surveys are not providing the type of results' information that can allow Project Management Teams to take timely, corrective action during the course of project implementation. Such impact surveys are indeed primarily intended to document project impact at completion. In an effort to shift the focus from impact documentation at completion to outcome measurement during project implementation, IFAD is now encouraging all its projects to survey annually a small sample of beneficiaries in order to:

- measure more regularly the positive or negative changes/outcomes taking place at the household
- level provide early evidence of project success or failure
- provide timely performance information so that corrective actions may be taken if required
- assess targeting efficiency

10. Outcome monitoring measures the changes coming about as a result of Programme interventions. This would entail annually measuring and assessing whether the Programme is moving towards achieving their objective. The surveys will also collect data for 2nd level RIMS indicators. To allow comparisons to be made the surveys would be gather data from three separate sub-groups and a control group of non-project households. Additional outcome indicators may be obtained by updating village profiles. This survey will be outsourced to a service provider that will be contracted by APIU.

11. **Mid-Term Review.** A Mid-Term Review for both LMDP-I and LMDP-II would be carried out at the end of the second year (third year for LMDP-I). The Review would cover, among other things: (i)

physical and financial progress as measured against Programme AWPBs; (ii) performance and financial management of contracted implementing partners; (iii) an assessment of the efficacy of technical assistance; (iv) the relevance of the project components to livelihoods in the project areas and as a means of attaining projects' objectives (v) the efficacy and efficiency of implementing arrangements (vi) expected impact of the Programme on livelihoods, social aspects, gender and environment (vi) the sustainability and risks associated with the Programme; (vii) recommendations to improve expected outcomes and impact; and (viii) proposals for changes in the components and activities to reflect the findings of the assessment of performance and impact. In addition, it is expected that the Review would look at the experience gained from Programme support on the policy and regulatory framework for pasture management in the country and advice on measures to enhance its impact.

12. **Impact Studies.** During the final year of Project implementation, as part of the preparation of the IFAD-required Project Completion Report/Impact Assessment, the M&E data collected over the Programme implementation period will be used as part of a thorough assessment of Programme achievements, in terms particularly of changes in the livelihoods of beneficiaries that relate to the implemented Programme activities, and the sharing of lessons learned and development experience. These studies will be a function of concurrent Participatory Impact Monitoring and evaluation based on quantitative repeater surveys combined with interviews to capture qualitative aspects. Provision has been made for appropriate international and national TA to assist the APIU, principally the Gender, M&E and KM management team, with both the initial design of the progress reporting and participatory impact assessment and evaluation systems and follow-up M&E.

13. **The Programme completion** process will include stakeholder workshop(s) to give Programme stakeholders the opportunity to: (i) evaluate the performance of LMDP; (ii) to promote accountability; and (iii) to identify factors and responsibilities to increase the likelihood of sustainability, together with key success factors and shortcomings. A third party will be commissioned to undertake a survey at completion to feed into the results of the Programme Completion Report.

14. **Performance monitoring.** Performance monitoring will concentrate on the financial and physical outputs and the outcomes of project activities and be based upon quarterly, semi-annual and annual progress reports. The APIU would submit progress reports to Government (MoAM and MOF) and IFAD.

15. **Participatory Monitoring & Evaluation.** ARIS will make arrangements for participatory monitoring and evaluation of the activities under LMDP in coordination with APIU, Pasture Users Unions (or their PCs), the Pasture Department (PD), Pasture User Groups, Community Vets and participating SMEs. The progress reports of LMDP will contain a section on community and beneficiary feedback on Programme activities. It will be the responsibility of the M&E Manager to coordinate the feedback on the performance of all implementing partners and Programme activities from the communities in periodic sessions with them. In case there is negative feedback on the performance of any implementing partner, this will be conveyed to the implementing partner for remedial action. In case of continued negative feedback, the APIU will consider termination of the contract of the agency. No contract will be renewed without taking into account the feedback from the community. All supervision missions will also obtain community feedback on different Programme activities as an essential feature of the supervision process.

16. **Supervision and External Monitoring.** In addition to the M&E arrangements described above, Programme external monitoring will comprise: IFAD supervision, including operational reviews of LMDP, covering a random sample of Programme activities, be carried out in LMDP-I Years (PYs) 2 and 4 by independent auditors and under Terms of Reference acceptable to IFAD and also risk-based financial management supervisions, initially after every six months for the first two years of LMDP-I implementation and thereafter at appropriate levels based on the Fund's assessment of risk (see Annex 7 for further details); ad hoc thematic/diagnostic studies; yearly audits; and a self-assessment Programme Completion Evaluation conducted by the APIU in cooperation with IFAD.

17. **Reporting and Communication.** Common reporting formats will be used where compilation will be simple and timely reporting and communication is possible. This is important to take timely corrective actions and to learn from implementation experience to further improve Programme management effectiveness and efficiency. Quarterly and annual reports including reports from studies would be produced by LMDP for internal efficiency. For IFAD corporate reporting, half-yearly, annual and RIMS Progress Reports are required to be prepared:

- **Half Yearly and Annual Progress Reports** from information compiled by ARIS at the field level on physical and financial progress, and financial progress (by Grant/Loan category). This will show progress towards development objectives, and also problems that are not adequately addressed, degree of responsiveness of the staff of different support agencies, and usefulness of training, benefits from different works, successes and failures, gender issues and knowledge management. The APIU will prepare the half-yearly progress report by the end of October and the annual progress report by the end of May. Data sources for the annual performance reports will include: Programme baseline survey; quarterly physical and financial progress reports for each component; service providers' Programme-related reports; the M&E Specialist's qualitative interviews and case studies with smallholder livestock producers; and reports by the APIU and ARIS Procurement Specialists and Financial Managers on challenges and Programme facilitation strategies for their respective implementation responsibilities.
- **RIMS Annual Report.** The key RIMS indicators corresponding to the LMDP components are included in the Logical Framework and will be reported annually by the end of December. In the first year of the Programme information on RIMS first level indicators (list of indicators included in RIMS Handbook) associated with outputs would be reported. After the mid-term review the report will include ratings of effectiveness and sustainability of 2nd level indicators, validated from the results of annual outcome surveys.

18. **Human Resources.** The APIU will have overall responsibility for the M&E system. Under LMPDII an additional qualified M&E Specialist will be hired to work under the Gender, M&E and KM Manager recruited for LMDP-I. The Gender, M&E and KM team, comprising of the manager and two specialists (one is already hired under LMDP-I), will assist in overseeing the collection of data, its collation and analysis, and preparation of reports for use by Programme management and other stakeholders. All implementing partners will also be required to identify case studies and beneficiary profiles which highlight the Programme's progress and impact over time. The Manager within APIU will ensure that the Programme maintains a standardised central system to compile overall monitoring and evaluation information and conducts periodic case studies and village profiles to measure changes over time. The team will also oversee gender responsibilities and KM responsibilities. They will ensure that the M&E system and MIS is gender responsive and included of sex disaggregated data as well as the analysis is also gender sensitive and inclusive. The Logical Framework would form the basis for the overall results-based monitoring and evaluation (M&E) system and comprise performance monitoring and impact assessment.

Annual M&E Activities Calendar

	<i>Apr</i>	<i>May</i>	<i>June</i>	<i>July</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>
M&E Activities at the APIU and ARIS level													
Annual Progress Performance Review & Report Submission													
Annual Performance Assessment													
Half yearly Progress Report													
Annual Progress Report													
RIMS Annual Report													
Annual Outcome Surveys													
Quarterly Results Report (QRR)Preparation (Outputs/ 1st Level Results)													

B. Knowledge Management

19. **Knowledge Management Systems** in the Programme. The Programme will nurture a culture of learning and sharing across partner agencies and across local groups. This will require systems and processes to be put into place from the very beginning. Reporting lines and channels of communication need to be established for each level of staff. The TORs of all professional staff will have KM as a cross cutting deliverable. The Gender, M&E and KM Manager along with the M&E Specialists will coordinate all KM activities.

20. **LMDP KM Strategy.** The Gender, M&E and KM Team will develop a KM strategy using the IFAD and Asia Pacific KM strategy as a point of reference. The strategy will look at the three pillars of KM according to IFAD – ‘People, Processes and Technology’. People include who create, share and use knowledge as part of their daily work and help shape a knowledge sharing organisational culture. Processes include methods to acquire, create, organize, share and transfer knowledge to fit different situations and Technology includes the mechanisms to store and provide access to data, information, and knowledge that must be integrated with the way people work, and address their real needs.

21. The strategy will include a needs assessment of the main stakeholders of the Programme. The KM Needs Assessment Matrix used in all IFAD projects outlines the knowledge and the possible ways to capture and disseminate it. The Needs Assessment will be done in collaboration with the other subject matter specialists and management. It will look at each component and sub-component to make a comprehensive plan. The Programme will also develop a plan of action as part of the strategy in order to plan for the entire period of the Programme. The plan should have simple deliverables spread out over the period. The strategy and plan should also include incentives for those who pursue KM as part of their work as KM is very individual oriented. These incentives will build a culture of knowledge sharing among the staff.

22. **Learning Systems.** The Programme learning system comprises of semi-annual and annual review meetings, capturing information on progress, lessons and finding solutions for implementation constraints. Annual Project Performance Reports would feed into Annual Stakeholder Review and Planning Workshops. Feedback from each Annual Stakeholder Review and Planning Workshops will be factored into the LMDP AWPBs for the succeeding year, thus closing a circle of participatory, demand-driven planning and implementation.

- Semi-Annual Review Meetings (SRMs). The semi-annual progress report, which will take account of quarterly progress reports and include reviewing physical and financial progress at the community level ARIS, will be used during the SRMs at ARIS level. Over and above reviewing physical and financial progress for the quarter against annual targets, the Programme will also review implementation constraints, document lessons, emerging best practices and decide on actions to improve implementation.
- Annual Project Review will be carried out towards the end of the fiscal year around the first week of April, to assess performance in the achievement of physical and financial progress against annual targets. In addition, review of progress towards development objectives as reflected in the Outcome Surveys will be done assessing success and failures and reasons thereof and lessons learned.

23. Linking KM to the M&E system³⁰. An important part in M&E work is critical reflection – being able to move beyond collecting, processing and reviewing data for the purpose of Programme efficiency. This means to be able to question and analyse experiences, observations, assumptions and reasons behind results, as well as to reflect on positive, negative and unknown aspects. Having an effective management information system in place is the basis for KM. It should be a common platform where the main databases and documents are stored and large quantity of information organized. It should also enable the users to spot and select the most relevant information and

³⁰ Using M&E to generate evidence based knowledge Workshop report, 2011, Thailand

documents produced since the design as a basis for further analysis and case studies. Actual results are then compared with previously defined objectives, lessons are drawn from successes and failures and best practices and innovation are extracted. The information can be processed into success stories, case studies, thematic technical papers and policy briefs.

24. Studies, Documentation and Knowledge Products. Special studies will be undertaken within the Programme cycle to understand the impact of Programme interventions on the communities especially the small holder livestock producers and the women (as explained under the section on M&E). Learning notes on Programme implementation (good practices and lessons) in all sectors will be developed with ARIS and the relevant government departments. The Programme will publish a bi-annum newsletter based on good practices and human interest stories that will be disseminated to all important stakeholders. For the communities, they will develop contextual specific information materials that are required by the communities on good practices for livelihoods enhancement, climate change adaptation, health and nutrition as per the interventions. It must be taken into consideration that the information materials must be gender sensitive and must promote gender justice messages. Besides this, the Programme will also produce pamphlets, brochures, calendars, CDs, manuals, posters, which are effective ways/ methods of communications, especially at the community level. The work will be systematically carried out from the third year of LMPDI onwards as one of its main publications. Documenting of indigenous knowledge systems on livestock management can be one of the important knowledge products that the Programme can take out.

25. Trainings and Workshops. The Programme will carry out one training per year per level of staff on KM (orientation, documentation, knowledge sharing) and organise thematic workshops to build the capacity of the LMDP staff and enhance knowledge sharing in the Programme. ARIS will ensure processes to enhance the knowledge sharing gains at the community level. ARIS should also evaluate the trainings and build into the trainings an evaluation and follow up mechanism.

Appendix 7: Financial management and disbursement arrangements

A. Accounts, Audit and Flow of Funds

1. **Accounts. Country context and Inherent risk.** The Corruption Perception Index of Kyrgyzstan published by Transparency International has improved from 2.1 in 2011 to 2.4 in 2012, improving the country ranking from 164 (out of 182) in 2011 to 154 (out of 176) in 2012. To date, two Public Expenditure and Financial Accountability (PEFA) assessments have been conducted (2005 and 2009) showing progress in the area of comprehensiveness and transparency. However indicators related to procurement, internal controls for non-salary expenditure, internal audit, quality and timelines of financial statements, and external audit were still considered weak.
2. **Implementation of the Financial Management arrangements.** The financial management arrangements of the project will be implemented by the APIU and the service provider ARIS, which have an established track record in implementing projects by IFAD and other donors. FM arrangements related to audit, accounting, budgeting, disbursement, financial reporting and internal controls have been determined satisfactory and in line with IFAD and World Bank procedures including the submission of unqualified audit reports in a timely manner. Financial management staff in both entities are well trained and experienced in carrying out the required responsibilities.
3. **Budgeting.** This project will receive funding from three sources, excluding counterpart and beneficiary funds – IFAD Loan; IFAD Grant and ASAP Grant. The service providers including ARIS will prepare separate Annual Work Plan and Budgets (AWPB) and submit these to the APIU in a timely manner. APIU will prepare a consolidated annual work plan and budget (AWPB) and submit it to the government and to IFAD for its non-objection. The format of the AWPB will indicate separately the implementing entity, the sources of funds and funding requirements on a quarterly basis.
4. **Taxation.** As per IFAD policy, none of the proceeds of its financing can be utilized for the payment of Taxes during the course of project implementation.
5. **Flow of funds.** A diagram of arrangements for the flow of funds under the project is
6. provided in at the end of this Appendix.
7. **IFAD loan and grant accounts.** As per standard practise, as of the date of entry into force of the Financing Agreement between IFAD and the Kyrgyz republic, IFAD will open three Accounts (IFAD loan account, IFAD grant account and ASAP grant account), which will be credited by the amounts defined in the financing agreement.
8. **Designated and project accounts.** Responsibility for the designated project accounts would rest with the APIU and ARIS. The Ministry of Finance would open and maintain four Designated Accounts in US\$: Two accounts for APIU (one for the IFAD loan and IFAD grant and another for the ASAP financing) and two accounts for ARIS (one for the IFAD loan and IFAD grant and another for the ASAP financing) respectively in a commercial bank acceptable to IFAD. The Directors of APIU and ARIS would be authorised to operate these accounts. The Designated Accounts would receive IFAD Loan/Grant funds in advance to be utilised to finance the IFAD share of project expenditures. Local currency project accounts and counterpart funding accounts would also be opened by APIU and by ARIS to deal with KGS payments.
9. **Authorized Allocation.** Once the Designated Accounts have been opened, and upon the Borrower's request, IFAD shall make available the Authorised Allocation equal to the approximate requirements for average six months implementation, from the Loan/Grants Accounts on behalf of the Borrower and deposit such amount into the Designated Accounts. The Fund shall replenish the Designated Accounts from time to time upon request, in accordance with Section 4.08 (Designated Account) of the General Conditions.

10. **Withdrawals from the Loan and Grant accounts.** Between the date of entry into force of the Financing Agreement and the Financing Closing Date, the implementing entities APIU and ARIS may request withdrawals from the Loan Account and/or Grant Accounts of amounts paid or to be paid for Eligible Expenditures.

11. **Disbursement procedures.** Four standard disbursement procedures may be used for withdrawal of financing:

- Advance withdrawal
- Direct payment
- Special commitment
- Reimbursement

12. **Conditions for first withdrawal.** As per standard IFAD practises, the following conditions related to financial management are met before the first withdrawal can be realized:

- IFAD has received from the Minister of Finance, – a letter designating the name(s) of official(s) authorized to sign withdrawal applications, which includes their authenticated specimen signature(s).
- IFAD has received documentation evidencing the opening of i) the bank accounts designated to receive grant resources in advance and ii) the project accounts in local currency, with advice of the persons/titles authorized to operate these accounts.
- A Draft Project Implementation Manual has been approved by IFAD;
- The IFAD no-objection on the first Annual Work plan and Budget (AWPB) and procurement plan for the first 18 months of the project has been obtained.

13. **Minimum Withdrawal amounts.** In order to minimise transaction costs, the minimum withdrawal amounts are set as follows:

- Withdrawal Applications requesting a replenishments of the Designated Account should at least cover a minimum amount of twenty per cent (20%) of the initial advance.
- Direct Payment method should only be used for payments of USD 100 000 and above while expenditures below USD 100 000 should be financed from the Designated Account if possible and claimed through the replenishment of the Designated Account.

14. **Statement of Expenditure (SOE).** In line with the established practise of the on-going IFAD projects, it is foreseen that Expenditures under contracts costing less than USD 100 000 or equivalent, under all categories will be applicable under SOE. As an exception to the above all expenditures under contracts for services of individual consultants costing less than USD 25 000 will be applicable under SOE. As per IFAD procedures, the SOE thresholds above may be amended by the Fund in consultation with the Recipient during the course of project implementation.

15. **Accounting.** The fiscal year for Kyrgyz Republic is January 1-December 31. The Borrower, through the APIU and ARIS, shall maintain separate accounts and records in accordance with IPSAS cash basis and thereafter prepare the financial statements of the operations, resources and expenditures related to the project.

16. **Financial reporting.** The financial reporting of the project, will follow the established practise of the on-going IFAD projects. In this regard, the service providers including ARIS will provide APIU with financial reports in an agreed format and in a timely manner. APIU will provide IFAD with consolidated financial reports within agreed timeframes as follows:

- Semi-annual or quarterly interim financial reports (IFRs) consisting of the following: Sources and Uses of Funds, Summary of Expenditures by Loan Categories and by Financiers, Financial performance by Financier and by Component, Statement Of Expenditures /Disbursements - Withdrawal Application Statement, List of payments against contracts, Special/Designated Account Reconciliation Statement, Cash flow forecast and Progress

report on Audit recommendations. The IFRS are to be submitted to IFAD within 45 days following the end of each quarter.

- Annual Financial Statements within four months after the end of the fiscal year, prepared in compliance with International Accounting Standards (IPSAS cash) and IFAD requirements. These Financial Statements will comprise of: i) Statement of project management responsibilities including a Management Assertion that project funds have been expended for the intended purposes as specified in the relevant financing agreements, ii) Statement of cash receipts and payments (by category and by financier), iii) Statement of cash receipts and payments (by component), iv) Statement of comparative budget and actual amount, v) Statement of Designated Account movements, vi) Statement of Designated Account Reconciliations, vii) SOE-Withdrawal Application Statement and viii) Notes to the Financial Statements.
- Annual consolidated audit report and management letter within six months after the end of the borrower's fiscal year.

17. **Audit arrangements.** The project will be audited annually by independent auditors in compliance with International Standards on Auditing (ISA). As soon as practicable, but no later than 120 days after entry into force of the Financing Agreement, the borrower through the APIU and ARIS shall appoint independent auditors acceptable to IFAD, under terms of reference cleared by IFAD and selected in accordance with the procedures and criteria set forth in the IFAD Guidelines on Project Audits as may be amended from time to time. The costs associated with the auditors will be financed from the proceeds of the IFAD financing.

18. The Recipient, through the APIU and ARIS, shall appoint independent auditors acceptable to IFAD, under the terms of reference cleared by IFAD. The costs associated with the auditors would be financed from the proceeds of the IFAD Grant. The contracts for the audits of the APIU and ARIS would be awarded during the first year of LMDPI implementation and thereafter, extended from year to year with the same independent auditor, subject to satisfactory performance and IFAD clearance. The auditors would give a separate opinion on the accuracy of the project financial statement, operation of the designated accounts and on the certified Statements of Expenditure (SOE) including adequacy of supporting documentation. The Auditors will also provide a 'Management Letter' addressing the adequacy of the accounting and internal control systems. The Recipient, through the APIU and ARIS, would submit the above-mentioned certified items to IFAD not later than six months after the end of the fiscal year to which they relate.

19. Procurement method to be applied for the selection of auditors. The contracts for the audits of the APIU and ARIS will be awarded during the first year of project implementation and thereafter, extended from year to year with the same independent auditor, subject to satisfactory performance and IFAD clearance. It is recommended that the Quality and Cost Based Selection method (QCBS) with a ratio of 70:30 should be followed. Additionally, the content of the bidding documentation should include well defined criteria on minimum quality of auditors, including number, qualification and experience of staff, demonstrated knowledge of ISA, experience in auditing externally funded projects. The Length of appointment should not exceed four years with annual confirmation based on the auditors performance.

20. **Project risk.** Given the satisfactory performance of the APIU and the service provider ARIS in implementing IFAD project (AIS), and the positive results of IFAD's own assessment, the project risk is considered to be low. The risk rating will be reviewed during implementation based on the performance of the implementing entities as per IFAD standard practise.

21. **Anticorruption and Good Governance Framework.** The Project should note IFAD's Anti-corruption policy where zero-tolerance applies where it has determined, through an investigation performed by IFAD, the borrower or another competent entity, that fraudulent, corrupt, collusive or coercive actions have occurred in projects financed through its loans and grants, and it shall enforce a range of sanctions in accordance with the provisions of applicable IFAD rules and regulations and legal instruments. 'Zero tolerance' means that IFAD will pursue all allegations falling under the scope

of this policy and that appropriate sanctions will be applied where the allegations are substantiated. This policy applies to IFAD-funded activities whether supervised directly by IFAD or by a cooperating institution. IFAD will continue to improve its internal controls, including controls inherent in or pertaining to its project activities, so as to ensure that it is effective in preventing, detecting and investigating fraudulent, corrupt, collusive and coercive practices. IFAD shall take all possible actions to protect from reprisals individuals who help reveal corrupt practices in its project or grant activities and individuals or entities subject to unfair or malicious allegations.

22. Given IFAD's zero tolerance described in the above paragraph, it is of utmost importance that the project management and project staff are familiar with IFAD's as well as the national anticorruption policy and whistle blowing procedures. The IFAD anticorruption policy is available on the IFAD website at www.ifad.org/governance/anticorruption/index.htm). The IFAD website also provides instructions on how to report any alleged wrongdoing to the Office of Audit and Oversight (<http://www.ifad.org/governance/anticorruption/how.htm>).

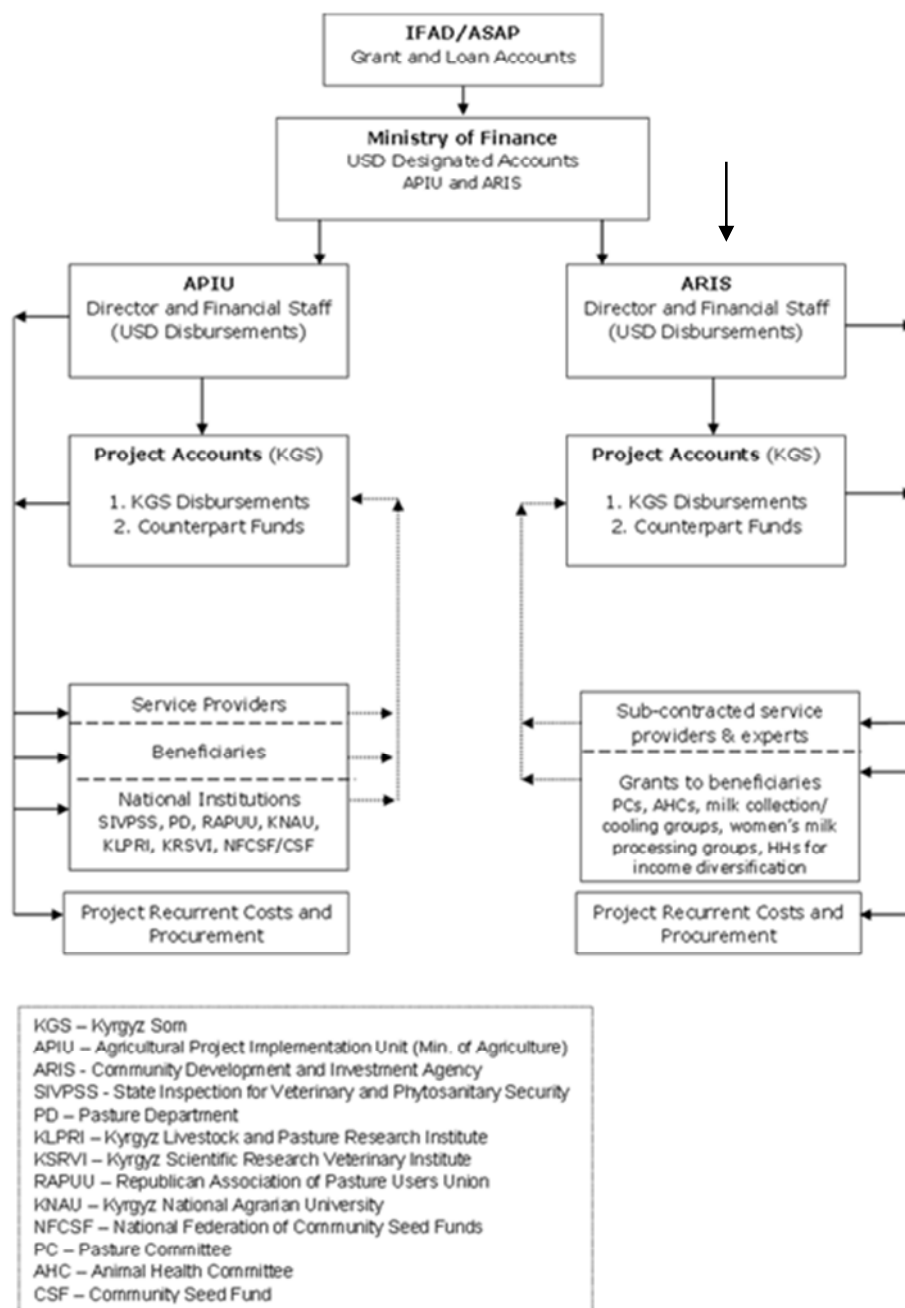
B. Disbursement Arrangements

23. **Disbursement Accounts and Rules.** The disbursement accounts and the financing rules (total allocation net of taxes) adopted for each of the disbursement accounts are summarised in the table below.

Table: Disbursement Accounts and Financing Rules

Description	Financing Rules (total allocation net of taxes)
1. Equipment, Goods and Vehicles	IFAD Loan (100%), except for EWS: ASAP Grant (100%)
2. Training and Workshops	IFAD/ASAP Grant (100%)
3. Technical Assistance and Studies	IFAD/ASAP Grant (100%), except for Republican Pasture Users' Association costs: IFAD Grant (100% in PY1-2, 75% in PY3, 50% in PY4 and 0% in PY5) and PUA (0% in PY1-2, 25% in PY3, 50% in PY4 and 100% in PY5)
4. Pasture/Livestock Improvement Grants	IFAD Loan/ASAP Grant (75%); Beneficiaries (25%)
5. Value Chain and Income Diversification Grants	IFAD/ASAP Grant (60-80%); Beneficiaries (20-40%)
6. Other Grants	IFAD Grant (100%), except for grants for Community Vets, which apply the following rule: IFAD (50%) and Community Vets (50%)
7. Operating Expenses	IFAD Loan (100%), except for EWS O&M costs: ASAP Grant (100% in PY1-2, 75% in PY3, 50% in PY4 and 0% in PY5) and Govt. budget (0% in PY1-2, 25% in PY3, 50% in PY4 and 100% in PY5)

Flow of Funds



Appendix 8: Procurement

1. Country Procurement System. Currently various financial and other donor organisations including the World Bank use their systems for procurement of goods and services.
2. Institutional Assessment of the APIU and ARIS. The joint WB/IFAD Mid-term Review Mission of AISP assessed that the APIU and ARIS have adequate procurement capacity in terms of qualified staff, who has been trained internationally, and the established procedures are in place to undertake procurement of goods and services on a competitive basis.
3. Procurement under IFAD Financing. The country's procurement system is assessed as non-consistent with the IFAD Procurement Guidelines adopted by the Executive Board of IFAD in September 2010. Procurement of goods and services financed by the IFAD Loan/Grant and ASAP Grant will therefore be to IFAD requirements, in accordance with relevant provisions of Section III and the Annex of IFAD's Project Procurement Guidelines (2010) and IFAD's Procurement Handbook (2010) and shall be carried out by the APIU and ARIS in line with the modalities established under LMDP-I. The Directors of APIU and ARIS shall be delegated the authority to initiate procurement and to sign contracts.
4. Recommended procurement methods to be further refined at a start-up of the Project and thresholds for the procurement of goods and non-consulting services are described below:
 - Contracts estimated to cost more than US\$ 100 000 equivalent will be awarded on the basis of National Competitive Bidding (NCB) or International Competitive Bidding (ICB).
 - Contracts estimated to cost US\$ 100 000 equivalent or less will be awarded on the basis of National Shopping (NS) or International Shopping (IS) procedures.
 - As an exception to the above, contracts estimated to cost US\$ 50 000 equivalent or less may be awarded on the basis of Direct Contracting (DC) procedures, as it may be determined in the context of IFAD's review and no objection to procurement plans.
5. As with goods, procurement of services will follow the methods described in the IFAD's Project Procurement Guidelines (2010) and IFAD's Procurement Handbook (2010). Indicative procurement methods for the procurement of consulting services are described below³¹:
 - Contracts estimated to cost US\$ 200 000 equivalent or more shall be awarded on the basis of expressions of interest advertised internationally following Quality and Cost Based Selection (QCBS) as a default method or Quality Based Selection (QBS) for complex or highly specialised assignments or those which invite innovations where the best expertise available is required without consideration of price.
 - Contracts estimated to cost less than US\$ 200 000 equivalent will be awarded on the basis of expressions of interests advertised nationally and following the following selection methods: Quality and Cost Based Selection (QCBS) as a default method; Quality Based Selection (QBS) for complex or highly specialised assignments or those which invite innovations where the best expertise available is required without consideration of price. Selection of SBDU Associates will be carried out following Fixed Budget Selection (FBS) procedures and on the basis of expressions of interests advertised nationally.
 - As an exception to the above, contracts estimated to cost less than US\$ 200 000 equivalent may be awarded on the basis of short lists prepared by the APIU/ARIS and comprising three to six firms/individual consultants and following the following selection methods: Quality and Cost Based Selection (QCBS); Consultants Qualification (CQ), Quality Based Selection (QBS) for complex or highly specialised assignments or those which invite innovations where the best expertise available is required without consideration of price, and; Least Cost Selection (LCS) for small value services of a routine nature.

³¹ Actual methods to be applied will be set forth in the procurement plans.

- As an exception to the above, contracts estimated to cost less than US\$ 50 000 equivalent may be awarded on the basis of Sole Source Selection (SSS).

6. For the purposes of Section III.H of IFAD's Project Procurement Guidelines, the following shall be subject to prior review by the Fund:

- Award of any contract for goods and equipment to cost US\$ 50 000 or equivalent or more;
- Award of any contract for consulting services estimated to cost US\$ 25 000 or equivalent or more;
- Award of any contract through direct contracting or Sole Source Selection.

7. In addition to the above, procurement will be carried in accordance with duly approved Annual Work Plan and Budgets, including a procurement plan covering the initial eighteen month period of Project implementation (a draft 18-month procurement plan is found below), thereafter updated to cover succeeding twelve month periods. Each procurement plan shall include the proposed contracts, methods of procurement and related IFAD review procedures. IFAD's review of and no objection to procurement plans is compulsory under all financing agreements directly supervised by IFAD. To the extent possible, procurement of goods and consulting services will be bulked together.

LMDPII 18 month Procurement Plan (additional allocations to LMDP)

Original: Final design, August 2013		Abbreviations:											
Revised:		GB -Government Budget						NCB - National Competitive Bidding					
Period: July 2014- December 2015 (18 months)		BEN- Beneficiaries						IC- Consultant Services: Individual Consultants					
		ASAP-Adaptation for Smallholder Agriculture Programme						CQ - Consultant Services: Consultant Qualification					
		CCA-Climate Change Adaptation						QCBS - Consultant Services: Quality and Cost Based Selection					
		PUA - Pasture Users Association						SOE - Statement of Expenditures					
		ITA - International TA						CPP - Community Participation in Procurement					
		NTA - National TA						DC - Direct Contracting					
		CPMP - Community Pasture Management Plan						Shopping - National/Local Shopping					
		TOT - Training of Trainers						N/A - Not Applicable					
		PIM- Project Implementation Manual											
Bid Ref.	Description	Financier	Main Implemen-ting Agency	IFAD Loan/Grant Category	Proposed number of packages	Total allocated amount, USD	Allocated amount for 18 months, USD	Procurement selection method	Prior review	Start date	Bid Opening Date	End date	Additional remark
Component A-Community-based Pasture Management and Vulnerability Reduction													
A.1 Community Risk-mitigation Pasture Management and Investments													
A1	Legislative reforms	IFAD Grant	APIU	TA&Training	multi	10,400	10,400	IC/CQ	Yes	Apr-15		Dec-15	Morelikely already selected under LMDP
A2	Updating legal guidelines and training materials	IFAD Grant	APIU	TA&Training	1	5,000	5,000	IC/CQ	Yes	Sep-14		Dec-15	Morelikely already selected under LMDP
A3	Legal TOT	IFAD Grant	APIU	TA&Training	1	31,300	15,000	SOE	No	Nov-14	N/A	Dec-16	Trainers selected in coordination with ARIS
A4	PUU legal training	IFAD Grant	ARIS	TA&Training	N/A	249,000	160,000	SOE	No	Jan-15	N/A	Dec-16	Within ARIS agreement
A5	Sectoral CCA strategy for pastures and livestock	ASAP Grant	APIU	TA&Training	1	9,000	9,000	IC/CQ	Yes	Sep-14	Oct-15	Dec-14	
A6	Support to the Third National Communication	ASAP Grant	APIU	TA&Training	1	9,000	9,000	IC/CQ	Yes	Sep-14	Oct-15	Dec-14	
A7	National workshop for CCA policy dialogue	ASAP Grant	APIU	TA&Training	1	10,000	10,000	SOE	No	Sep-14		Dec-14	
A8	Digitization of registered boundaries	IFAD Grant	APIU	TA&Training	1	10,000	10,000	IC	No	Sep-14		Dec-14	Morelikely already selected under LMDP
A9	Pasture Inventory Data Base	IFAD Grant	APIU	TA&Training	1	19,500	19,500	IC	No	Oct-14		Jun-15	Morelikely already selected under LMDP
A10	ITA for upgrading PMPs	IFAD Grant	ARIS	TA&Training	multi	93,000	61,000	IC	Yes	Sep-14		Dec-16	Within ARIS agreement
A11	NTA for upgrading PMPs	IFAD Grant	ARIS	TA&Training	multi	44,000	22,000	IC	No	Sep-14		Dec-17	Within ARIS agreement
A12	Updating governance guidelines and training materials (CCA)	IFAD Grant	ARIS	TA&Training	1	5,000	5,000	IC/CQ	Yes	Oct-14		Dec-14	Within ARIS agreement
A13	Governance TOT	IFAD Grant	ARIS	TA&Training	1	29,000	14,000	IC/CQ	No	Nov-14		Dec-16	Within ARIS agreement
A14	PUU governance training	IFAD Grant	ARIS	TA&Training	N/A	71,000	47,000	SOE	No	Dec-14		Dec-16	Within ARIS agreement
A15	Updating CPMP guidelines and training materials (CCA)	IFAD Grant	ARIS	TA&Training	1	5,000	5,000	IC/CQ	No	Oct-14		Dec-14	Within ARIS agreement
A16	CPMP TOT	IFAD Grant	ARIS	TA&Training	1	31,000	15,000	IC/CQ	No	Dec-14		Dec-16	Within ARIS agreement
A17	PUU CPMP training	IFAD Grant	ARIS	TA&Training	N/A	95,400	56,000	SOE	No	Mar-15		Dec-16	Within ARIS agreement
A18	Pasture Inventory Equipment and Materials	IFAD Loan	ARIS	Equip&Goods	multi	136,400	136,400	Shopping	Yes	Mar-15	Apr-15	Jun-15	Within ARIS agreement
A19	Pastue GIS Work and Community-based Mapping	IFAD Grant	ARIS	TA&Training	multi	969,000	969,000	IC/CQ	Yes	Mar-15		Dec-15	Within ARIS agreement
A20	Training for community based fin/proc/project management	IFAD Grant	ARIS	TA&Training	N/A	16,000	12,000	SOE	No	Jul-15		Dec-16	Within ARIS agreement
A21	Local study tour	IFAD Grant	ARIS	TA&Training	N/A	3,000	1,300	SOE	No	Dec-14		Dec-17	Within ARIS agreement
A22	International study tour	IFAD Grant	ARIS	TA&Training	N/A	42,000	20,000	SOE	Yes	Sep-14		Dec-17	Within ARIS agreement

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A23	ARIS facilitation	IFAD Grant	ARIS	TA&Training	N/A	3,500,000	1,650,000	DC	Yes	Jul-14		Dec-18	Within ARIS agreement, result-based MoU
A24	CPMP investment projects	IFAD Loan/ASAP Grant/Ben	ARIS	Grants	N/A	25,024,000	3,500,000	Shopping/CPP	No	Jul-15		Jun-18	Within ARIS agreement
A25	CSF training	IFAD Grant	APIU	TA&Training	multi	28,000	14,000	SOE	No	Jan-15		Dec-16	
A26	CSF monitoring	IFAD Grant	APIU	TA&Training	multi	47,000	23,000	IC	No	Jan-15		Dec-16	
A27	CSF grants	IFAD Grant	APIU	Grants	N/A	810,000	405,000	Shopping	Yes	Jan-15	Feb-15	Dec-16	
Subtotal A.1						31,302,000	7,203,600						
A.2 Pasture Institutional Strengthening													
A28	Public Awareness on Pasture Management	IFAD Grant	APIU	TA&Training	1	22,000	5,000	SOE	No	Jun-15		Jun-18	for PD
A29	International Study Tours	IFAD Grant	APIU	TA&Training	2	77,000	36,000	SOE	Yes	Jun-15		Dec-16	for PD and public staff
A30	NTA-Pasture Management Specialist	IFAD Grant	APIU	TA&Training	1	11,000		IC	No	Jan-18		Dec-18	for PD
A31	NTA-Pasture Monitoring Specialist	IFAD Grant	APIU	TA&Training	1	11,000		IC	No	Jan-18		Dec-18	for PD
A32	NTA-Pasture Demarcation Specialist	IFAD Grant	APIU	TA&Training	1	11,000		IC	No	Jan-18		Dec-18	for PD
A33	NTA-Environmental Specialist	IFAD Grant	APIU	TA&Training	1	11,000		IC	No	Jan-18		Dec-18	for PD
A34	Interns	IFAD Grant	APIU	TA&Training	8	77,000	24,000	SOE/PIM	No	Jul-14		Dec-18	for PD
A35	CPMP assessment and monitoring	IFAD Grant	APIU	TA&Training		838,000	230,000	IC/CQ	Yes	Jul-14		Dec-18	for PD
A36	ITA - Capacity Building of PU associations	IFAD Grant	APIU	TA&Training	1	62,000	30,000	IC	Yes	Jul-14	Aug-14	May-16	
A37	National Convention for PU associations	IFAD Grant	APIU	TA&Training		16,000	5,000	SOE	No	Sep-14		Jun-18	
A38	PUA Journal	IFAD Loan	APIU	Equip&Goods	1	27,000	10,000	Shopping	No	Sep-14		Jun-18	
A39	4 WD for PUA	IFAD Loan	APIU	Equip&Goods	1	35,000	35,000	Shopping	No	Sep-14		Dec-14	
A40	Equipment for PUA	IFAD Loan	APIU	Equip&Goods	1	30,000	30,000	Shopping	No	Sep-14		Dec-14	
A41	Staff and Office O&M for PUA	IFAD Grant/PUA	APIU	TA&Training		500,000	100,000	DC	No	Jul-14		Dec-18	
A42	TA and Training for PUA	IFAD Grant	APIU	TA&Training	multi	31,000	20,000	IC	No	Jul-14		Dec-16	
A43	Study tours fo PUA	IFAD Grant	APIU	TA&Training	2	64,000	31,000	SOE	Yes	Sep-15		Jun-17	
A44	Equipment and Consumables for Agrarian Deps	IFAD Loan	APIU	Equip&Goods	1	86,000	86,000	Shopping	No	Sep-14		Dec-14	
A45	Updating Pasture Management Curriculum (mainly CCA)	IFAD Grant	APIU	TA&Training	1	10,000	10,000	IC	Yes	Jan-15	Feb-15	May-15	for KAU
A46	Delivery of Pasture Management Curriculum (TOT)	IFAD Grant	APIU	TA&Training	1	16,000	5,000	IC/CQ	Yes	May-15	Jun-15	Dec-16	for KAU
A47	Field Visits (for students)	IFAD Grant	APIU	TA&Training	N/A	11,000	4,000	SOE	No	Jul-15		Jun-18	for KAU
A48	ITA-Updating Long-term Research Plan	IFAD Grant	APIU	TA&Training	1	20,000	20,000	IC	Yes	Jun-14	Jul-14	Sep-14	for LPRI
A49	Implementation of Selected Research Projects	IFAD Grant	APIU	Grants	multi	40,000	10,000	Shopping/CPP	No	Sep-14	N/A	Jun-18	for LPRI
A50	Development and implementation of AWFS	ASAP Grant	APIU	Equip&Goods	1	284,000	284,000	NCB	Yes	Sep-14		Dec-14	
A51	Development and implementation of Derived Variables Models	ASAP Grant	APIU	Equip&Goods	1	177,000	177,000	NCB	Yes	Sep-14		Dec-14	
A52	Development and implementation of GIS Platform	ASAP Grant	APIU	Equip&Goods	1	223,000	223,000	NCB	Yes	Sep-14		Dec-14	
A53	EWS capacity enhancement	ASAP Grant	APIU	TA&Training	1	41,000	41,000	IC/CQ	Yes	Sep-14		Dec-14	
A54	PD Support Team operational costs	IFAD Loan	APIU	Recurrent		148,000	40,000	Shopping	No	Jul-14		Dec-18	for PD
A55	EWS support	ASAP Grant	APIU	Recurrent		168,000	45,000	Shopping	No	Jul-14		Dec-18	
Subtotal A.2						3,047,000	1,501,000						
Total Component A						34,349,000	8,704,600						

Component B - Livestock Health and Production Services													
B.1 Strengthening Veterinary and Community Animal Health Services													
B1	CBAHW survey	IFAD Grant	APIU	TA&Training	1	11,000		CQ	Yes	Aug-17	Sep-17	Dec-17	
B2	AHSC grants	IFAD Grant	ARIS	Grants		190,000	190,000	CPP	No	Jul-14		Dec-15	
B3	AHSC training	IFAD Grant	ARIS	TA&Training	multi	196,000	120,000	IC/CQ	Yes	Jul-14	Aug-14	Dec-17	
B4	Community Vets (CV) TOT	IFAD Grant	APIU	TA&Training	1	30,000	30,000	IC/CQ	Yes	Dec-14	Jan-15	Apr-15	Trainers selected in coordination with ARIS
B5	Technical training of CVs	IFAD Grant	ARIS	TA&Training	1 or 2	204,000	162,000	IC/CQ	Yes	Jan-15	Feb-15	May-16	Within ARIS agreement
B6	Business training of CVs	IFAD Grant	ARIS	TA&Training	1 or 2	31,000	31,000	IC/CQ	Yes	Feb-15	Mar-15	Jun-15	Within ARIS agreement
B7	CVs grants	IFAD Grant/Ben	ARIS	Grants	multi	1,140,000	700,000	CPP	Yes	Apr-15	May-15	May-16	Within ARIS agreement
B8	National Convention	IFAD Grant	APIU	TA&Training		5,500		SOE	No	Jan-18		Dec-18	For Vet Associations
B9	LHP/CV Journal	IFAD Loan	APIU	Equip&Goods		5,500		Shopping	No	Jan-18		Dec-18	For Vet Associations
B10	Vet Chamber TA and Training	IFAD Grant	APIU	TA&Training	multi	22,000		Shopping	No	Jan-17		Dec-18	For Vet Chamber
B11	Vet Chamber study tours	IFAD Grant	APIU	TA&Training		55,000		DC	Yes	Jan-17		Dec-18	For Vet Chamber
Subtotal B.1						1,890,000	1,233,000						
B.2 Animal Health Education and Capacity Building													
B12	ITA-Updating Needs Assessment and Programme Development	IFAD Grant	APIU	TA&Training	1	20,000	20,800	IC	Yes	Jan-15	Feb-15	Apr-15	for KAU
B13	Vet education -Curriculum Development	IFAD Grant	APIU	TA&Training	1	41,000	41,000	IC	Yes	Mar-15	Apr-15	Jul-15	for KAU
B14	Vet education -TOT	IFAD Grant	APIU	TA&Training	1	41,000	20,000	IC	Yes	Mar-15	Apr-15	Jul-16	for KAU
B15	Vet education-Strengthening Teaching Laboratories	IFAD Loan	APIU	Equip&Goods	multi	202,500	202,500	NCB/Shopping	Yes	Apr-15	Jun-15	Sep-15	for KAU
B16	Scholarships	IFAD Grant	APIU	Grants	120	300,000	100,000	SOE/PIM	No	Jan-15		Dec-18	for KAU
B17	Practical studies	IFAD Grant	APIU	Grants	150	150,000	60,000	SOE/PIM	No	Jan-15		Dec-18	for KAU
B18	Internships	IFAD Grant	APIU	Grants	100	200,000	80,000	SOE/PIM	No	Jan-15		Dec-18	for KAU
B19	ITA-Upgrading Professional Development Programme	IFAD Grant	APIU	TA&Training	1	20,000	20,000	IC	Yes	Jan-15		Jul-15	for KAU
B20	Access to E-learning	IFAD Loan	APIU	Equip&Goods	multi	16,000		Shopping	No	Jan-16		Dec-18	for KAU
B21	International Training Courses	IFAD Grant	APIU	TA&Training	3	65,500		SOE	Yes	Jan-16		Dec-18	for KAU
B22	Communication and Public Awareness	IFAD Grant	APIU	TA&Training		11,000	4,000	SOE	No	Jan-15		Dec-18	for KAU
B23	ITA-Updating Long-term Research Plan	IFAD Grant	APIU	TA&Training	1	20,000	20,000	IC	Yes	Jan-15		May-15	for KSRVI
B24	Implementation of Selected Research Projects	IFAD Grant	APIU	Grants	multi	40,000	10,000	Shopping	Yes	Jan-15		Dec-18	for KSRVI
B25	International Training Courses	IFAD Grant	APIU	TA&Training	3	32,000	10,000	SOE	Yes	Jan-16		Dec-18	for KSRVI
Subtotal B.2						1,159,000	588,300						
Total Component B						3,049,000	1,821,300						
Component C- Market/Value Chain Initiatives													
C1	ITA-Business/Marketing Specialist	IFAD Grant	ARIS	TA&Training	1	20,000	20,000	IC	Yes	Jan-15	Feb-15	Apr-15	Within ARIS agreement
C2	Specialized Business Provider Services	IFAD Grant	ARIS	TA&Training	1	265,000	100,000	CQ	Yes	Jun-15	Aug-15	Dec-18	Within ARIS agreement
C3	Milk Value Chain investments	IFAD Grant/Ben	ARIS	Grants	multi	665,000	200,000	CPP	Yes	Oct-15		Dec-18	Within ARIS agreement
C4	Income Diversification Grants	IFAD Grant/Ben	ARIS	Grants	multi	275,000	83,000	CPP	Yes	Oct-15		Dec-18	Within ARIS agreement
Total Component C						1,225,000	403,000						

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Component D- Project Management													
D.1 Project Management (APIU)													
D1	Vehicles 4WD/sedan	IFAD Loan	APIU	Equip&Goods	1	25,000	25,000	Shopping	No	Aug-14	Sep-14	Dec-14	
D2	Office equipment	IFAD Loan	APIU	Equip&Goods	multi	18,000	18,000	Shopping	No	Aug-14	Sep-14	Dec-14	
D3	Short-term TA	IFAD Grant	APIU	TA&Training	multi	42,000	15,000	IC	Yes	Aug-14		Dec-18	on a need basis
D4	Audit	IFAD Grant	APIU	TA&Training	1	80,000	30,000	CQ	Yes	Jul-14		Jun-19	
D5	Training and study tours	IFAD Grant	APIU	TA&Training	multi	62,500	30,000	Shopping	Yes	Aug-14		Dec-17	on a need basis
D6	Project Director	IFAD Loan	APIU	Recurrent	1	17,000		DC	No	Jan-18		Dec-18	
D7	Manager	IFAD Loan	APIU	Recurrent	1	16,000		DC	No	Jan-18		Dec-18	
D8	Pasture Management Specialits	IFAD Loan	APIU	Recurrent	1	54,000	16,000	DC	No	Jul-14		Dec-18	
D9	Livestock Specialits	IFAD Loan	APIU	Recurrent	1	48,000	13,500	DC	No	Jul-14		Dec-18	
D10	Financial Manager	IFAD Loan	APIU	Recurrent	1	15,000		DC	No	Jan-18		Dec-18	
D11	Procurement Specialist	IFAD Loan	APIU	Recurrent	1	70,000	20,000	IC	Yes	Jul-14		Dec-18	probation
D12	M&E Manager	IFAD Loan	APIU	Recurrent	1	13,000		DC	No	Jan-18		Dec-18	
D13	M&E, Gender and KM Specialit	IFAD Loan	APIU	Recurrent	1	48,000	13,500	IC	Yes	Jul-14		Dec-18	probation
D14	IT Specialist	IFAD Loan	APIU	Recurrent	1	13,000		DC	No	Jan-18		Dec-18	
D15	Interpreter	IFAD Loan	APIU	Recurrent	1	9,000		DC	No	Jan-18		Dec-18	
D16	Disbursement Officer	IFAD Loan	APIU	Recurrent	1	48,000	13,500	DC	No	Jul-14		Dec-18	
D17	Assistant Procurement Officer	IFAD Loan	APIU	Recurrent	1	10,000		DC	No	Jan-18		Dec-18	
D18	Secretary	IFAD Loan	APIU	Recurrent	1	4,000		DC	No	Jan-18		Dec-18	
D19	Driver	IFAD Loan	APIU	Recurrent	1/4	31,000	6,000	DC	No	Jul-14		Dec-18	
D20	Allowances	IFAD Loan	APIU	Recurrent	N/A	21,500	10,000	SOE	No	Jul-14		Dec-18	
D21	Social Fund	IFAD Loan	APIU	Recurrent	N/A	68,500	14,000	SOE	No	Jul-14		Dec-18	
D22	Office running costs	IFAD Loan	APIU	Recurrent	multi	103,500	26,000	Shopping	No	Jul-14		Dec-18	
Subtotal D.1						817,000	250,500						
D.2 Monitoring and Evaluation													
D23	National forum	IFAD Grant	APIU	TA&Training	1	3,500	3,500	Shopping	No	Jul-14		Jul-14	
D24	Stakeholder Review and Planning Workshops	IFAD Grant	APIU	TA&Training		5,000	1,000	SOE	No	Sep-14		Dec-18	
D25	Baseline Survey	IFAD Grant	APIU	TA&Training	1	10,000	10,000	CQ	Yes	Jul-14		Dec-14	
D26	Upgrading MIS system	IFAD Grant	APIU	TA&Training	1	5,000	5,000	IC/CQ	No	Jul-14		Dec-14	
D27	Mid-term Review	IFAD Grant	APIU	TA&Training	1	16,000		CQ	Yes	Jan-16		Jun-16	
D28	Project Completion Survey	IFAD Grant	APIU	TA&Training	1	11,000		CQ	Yes	Jan-18		Jun-18	
D29	Outcome surveys and impact assessment	IFAD Grant	APIU	TA&Training	multi	10,500		IC/CQ	No	Jan-15		Dec-18	
D30	Publications and Printing	IFAD Loan	APIU	Equip&Goods	multi	11,000	3,000	Shopping	No	Jan-15		Dec-18	
D31	Information dissemination workshops	IFAD Grant	APIU	TA&Training	multi	16,000		SOE	No	Jan-16		Dec-18	
Subtotal D.2						88,000	22,500						
Total Component D						905,000	273,000						
Total LMDPII						39,528,000	11,201,900						

Appendix 9: Project cost and financing

A. Introduction

1. This section describes the assumptions underlying the derivation of Project costs, estimated Project costs and financing plan. The Project costs are based on July 2013 prices. Some of the key parameters are:

- Project Period. The proposed project would be financed over a five-year period
- Inflation. The EIU's estimates for the consumer price inflation in 2013-14 is 7.5%, and this rate was set as a base for the analysis for the whole project period 2014-2018
- Exchange Rate. The Base Exchange rate for this analysis has been set at KGS 49 to US\$ 1 as an official exchange rate prevailing in July 2013.

2. The Project costs are presented in both KGS and US\$. Conversions from current US\$ values into Kyrgyz Som use the following constant purchasing power exchange rates:

Table 1: Constant Purchasing Power Exchange Rates (KGS/US\$)

Up to Project Start-up	PY1	PY2	PY3	PY4	PY5
49	50.2	52.7	55.2	57.9	60.7

3. Taxes and Duties. Overall, the items to be imported for the Project do not attract any import and excise duties. However, there is VAT of 12% levied on all imported and locally procured goods and services. International technical assistance carries a 10% tax on non-residents. For directly recruited local staff and national technical assistance, the project would cover the employer's tax of 17.25% (Social Insurance). The Government would finance the cost of all taxes on goods and services procured under the project.

4. Expenditure Accounts. The expenditure accounts, together with the breakdown of taxes, physical contingencies and the average rates for foreign exchange used in the analysis are shown in Table 2 below. Physical contingencies have only been applied on the items for which the required amounts could not be reasonably estimated, and have not been applied to the funds earmarked for the grants as they follow a demand-driven delivery scheme.

Table 2: Expenditure Accounts

Description	Taxes (share in total costs)	Physical Contingency	Foreign Exchange
Investment Costs			
Equipment and Goods	10.7%	0%	70%
Vehicles	10.7%	0%	80%
Technical Assistance			
International TA	9%	0%	91%
National TA	0%	0%	0%
Training and Workshops	0%	0%	30%
Pasture/Livestock Improvement Grants	0%	0%	0%
Value Chain and Diversification Grants	0%	0%	0%
Other Grants			
Recurrent Costs			
Salaries	0%	0%	0%
Social Fund	0%	0%	0%
Operating Expenses	10.7%	5%	30%

5. Project Investment Component Structure. The Project has four components, as follows:

- Community-based Pasture Management and Vulnerability Reduction
- Livestock Health and Production Services
- Diversification and Market/Value Chain Initiatives
- Project Management.

6. Project Organisation and Management. Overall implementation responsibility will rest with the APIU and ARIS in line with the similar arrangements established under LMDP and AISP.

B. Project Costs

7. The total investment and incremental recurrent Project costs, including physical and price contingencies, are estimated at about US\$ 39.5 million (KGS 1.96 billion). Physical and price contingencies are low at 1% of the total Project costs due to the fact that investments associated with the various grants represent around 70% of the total Project costs (expressed as a lump sum, no contingencies). The foreign exchange component is estimated at US\$ 1.6 million or about 4% of the total Project costs. Taxes and duties make up approximately US\$ 0.2 million. Majority of Project management expenses are covered under LMDP-I, therefore the funds allocated to the Project Management component make about 2% of the total Project costs. The summary and detailed cost tables are presented in Appendices 1 and 2 to Working Paper 1.

Table 3: Project Costs by Component

Component	(Som Million)			(USD '000)			%	%
	Local	Foreign	Total	Local	Foreign	Total	Foreign Exchange	Base Total Costs
A. Community-based Pasture Management and Vulnerability Reduction								
1. Community Risk-mitigation Pasture Management and Investments	1,510.2	8.6	1,518.7	30,819.4	175.0	30,994.4	1	79
2. Pasture Institutional Strengthening	98.8	44.6	143.4	2,016.0	909.8	2,925.8	31	8
Subtotal Community-based Pasture Management and Vulnerability Reduction	1,608.9	53.2	1,662.1	32,835.4	1,084.8	33,920.2	3	87
B. Livestock Health and Production Services								
1. Strengthening Veterinary and Community Animal Health Services	89.5	2.1	91.6	1,826.9	43.5	1,870.4	2	5
2. Animal Health Education and Capacity Building	42.5	13.6	56.1	867.1	277.9	1,145.0	24	3
Subtotal Livestock Health and Production Services	132.0	15.7	147.8	2,694.0	321.4	3,015.4	11	8
C. Diversification and Market/Value Chain Initiatives	59.1	0.9	60.0	1,206.8	18.2	1,225.0	1	3
D. Project Management								
Project Management	32.3	5.0	37.3	658.9	101.9	760.7	13	2
Monitoring and Evaluation	3.9	0.1	4.1	79.8	3.0	82.8	4	-
Subtotal Project Management	36.2	5.1	41.3	738.6	104.9	843.5	12	2
Total BASELINE COSTS	1,836.3	74.9	1,911.2	37,474.8	1,529.3	39,004.1	4	100
Physical Contingencies	12.8	0.3	13.1	260.9	5.6	266.5	2	1
Price Contingencies	33.2	6.4	39.7	215.1	42.3	257.4	16	1
Total PROJECT COSTS	1,882.3	81.6	1,963.9	37,950.8	1,577.1	39,527.9	4	101

C. Financing

8. An IFAD loan, US\$ 11 million (27.8% of the total Project costs), would finance: 30% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 10.2 million), 7% of the Livestock Health and Production Services Component (US\$ 0.2 million), and 69% of the Project Management Component (US\$ 0.63 million). An IFAD grant of US\$ 11.0 million (27.8% of the total Project costs) would be used to finance: 23% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 7.8 million), 74% of the Livestock Health and Production Services Component (US\$ 2.2 million), 61% of the Diversification and Market/Value Chain Initiatives Component (US\$ 0.75 million), and 29% of the Project Management Component (US\$ 0.26 million). An ASAP grant of US\$ 10.0 million (25.3% of the total Project costs) would be used to finance: 28% of the Community-based Pasture Management and Vulnerability Reduction Component (US\$ 9.8 million) and 18% of the Diversification and Market/Value Chain Initiatives Component

(US\$ 0.22 million). The Government contribution is estimated at US\$ 0.27 million (2%) and includes contributions from its budget primarily to cover a part of EWS O&M costs as well as taxes (see below). The Republican Association of Pasture Users Union would provide around US\$ 175 thousand (less than 1% of the total Project costs) to meet some of its operational expenses. Approximately US\$ 7.0 million (18%) would be provided by the beneficiaries as co-financing of the Community Pasture Management Plans and other grants.

9. The Government contribution would cover all taxes and duties on all Project inputs that involve funding from the IFAD Loan/Grant and ASAP Grant or any other external source of funding associated with the IFAD Loan/Grant and ASAP Grant. In addition, the Government is expected to contribute from its budget about US\$ 54 thousand to cover a part of the operational costs to support the EWS. The estimate of taxes and duties was based on the rates in effect prevailing at the time of the design. In conformity with the principle that no taxes or duties would be financed out of the proceeds of the IFAD Loan/Grant and ASAP Grant, any future changes in the rates and/or structures of taxes and duties would have to apply to the Project.

10. Tables 5 and 6 below provide summaries by the Project components and expenditure accounts of the proposed financing arrangement. The other summary financing tables are provided in Appendix 1 of Working Paper 1.

Table 4: Financing Plan by Components (US\$)

Component	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		Rep Association of PUU		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
A. Community-based Pasture Management and Vulnerability Reduction																
1. Community Risk-mitigation Pasture Management and Investments	9,881	31.6	6,105	19.5	9,037	28.9	-	-	6,256	20.0	23	0.1	-	-	31,302	79.2
2. Pasture Institutional Strengthening	292	9.6	1,646	54.0	743	24.4	54	1.8	-	-	137	4.5	175	5.7	3,047	7.7
Subtotal Community-based Pasture Management and Vulnerability Reduction	10,173	29.6	7,751	22.6	9,780	28.5	54	0.2	6,256	18.2	160	0.5	175	0.5	34,349	86.9
B. Livestock Health and Production Services																
1. Strengthening Veterinary and Community Animal Health Services	5	0.3	1,314	69.5	-	-	-	-	570	30.2	1	-	-	-	1,890	4.8
2. Animal Health Education and Capacity Building	195	16.9	927	80.0	-	-	-	-	-	-	36	3.1	-	-	1,159	2.9
Subtotal Livestock Health and Production Services	200	6.6	2,242	73.5	-	-	-	-	570	18.7	37	1.2	-	-	3,049	7.7
C. Diversification and Market/Value Chain Initiatives	-	-	745	60.8	220	18.0	-	-	258	21.1	2	0.1	-	-	1,225	3.1
D. Project Management																
Project Management	617	75.5	184	22.5	-	-	-	-	-	-	16	1.9	-	-	817	2.1
Monitoring and Evaluation	10	10.8	77	87.9	-	-	-	-	-	-	1	1.3	-	-	88	0.2
Subtotal Project Management	627	69.2	262	28.9	-	-	-	-	-	-	17	1.9	-	-	905	2.3
Total PROJECT COSTS	11,000	27.8	11,000	27.8	10,000	25.3	54	0.1	7,084	17.9	216	0.5	175	0.4	39,528	100.0

Table 5: Financing Plan by Expenditure Accounts (US\$)

Expenditure Account	IFAD Loan		IFAD Grant		ASAP		Govt cash		Ben Contribution		GOVT: Taxes		Rep Association of PUU		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs																
A. Goods, Equipment and Materials																
Goods, Equipment and Materials	475	39.1	-	-	610	50.2	-	-	-	-	130	10.7	-	-	1,216	3.1
B. Vehicles																
Vehicles	54	89.3	-	-	-	-	-	-	-	-	7	10.7	-	-	61	0.2
C. Technical Assistance and Studies																
International TA	-	-	308	81.3	37	9.7	-	-	-	-	34	9.0	-	-	379	1.0
National TA /a	-	-	6,452	97.1	18	0.3	-	-	-	-	-	-	175	2.6	6,646	16.8
Subtotal Technical Assistance and Studies	-	-	6,760	96.2	55	0.8	-	-	-	-	34	0.5	175	2.5	7,025	17.8
D. Training and Workshops																
Training and workshops	-	-	1,477	99.3	10	0.7	-	-	-	-	0	-	-	-	1,488	3.8
E. Pasture/Livestock Improvement Grants	9,759	39.0	-	-	9,009	36.0	-	-	6,256	25.0	-	-	-	-	25,024	63.3
F. Value Chain and Diversification Grants	-	-	462	49.1	220	23.4	-	-	258	27.4	-	-	-	-	940	2.4
G. Other Grants /b	-	-	2,300	80.1	-	-	-	-	570	19.9	-	-	-	-	2,870	7.3
Total Investment Costs	10,289	26.6	11,000	28.5	9,904	25.6	-	-	7,084	18.3	171	0.4	175	0.5	38,622	97.7
II. Recurrent Costs																
A. Salaries and Allowances	418	100.0	-	-	-	-	-	-	-	-	-	-	-	-	418	1.1
B. Social Fund	68	100.0	-	-	-	-	-	-	-	-	-	-	-	-	68	0.2
C. Operating Expenses																
Vehicles	33	89.3	-	-	-	-	-	-	-	-	4	10.7	-	-	36	0.1
Office	60	89.3	-	-	-	-	-	-	-	-	7	10.7	-	-	67	0.2
Other	132	41.9	-	-	95	30.2	54	17.2	-	-	34	10.7	-	-	316	0.8
Subtotal Operating Expenses	225	53.6	-	-	95	22.8	54	12.9	-	-	45	10.7	-	-	419	1.1
Total Recurrent Costs	711	78.5	-	-	95	10.5	54	6.0	-	-	45	5.0	-	-	906	2.3
Total PROJECT COSTS	11,000	27.8	11,000	27.8	10,000	25.3	54	0.1	7,084	17.9	216	0.5	175	0.4	39,528	100.0

la Also includes costs of ARIS. Unit costs for NTA includes charges of 17.25% to the Social Fund.
lb Micro grants to AHC, CV, CSF and scholarships.

Appendix 10: Economic and Financial Analysis

A. Introduction

1. Historically the mountain ecosystems of Kyrgyzstan with their rich grassland resources used to be a strong foundation for a large ruminant based livestock sector providing a major source of income for most rural families. Uncontrolled and unmanaged exploitation practiced over the last decades has resulted in resource destruction clearly visible around most mountainous villages in Kyrgyzstan. These unsustainable practices have eroded large parts of an important natural resource base resulting in severe implications on soil fertility, vegetation cover, soil and water management and a general loss of biomass.
2. Livestock ownership is a key coping strategy for the smallholder farmers in Kyrgyzstan. There has been a rapid increase in livestock ownership by smallholder farmers. However, this increase has happened despite the fall in feed availability. Most poor farmers in mountainous Kyrgyzstan are constrained by low productivity of livestock, limited availability of feed, degraded pasture lands especially winter and spring pastures, limited adaptation capacity to climate change, poor animal husbandry practices, limited access to animal health care, high cost of purchased feed, lack of good quality fodder seed, lack of availability of financial services, poor access to markets, and limited access to technologies for value addition.
3. Improvement in livestock productivity could help poor households deal with food security issues and enhance their nutrition status. Despite the relative decrease in poverty there are still a significant number of people suffering from chronic malnutrition and poverty in the country. Investment in measures to overcome the constraints in the livestock sector would have an immediate impact on smallholders' nutrition status, food security profile, income and livelihoods and contribute to a greater contribution of livestock in agriculture incomes, employment and productivity and help in the overall contribution of the livestock sector to agriculture GDP to bring about growth and poverty alleviation in rural areas.
4. At the Government's request the proposed Livestock and Market Development Programme (LMDP) is aiming to increase incomes of smallholders and poor households in the project areas through increased livestock productivity.
5. The outcomes expected from LMDP include the following: (i) increase in yields of milk and meat production; (ii) increase in quantity and quality of livestock products marketed; (iii) reduction in animal morbidity and mortality; (iv) improved policy and regulatory framework for pasture management; (v) increase in productive capacity of pastures; (vi) increase in smallholder farmers', especially women's, ability to market their livestock products; and (vii) reduced vulnerability of smallholder farmers.
6. This Appendix identifies the possible activities and investments that the communities are likely to choose depending upon their feasibility within specific conditions. During Project implementation particular interventions would be tailored according to the priority needs expressed by the beneficiaries and the economic conditions at a certain location. A number of potential economic activities were identified during the Project design although the opportunities for increased production, suitable for project support, vary with the agro-ecological conditions. Favourable cash flows from the likely project financed investments indicate that the improvements in production, productivity and household incomes should be sufficient to ensure a steady adoption of the proposed interventions. Accordingly, the Project activities and scope discussed here and the assessment of prospective benefits and costs are only indicative.
7. The financial and economic analysis of LMDP follows recommendations for good practices and is based on the experiences of AISP and similar projects in Kyrgyzstan and other countries. This Annex is structured as follows: (i) project benefits; (ii) financial analysis; and (iii) economic analysis, including sensitivity analysis by varying key assumptions of important variables.

B. Project Benefits

8. The Project is expected to lead to increased incomes of households, smallholder farmers and rural entrepreneurs. Benefits would derive from: (i) increased pasture yields; (ii) raised cultivated feed crop yields and expanded cultivated feed crop area through increased rotation with cereal crops; (iii) improved capacity of smallholders for livestock management; (iv) establishment of a viable plan for supplying livestock advisory and health services; (v) opportunities for better breed improvement and selection; and (vi) improved coping capacity for climate change adaptation, including reduced damages thanks to the Early Warning System. Also, there would be economic benefits from carbon sequestration in improved pastures. In addition, the project will support investments for women's groups who lack access to credit to provide them with the initial capital to enhance their marketing activities. This will stimulate a number of different micro-enterprises and encourage the women to undertake project activities, which may result in the growth of these enterprises and ultimately in increased household income.

Unquantifiable Benefits

9. **Participatory Community Development.** The adoption of a participatory community demand-driven approach would result in: (a) empowering communities to manage their own resources in a more efficient manner; (b) accustoming the community to prioritize, plan and implement proposed economic activities; (c) assisting communities, organised on a voluntary basis, to interact more effectively with local administration, central government and other sources for the delivery of services; (d) helping to develop new relationships and public-private partnerships under a democratic form of governance; and (e) orienting communities and individuals to improve their livelihoods using market-oriented approaches. As a result, it is expected that communities and their organisations would be strengthened through participatory and gender sensitive approaches matched with equally strengthened capacity of government agencies and other service providers who be able to meet expressed community's priorities in a timely and transparent manner.

10. Project interventions would also provide capacity building and training to the institutional partners leading in the end to the institutional strengthening of local and central administrations. Strengthening local planning capacities would also include developing the synergies between different interventions and donors activities.

11. **Environmental Benefits.** The intensification of agriculture is considered an important vehicle for economic development and poverty reduction. However, there is a growing concern in the developing countries about land degradation caused by soil erosion and its impact on agricultural production. To this end, the project would support soil and water conservation interventions that would have a positive impact on the environment and natural resources of the project area. The main economic benefits would accrue from: (a) increased area of land saved and land reclaimed; (b) improved agro-ecosystems; (c) increased value of nutrient recovery in the soil; and (d) increased moisture availability, water infiltration and improved water quality in pastures through water supply and water harvesting structures.

12. **Employment Generation.** The proposed Project would generate additional employment opportunities for the rural population in the project area either as hired labour or as increased household labour requirements for both on-farm and off-farm activities as well as through project supported-works for rural infrastructure like water supply and water harvesting structures, rehabilitation of pasture schemes and improved pasture access. Most of these opportunities would benefit the poorest in the area.

13. The Project is expected to boost economic activities including trade and employment. However, principal increases in incomes would be largely dependent on farmers/rural entrepreneurs' willingness to move towards commercially viable agriculture by adopting better farm management practices thereby improving their market access, supporting marketing linkages, and generally creating a favourable economic environment that encourages farmers/rural entrepreneurs to produce more competitive products.

14. The above benefits are rather difficult to estimate mainly due to lack of efficient and reliable data. Therefore, the analysis mainly assumes quantifiable revenues generated by participating smallholder farmers from livestock production and direct social and environmental benefits (reverted damage costs and carbon sequestration).

C. Financial Analysis

15. Objectives. The objectives of the financial analysis are:

- to assess the financial viability of the improved technologies and systems promoted by the project and the increase in incomes from indicative investments; and
- set a basis for the economic analysis.

D. Key Assumptions

16. The parameters for the models are based upon the information on the production systems gathered during the design missions: interviews with farmers and entrepreneurs, a review of available documents and statistics as well as information from the ongoing WB/IFAD's AISP. In particular, information on labour and input requirements for various operations, capital costs, prevailing wages, yields, farm gate and market prices of agriculture produce and farm-to-market transport costs were collected. Conservative assumptions were made both for inputs and outputs. The models show only incremental revenues and costs generated by the new investment.

17. Prices. Prices of commodities/inputs reflect annual average and those actually paid/received by the farmer/entrepreneur. These were collected during the field visits, national statistics, FAOSTAT and local experts. A list of prices used in the analysis is found in Appendix 1 to Working Paper 2.

18. Taxes and Pasture Fees. On average, a land tax of KGS 2.65 per Ha and a PUU fee of KGS 60 per Livestock Unit (LU) were applied.

19. For the purposes of evaluation of the average returns per labour day, a financial rural daily wage rate of KGS 350 has been assumed for planting, weeding, harvesting etc. Labour opportunities at other times in the agricultural year are extremely limited and wages tend to be lower.

20. Internal Rate of Return. The internal rate of return (IRR) of 12% is used in this analysis to assess the viability and robustness of investments.³² The selection criterion for the IRR is to accept all projects for which the IRR is above the opportunity cost of capital. Using the IRR as the measure, the models' sensitivity to the changes in parameters can be assessed by varying the cost of investments, production costs and revenues.

21. Detailed physical and financial parameters for the demonstrated models are presented in Appendices 2, 3 and 4 to Working Paper 2.

E. Production Models

22. Five production models were prepared to serve as building blocks for the analysis: (i) Pasture Superficial Improvement; (ii) Pasture Radical Improvement; (iii) Controlled Grazing; (iv) Alfalfa; and (v) Annual Grass.

23. Table 1 shows the Production Models Summary results and the comparison of income in the without and with project (full development at Year 5) scenarios for the above activities. Incremental increases are expected to range between USD 10/Ha for the Controlled Grazing model and USD 306/Ha for the Radical Improvement model. Benefit/cost ratios were also calculated for each model, which demonstrate the attractiveness of the new technologies.

³² The IRR is a measure of the project's worth that in this case compares the return on the investment with the best alternative use of the funds (i.e. if the money were deposited in a bank), the WB's estimate is 12%.

Table 1: Production Models Summary (Financial) /a

Model	WP Investment Cost (US\$/ha)	WP Average Recurrent Cost (US\$/ha)	Income, US\$		Incremental Income (US\$/ha)	WP Benefit/Cost Ratio
			WOP	WP		
Superficial Improvement	97	0	20	50	30	N/A
Radical Improvement	173	10	143	449	306	45.0
Controlled Grazing	0	7	40	50	10	8.0
Alfalfa	222	41	466	612	146	16.0
Annual Grass	0	62	121	199	78	4.2

a) WOP – without Project; WP – with Project.

F. Community Pasture Management Plan (CPMP)

24. The Project would support pasture and livestock improvement interventions including access to pastures, rehabilitation of pasture schemes, water supply, livestock migration, etc. which would be for benefit at large and formalized in a Community Pasture Management Plan (CPMP) by the participating Pasture Users Unions (PUU). The preparation of such a plan would follow a set of important criteria, namely technical, social, financial and economic detailed in the Project Implementation Manual. The analysis attempts to illustrate such a plan for a typical PUU in the project area. The model has been developed taking into account the practical improvements that could be made to the existing pasture and livestock practices. A typical PUU represents the PUU of the project regions (Batken, Jalal-Abad and Osh). The numbers of households and livestock, agricultural and pasture areas, outputs and other data of the typical PUU have been identified by averaging the PUUs' data in the project regions and using other representative information like on the pasture yields from the Pasture Department as well as 8 draft CPMPs prepared in the project regions. The model is indicative and underestimated as it does not capture a possible expansion of livestock numbers (as it is assumed the same number of livestock in WOP and WP situations; however due to the enhanced live weight of animals, the livestock unit (LU) value is higher). The details are provided in Appendix 3 to WP 2, and a summary is presented below.

25. It has been identified, that the typical PUU has about 19 061 Ha of pastures, including 2 136 Ha of winter pasture, 5 233 Ha of spring and autumn pasture and 11 691 Ha of summer pasture. About 4 000 ha of summer pasture are not used due to the limited access. The PUU also cultivates about 200 Ha of forage crops and it harvests hay and straw from about 150 Ha of haymaking fields and about 1 200 Ha of grain fields on average. In addition, it purchases about 130 tons of cottonseed oilcake from the local ginning factories to feed its livestock.

26. About 3 725 heads of cattle, about 13 889 heads of sheep and goats and approximately 644 heads of horses belong to approximately 1 985 households on average. The population of the typical PUU is about 11 199 persons. The key livestock parameters are presented in Table 2:

Table 2: Key Livestock Parameters

Item	Unit	Cattle			Sheep			Horses		
		WOP	WP	Incremental %	WOP	W P	Incremental %	WO P	WP	Incremental %
Live Weight (cow, ewe, mare)	kg	300	345	15	40	46	15	350	403	15
Live Weight (off springs)	kg	90	104	15	25	29	15	200	230	15
Milk yield - daily average	lt	6.0	7.5	25				4	5	25
Milk yield - total lactation	lt/head	1260	1575	25				720	900	25

27. A demonstrative model of feed/forage balance of the typical PUU was prepared to serve as a base for the analysis. This includes productivity estimates for pasture and forage production areas

which were put in the context of the feed/forage demand in the PUU. The model shows that the typical PUU is provisioned with the feed/forage at 66% of the annual demand resulted in a low livestock productivity which in turn leads to insufficient meat and milk production and consumption.

28. Based on the above assessment, a list of likely project activities has been developed to improve the feed/forage balance of the typical PUU. This list together with the crops budgets, pasture improvement activities, machinery requirements, veterinary services and improved feed/forage balance forms a Community Pasture Management Plan (CPMP). The Plan's main objective is to define options for the increased quantity and quality of the overall feed/forage production as well as enhanced animal health, while reducing the pressure on overgrazed degraded areas and regenerating their productive capacity.

29. It is proposed in the CPMP to improve 1 018 Ha of pastures by applying better technologies (particularly the superficial and radical pasture improvements and controlled grazing). It is also envisaged to improve access to about 2 000 Ha of summer pastures, which are currently not used due to lack of water supply and poor roads. It is also recommended to expand the area under forage crops (by 100 Ha) and applying better technology on them that would increase yields and outputs. It also planned to reduce consumption of costly cottonseed oilcake by about 23%.

30. It is expected that as a result of the CPMP's implementation, the feed/forage provision of the typical PUU would increase up to 75% of the annual demand. Thanks to the CPMP the utilization factor of the pasture's dry mass would raise by 15-20%. This together with the improved animal health interventions would allow to increase production of meat and milk by 15% and 25% and consumption - by 13% and 25% respectively. Sales of meat would grow by 18%. Households' annual net income would increase by USD 140 on average, from USD 863 to USD 1 003 per household.

31. Summary. The financial analysis of the CPMP shows: (i) the increase in incremental income by 15%; and (ii) a high benefit/cost ratio (14.6) and IRR (80%) due to the very low starting point, demonstrating the attractiveness of the investments. Sensitivity analysis was undertaken to assess the impact of changes in: (i) output prices; (ii) expected yields; (iii) operating costs; and (iv) investment costs on the financial returns. It showed that the model is more sensitive to the changes in price and productivity assumptions rather than to variations in the production and investment costs. The analysis also showed that the PUU would be able to finance its CPMP beyond the project support out of its own fee collection given that it increased from the present US\$ 5 000 to US\$ 20 000 per annum (or about KGS 230/LU per year versus KGS 60/LU currently applied on average).

32. Table 3 presents a summary of the CPMP model while the details could be found in Appendix 3 to WP 2.

Table 3: Summary of CPMP Model

Items	Unit	Without Project	With Project Full Development	Incremental Value	%
Number of households	no	1,985	1,985	0	0
Population	no	11,199	11,199	0	0
<u>Land structure and livestock number</u>					
Pastures					
Summer pasture, total	ha	7691	9691	2000	26
Existing	ha	7691	7691	0	0%
Improved access	ha	0	2000	2000	
Winter pasture	ha	2136	2036	-100	-5
Spring/Autumn pasture	ha	5233	5233	0	0
Subtotal Pasture		15,061	16,961	1900	13
Fodder crops					
Alfalfa	ha	100	150	50	50

Items	Unit	Without	With Project	Incremental	
Annual grass	ha	150	200	50	33
Subtotal Fodder crops		250	350	100	40
Haymaking fields	ha	200	200	0	0
Livestock number (in Livestock Units)	LU	4,240	4,864	623	15
Production					
Meat	kg	245,579	282,824	37,244	15
Milk	kg	1,709,316	2,136,645	427,329	25
- Revenues					
Meat	USD	1,102,602	1,269,820	167,219	15
Milk	USD	697,680	872,100	174,420	25
Total Revenues	USD	1,800,282	2,141,920	341,639	19
Average Household's Benefits					
Milk consumption	lt/capita	76.3	95.4	19.1	25
Meat consumption	kg/capita	13.1	14.8	1.7	13
Annual net income from livestock	USD/hh	863	1,003	140	16
Improvement Activities					
<u>Pasture Improvement:</u>					
Superficial improvement (SI)	ha		61.1		
Radical improvement (RI)	ha		26.2		
Controlled grazing (CG)	ha		930.6		
<u>Other operations</u>					
Machinery package a/	set	0	1		
Vet services, vaccination b/	LU	2,120	4,864		
Improved access to pasture	ha	0	2,000		
Payment to shepherd c/	LU	1,060	2,432		
- Cost of 3-year Improvement Plan	USD		100,863		
	hh		51		
Total Investment Costs	USD		207,057		
Total Net Income	USD	1,712,942	1,974,088	261,146	15
Benefit/Cost Ratio			14.6		
Incremental Net Income	USD		261,146		
Incremental annual net benefits per USD1 of investment	USD		1.26		
NPV (@12%)	USD		1,266,201		
IRR	%		79.7%		
Switching Values d/:					
- Incremental Revenues	%		-68%		
- Incremental Production Costs	%		211%		
- Incremental Investments	%		737%		

a/ a machinery package per one PUU (indicative investment, other investments may include construction of watering points, shelters, spot road improvement, bridges, etc. as demanded by communities)

b/ approximately 500 KGS per one LU. Coverage: WOP - 50% and WP - 100% of livestock

c/ coverage: WOP - for only 25% of livestock; WP - for 50% of grazing livestock (mostly for sheep and goats)

d/ switching values show percentage by which the costs would need to rise or benefits decrease before the NPV reached zero, associated with each of the values (at 12% opportunity costs)

G. Value Chain (VC) and Income Diversification (ID) Models

33. The project would support value adding and income diversification activities (VC&ID Grants) for smallholder farmers, especially women. Three indicative models were prepared for marketing investments to illustrate the potential returns.

Milk Collection/Cooling Centre (MCCC) Model

34. There are animal health, sanitary and food safety issues in the dairy value chain. This prevents exports of dairy products to the neighbouring countries on a permanent basis. The market for processed dairy products is highly competitive (domestic production, imports) and entering this market requires substantial resources (investment and operational) as well as development of a marketing strategy and identification of a niche market.

35. The processors in the project area are potentially interested in stable supply of raw milk however the smallholder producers produce little volumes of milk and often of inconsistent quality. Yet farmers have limited opportunities to market their dairy products profitably. Setting up milk collection and cooling points to supply bulk quantities of raw material to the processors could be a solution. Farmers would sign up to the animal health and feeding programme and would ensure that animals are healthy and provide quality milk to the standards required by the processors.

36. This model indicates the likely returns over time to a women group obtaining an investment package for setting up a collection/cooling centre amounting to about US\$ 28 000. The financial analysis presented in Appendix 4 to WP 2 demonstrates that at the indicative price margin of 10%, an MCCC supplying 2 tons/day of milk for 300 days would have an annual incremental benefit of KGS 605 000 (about US\$ 12 340) and produce IRR of 55% over a period of ten years. The returns to labour day would be around KGS 763 with project.

Small-scale Milk Processing Model

37. This model demonstrates the likely returns from an investment in expansion of an existing small-scale milk processing unit from 250 to 500 litres/day amounting to about US\$ 13 000 (mainly equipment). The unit is run by a group of five women. The investment would result in production of 9 000 kg of cottage cheese, 3 600 kg of butter and 8 571 kg of sour cream per year. The financial analysis presented in Appendix 4 to WP 2 demonstrates that the women group would have an annual incremental benefit of KGS 402 800 (about US\$ 8 220) and produce IRR of 61% over a period of ten years. The model indicates that the household benefits would improve by about US\$ 1 644 with project per year. The returns to labour day would be around KGS 389 with project.

Solar Green House Model

38. This model demonstrates an opportunity for diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. The model indicates the likely returns from an investment in establishing a solar greenhouse amounting to about US\$ 7 939 (mainly building and equipment). The unit is run by a household. The investment would result in production of 1 540 kg of tomatoes and 1 980 kg of cucumbers per year. The financial analysis presented in Appendix 4 to WP 2 demonstrates that the household would have an annual incremental benefit of KGS 192 580 (about US\$ 3 930) and produce IRR of 63% over a period of ten years. The returns to labour day would be around KGS 1 605 with project.

39. The detailed financial analysis for each of the three VC&ID models is contained in Appendix 4 to WP 2. Table 4 below summarises the financial returns from the proposed VC&ID models.

Table 4: Value Chain and Income Diversification Models Summary

Model	Investment Costs, USD	Annual Net Benefits (USD)			Incremental annual net benefits per USD1 of investment (USD)	Benefit/Cost Ratio	IRR (%)	NPV (USD)
		Without Project	With Project -Full Development	Incremental				
Milk Collection	28,000	0	12,340	12,340	0.4	1.1	55	39,102
Milk Processing	13,000	2,249	10,469	8,220	0.6	1.1	61	27,197
Solar Green House	7,939	0	3,930	3,930	0.5	10.3	63	13,176

NPV =USD 47.0 million; ERR =26%

H. Economic Analysis

41. The period of analysis is 20 years to account for the phasing and gestation period of the proposed interventions. The scenario presented in the economic analysis is conservative; the analysis that appears below is indicative and demonstrates the scope of profitability originated from the conditions prevailing at the time of the design.

42. Benefit Stream. The analysis attempts to identify quantifiable benefits that relate directly to the activities undertaken following implementation of the components, or that can be attributed to the Project's implementation.

43. Price estimates for tradable commodities have been based on the World Bank's Commodity Market Review (June 2013). All local costs were converted into their approximate economic values using a Standard Conversion Factor (SCF) of 0.9. The derivation and a summary of economic prices are presented in Appendix 1 to Working Paper 2. All values are given in constant 2013 prices.

44. The incremental quantifiable benefit stream comprises of four main elements: (i) Community Pasture Management Plans (CPMP); (ii) Value Chain and Income Diversification Grants (VC&ID Grants); (iii) Early Warning System (EWS); and (iv) Carbon Sequestration.

45. The illustrative models described above have been used for the calculation of the overall benefit stream, on the basis of economic prices. The summary of economic benefits of the demonstrated CPMP and VC&ID Grant Models is presented in Tables 5 and 6, while the details could be found in the previous sections.

Table 5: Summary of CPMP Model (Economic)

Cost of 3-year Improvement Plan	USD	90,965
-	hh	46
Total Investment Costs	USD	184,441
Total Net Income	USD	1,756,247
Benefit/Cost Ratio		11.2
Incremental Net Income	USD	237,704
Incremental annual net benefits per USD1 of investment	USD	1.29
NPV (@12%)	USD	1,158,013
IRR	%	81.6%
Switching Values:		
- Incremental Revenues	%	-69%
- Incremental Production Costs	%	222%
- Incremental Investments	%	754%

Table 6: Summary of VC&ID Grant Models (Economic)

Model	Investment Costs, USD	Annual Net Benefits (USD)			Incremental annual net benefits per USD1 of investment (USD)	Benefit/Cost Ratio	IRR (%)	NPV (USD)
		Without Project	With Project -Full Development	Incremental				
Milk Collection	25,200	0	10,746	10,746	0.4	1.1	53	33,319
Milk Processing	11,700	1,784	8,822	7,038	0.6	1.1	56	22,444
Solar Green House	7,145	0	3,115	3,115	0.4	3.5	49	9,279

46. In calculating the overall benefits from the above two elements, the following was considered:
- Allowing the illustrative examples as a reasonable assumption of the investments likely to be implemented, estimated average incremental annual net benefits per 1 US\$ of investments were used.
 - In particular, an average indicator for the incremental annual net benefits per US\$ 1 of investments equals to US\$ 1.29 for the CPMP and to US\$ 0.5 for the VC&ID Grants.
 - The incremental net benefits were calculated by multiplying these indicators by the amount of estimated investments, but considering the gradual increase of such benefits over the period of ten years.
 - An 80% success rate was applied to the models, i.e. it was assumed that only 80% of the investments would achieve the estimated returns.
 - No financing flows have been undertaken in the calculations as they or represent transfer payments (grants, contributions and taxes).
47. Early Warning System and Carbon Sequestration. The Project will establish an Early Warning System for pastures and livestock to provide policymakers, technicians, pasture committees and farmers with the most up-to-date and accurate information available on meteorological-related risks, warning institutions and farmers of imminent risks so that disasters can be minimized or avoided. Direct costs of disasters include crop and animal production losses, and damaged and lost property and household items. This results in direct quantifiable production losses. The EWS would allow to increase the lead time to at least 48 hours thus to avoid some of these losses resulting in incremental economic benefits (reverted production losses) of about US\$ 885 thousand per annum by PY5 and around US\$ 1 million per annum by PY20.
48. Investments in pasture rehabilitation would increase their carbon absorption capacity from initially 0.9 ton per Ha per annum to about 2 ton/Ha/year. It has been assumed that around 17 100 Ha of pastures would be rehabilitated throughout the project area (superficial and radical improvements) thus resulting in about 20 000 ton of carbon sequestered on annual basis, or approximately US\$ 136 thousand per annum in value terms.
49. Summary of Project Economic Benefit. The Project would reach about 304 000 households from 190 targeted PUUs (assuming around 1 985 households per PUUs on average, and reaching about 80%). About 193 420 Ha of pasture would be improved (1 018 Ha per PUU). In addition approximately 300 women would benefit from the value adding activities. Implementation of the Community Pasture Management Plans and Value Chain Grants for women would result in incremental production (at least 15%), consumption and sales of meat and milk which in turn improves nutrition status of rural population in the project districts and increases their income. It is estimated that about 20 thousand ton of CO₂ would be sequestered on average per annum valued at around US\$ 136 thousand. Installation of the EWS would allow to avoid losses of assets estimated at approximately US\$ 1 million annually.

50. The details of the calculations of benefit streams for four elements (CPMP, VC&ID Grants, Early Warning System and carbon sequestration) are presented in Appendix 5 to WP 2.

51. Cost Stream. The incremental economic costs have been calculated by the removal of price contingencies and taxes/duties. Recurrent costs and replacement of equipment were assumed for Y6 and onwards (in particular for supporting EWS and CPMP monitoring in economic terms, about US\$ 0.3 million). The total economic cost of the Project amounts to about US\$ 37.7 million.

52. Summary. Given the above benefit and cost streams, the base case internal rate of return (IRR) is estimated at 26%. The base case net present value of the project's net benefit stream, discounted at 12%, is US\$ 47 million. The summary of economic analysis is presented in Table 8.

53. Sensitivity Analysis. Economic returns were tested against changes in benefits and costs and for various lags in the realisation of benefits. In relative terms, the IRR is equally sensitive to changes in costs and in benefits. In absolute terms, these changes do not have a significant impact on the IRR, and the economic viability is not threatened by either a 20% decline in benefits or by a 20% increase in costs. A fall in total project benefits by 20% and an increase in total project costs by the same proportion would reduce the base IRR to about 19%. The switching values shows that the Project would be economically viable even if benefits decreased by 62% and investment costs increased by 163%. A one-year delay in project benefits reduces the IRR to 23%. With a two-year delay in project benefits, the IRR falls to approximately 20%. The results are presented in the following table:

Table 7: Sensitivity Analysis

Sensitivity Analysis (20-year period)	Base case	Costs Increase			Increase of Benefits		Decrease of Benefits			Delay of Benefits	
		+10 %	+20 %	+50 %	+10%	+20%	-10%	-20%	- 30%	1 year	2 years
IRR	26%	25%	23%	20%	28%	29%	24%	22%	20%	23%	20%
NPV (000'USD)	46,819	8,068	6,895	3,376	11,339	13,437	7,144	5,047	2,949	6,564	4,173
Discount rate	12%										

Table 8: Project Economic Analysis (constant 2013 values)

(USD thousand)	PY1	PY2	PY3	PY4	PY5	PY6	PY7	PY8	PY9	PY10	PY11	P12	PY13	PY14	PY15	PY16	PY17	PY18	PY19	PY20
Project Incremental Benefits																				
Net Benefits of CPM P	0	0	0	491	1,963	4,661	8,096	11,776	15,947	20,117	23,061	24,288	24,533	24,533	24,533	24,533	24,533	24,533	24,533	24,533
Net Benefits of Carbon Sequestration	0	0	7	32	59	87	115	120	125	130	136	141	147	153	159	166	173	180	187	195
Net Benefits of EWS	0	0	851	860	868	877	886	894	903	912	922	931	940	950	959	969	978	988	998	1,008
Net Benefits of VCDGs	0	0	0	10	45	108	196	287	357	385	385	385	385	385	385	385	385	385	385	385
Total Project Net Benefits	0	0	858	1,393	2,935	5,733	9,293	13,077	17,332	21,545	24,503	25,745	26,005	26,021	26,036	26,053	26,069	26,086	26,103	26,121
Project Costs																				
Investment Costs	4,478	8,664	12,027	8,866	3,709															
Goods and Equipment*						0	0	0	0	1,000	0	0	0	0	0	0	0	0	0	1,000
Recurrent Costs*						300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Total Project Costs	4,478	8,664	12,027	8,866	3,709	300	300	300	300	1,300	300	300	300	300	300	300	300	300	300	1,300
Total Project Incremental Net	-4,478	-8,664	-11,169	-7,473	-774	5,433	8,993	12,777	17,032	20,245	24,203	25,445	25,705	25,721	25,736	25,753	25,769	25,786	25,803	24,821
IRR	26.10%																			
2%(USD thousand)	46,819																			

* Replacement and recurrent costs associated with CPM P s and M G s are already included in calculation of net benefits from the Plans.

Here are the costs to continue support the EWS and CPM P monitoring

Appendix 11: Draft project implementation manual

Full manual to be found in LMDP-I PLF

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Appendix 12: Compliance with IFAD policies

1. The design of LMDP responds to and is fully consistent with IFAD policies and in particular supports the following policies:

- *IFAD Strategic Framework - 2011-2015* – from among the policy goals at the Programme and Project level, LMDP would meet four of the six stated goals in the Strategic Framework.
- *IFAD Environment and Natural Resource Management Policy* – the Project interventions are responsive to the core guiding principles of IFAD's ENRM policy, namely:
 - *Principle 1: IFAD will promote scaled-up investment in multiple-benefit approaches for sustainable agricultural intensification.* Through its first component, the Project will scale up existing best practices and will provide investments that will enhance the sustainability of the livestock sector through the implementation of climate proofed and environmentally sound Community Pasture Management Plans (CPMPs).
 - *Principle 2: IFAD will promote recognition and greater awareness of the economic, social and cultural values of natural assets.* The Project will provide extensive capacity building and training on ENRM to a wide array of national and local stakeholders, and it will mainstream project results into key policy processes.
 - *Principle 3: IFAD will promote climate-smart approaches to rural development.* The Project will introduce climate change adaptation and vulnerability reduction measures, activities and technologies into existing CPMPs, and it will make sure that climate-smart approaches are built from the start into the new plans.
 - *Principle 4: IFAD will promote greater attention to risk and resilience in order to manage environment and natural-resource-related shocks.* The Project will support the design and implementation of an Early Warning System that will enhance the resilience of stakeholders – from authorities to rural smallholders - to natural hazards, and their capacity to cope with increasingly frequent shocks.
 - *Principle 5: IFAD will promote engagement in value chains to drive green growth; And Principle 7: IFAD will promote livelihood diversification to reduce vulnerability and build resilience for sustainable NRM.* Through component 3, the Project will encourage and support income diversification and the development of new value chains based on sustainable production, which shall benefit the weakest sectors of the rural communities.
 - *Principle 6: IFAD will promote improved governance of natural assets for poor rural people by strengthening land tenure and community-led empowerment.* The Project will support the highly innovative community based pasture management with strong mechanisms and safeguards for inclusion of poor and women in decision making process, secured access to pasture resources for all through transparent and broad based preparation of Pasture Management and Use plans. .
 - *Principle 8: IFAD will promote equality and empowerment for women and indigenous peoples in managing natural resources.* The Project will implement targeting strategy to ensure representation of women in decision making bodies for pasture management through strengthening social mobilization process and capacity building programme. The Project will make sure that women fully benefit of all the capacity building and technical assistance provided throughout its components. Moreover, women will be the priority target for the dairy value chain and income diversification work foreseen under the component 3.
 - *Principle 9: IFAD will promote increased access by poor rural communities to environment and climate finance.* The Project will support environmentally sound investments for the poor rural communities under component 1, and it will facilitate access to other environmental and climate finance by building their skills and capacity, and by influencing national and local policies.

- ***IFAD Climate Change Strategy*** - The strong adaptation focus of the Project meets the goal of IFAD's strategy is to maximize impact on rural poverty in a changing climate, supporting innovative approaches to helping smallholder producers – both women and men – build their resilience to climate change, helping smallholder farmers take advantage of available incentives and funding, and informing a more coherent dialogue on climate change, rural development, agriculture and food security. Innovation will be introduced thanks to strong investment into new actions, technologies for the climate proofing of Community Pasture Management Plans, and the design and introduction of an Early Warning System, which will decrease the rural poor's vulnerability to increasingly frequent extreme climate events (heath, cold waves, frost and drought). The Project will also enhance climate-related knowledge management by contributing to the forging of a climate change partnership between institutions, donors and practitioners at the national level, and by informing key policy processes.
- ***IFAD Private Sector Strategy*** - The key to strategy adopted for Component 3 is, inter alia, the establishment of partnerships with milk processors and other market operators – this is very much in line with the new IFAD policy for the private sector which stresses the need to organize 'farmers into groups and build their capacity to negotiate with private companies, by building trust among the various partners, and by supporting a better business environment where such partnerships can flourish'. By placing a strong focus on women, the Project acknowledges their role in creating and running businesses - women own between 13 and 38 per cent of enterprises worldwide- as fundamental for growth and poverty reduction.

2. Through Component 3, the Project will make use of a system of grants for economic diversification to support private rural business and turn it into an increasingly important tool for poverty reduction, and an engine of growth in the rural society of Kyrgyzstan. Private sector initiatives will also be encouraged in Component 1 of the Project, i.e. in the CPMP investments and strengthening private vets.

- ***IFAD Targeting Policy*** - (See checklist below)
- ***IFAD Policy for Gender Equality and Women's Empowerment*** – the LMDP-II will focus on Strategic Objective 1 (Economic Empowerment), and in order to achieve this will put in place mechanisms to achieve SO2 (Equal voice and decision-making), as well as explore what interventions may be needed under SO3 (reducing workloads) to achieve the above; this is especially appropriate in a project that prioritizes adaptation to climate change, which is widely recognized to add to women's already heavy workloads. (See checklist below)

IFAD's key features of gender-sensitive design and implementation

Updated February 2013

	Design
1. The project design report contains – and project implementation is based on - gender-disaggregated poverty data and an analysis of gender differences in the activities or sectors concerned, as well as an analysis of each project activity from the gender perspective to address any unintentional barriers to women's participation.	For LMDP-I, a detailed gender analysis was carried out and enclosed as a working paper. LMDP-II's Appendix 2 draws heavily on this, and updates it with data and rationale for the additional provinces and the additionality of climate change vulnerability issues.
2. The project design report articulates – or the project implements – actions with aim to:	This is the main thrust of LMDP-I and LMDP-II; LMDP-II integrates the issues of vulnerability to climate risks.
<ul style="list-style-type: none"> • Expand women's economic empowerment through access to and control over productive and household assets; • Strengthen women's decision-making role in the household and community, and their representation in membership and leadership of local institutions; 	The Project will take concrete measures, including mobilization of women livestock holders, as well as women using pastures for non grazing purposes, to ensure that women are represented in Pasture

<ul style="list-style-type: none"> • Achieve a reduced workload and an equitable workload balance between women and men. 	<p>Committees and all project institutions. Attention to underlying issues, such lack of awareness on PC mandate, lack of time due to inequitable workloads, will also be explored and addressed. See above.</p>
<p>3. The project design report includes one paragraph in the targeting section that explains what the project will deliver from a gender perspective.</p>	<p>There is more than a paragraph, reflecting a concerted efforts to include women in particular.</p>
<p>4. The project design report describes the key elements for operationalizing the gender strategy, with respect to the relevant project components.</p>	<p>Appendix 2 does this.</p>
<p>5. The design document describes - and the project implements - operational measures to ensure gender-equitable participation in, and benefit from, project activities. These will generally include:</p>	<p>There are provisions for a Gender/M&E and KM Manager and Specialist. There is at least 50% target in terms of grants for women groups for economic diversification. All of these measures are included in LMDP-I's Working Paper 7, which contains detailed guidelines for a Gender Strategy for LMDP-I and LMDP-II.</p>
<p>5.1 Allocating adequate human and financial resources to implement the gender strategy</p>	
<p>5.2 Ensuring and supporting women's active participation in project-related activities, decision-making bodies and committees, including setting specific targets for participation</p>	
<p>5.3 Ensuring that project/programme management arrangements (composition of the project management unit/programme coordination unit, project terms of reference for staff and implementing partners, etc.) reflect attention to gender equality and women's empowerment concerns</p>	<p>There is intent for all of these measures, as outlined in the Gender Strategy for LMDP-I.</p>
<p>5.4 Ensuring direct project/programme outreach to women (for example through appropriate numbers and qualification of field staff), especially where women's mobility is limited</p>	<p>Efforts will be made in areas that have low participation/ turn-out rates in consultations, to understand the reasons and encourage greater participation. This could include separate sessions for women, given the tendency for women not to speak up in the presence of men.</p>
<p>5.5 Identifying opportunities to support strategic partnerships with government and others development organizations for networking and policy dialogue</p>	
<p>6. The project's logical framework, M&E, MIS and learning systems specify in design – and project M&E unit collects, analyses and interprets sex- and age-disaggregated performance and impact data, including specific indicators on gender equality and women's empowerment.</p>	<p>The logframe contains sex disaggregated indicators. Sex- disaggregated data will be collected for M&E and RIMS and other studies and surveys. Appendix 2 sets out the qualitative and quantitative M&E, which will be used as much to take corrective action as for M&E.</p>

IFAD's targeting policy - checklist for design

Updated June 2013

	Design
1. Does the main target group - those expected to benefit most- correspond to IFAD's target group as defined by the Targeting Policy (poorer households and food insecure)?	The productive poor, the food-insecure and those at risk of losing their livelihoods due to climate change are primary target group.
2. Have target sub-groups been identified and described according to their different socio-economic characteristics, assets and livelihoods - with attention to gender differences?	Appendix 2 sets out an analysis, and the Working Paper 7 for LMDP-I also gives more details.
3. Is evidence provided of interest in and likely uptake of the proposed activities by the identified target sub-groups?	
4. Does the design document describe a feasible and operational targeting strategy in line with the Targeting Policy, involving some or all of the following measures and methods:	
4.1 Geographic targeting – based on poverty data or proxy indicators to identify, for area-based projects or programmes, geographic areas (and within these, communities) with high concentrations of poor people	On a number of measures, the LMDP-II will focus on the poorest oblasts in the country. Details of operational measures are set out in Appendix 2. In addition, one of the factors determining the size of grant allocated to PUU would be the poverty level in each specific area.
4.2 Direct targeting - when services or resources are to be channelled to specific individuals or households	There is direct targeting of milk value chain and diversified income generation activities at women groups.
4.3 Self targeting – when goods and services respond to the priority needs, resource endowments and livelihood strategies of target groups	The project is oriented around needs of communities expressed during consultations, during the formulation of LMDP and LMDP-II, and as well-documented in the literature. In a course of preparation of Pasture Management Plans, communities will identify and prioritize their needs.
4.4 Empowering measures - including information and communication, focused capacity- and confidence-building measures, organisational support, in order to empower and encourage the more active participation and inclusion in planning and decision making of people who traditionally have less voice and power	Appendix 2 sets out such measures, including how to identify the poor using the social passports system, to implement wealth ranking for validation of the poverty data, and how to check in case of mis-representation, as well as quotas for women – who often having less voice and power.
4.5 Enabling measures –to strengthen stakeholders' and partners' attitude and commitment to poverty targeting, gender equality and women's empowerment, including policy dialogue, awareness-raising and capacity-building	There are operational measures in Appendix 2 e.g. newsletters and linkages with other organizations active in policy dialogue; LMDP-II will provide an important evidence base for this.
4.6 Attention to procedural measures - that could militate against participation by the intended target groups	Special attention to be paid to moving towards more active participation of women despite targets.
4.7 Operational measures - appropriate project/programme management arrangements, staffing, selection of implementation partners and service providers	Appendix 2 sets out procedures intended to target the poor including checks on the social passport system, and validation through community based wealth ranking.
5. Monitoring targeting performance. Does the design document specify that targeting performance will be monitored using participatory M&E, and also be assessed at mid-term review? Does the M&E framework allow for the collection/analysis of sex-disaggregated data and are there gender-sensitive indicators against which to monitor/evaluate outputs, outcomes and impacts?	Yes to all.

Environmental and Social Review Note

Description of Project and components

3. The livestock sector accounts for about half of agriculture's contribution to the Kyrgyz Republic's GDP, and is one of the strongest components of the rural economy. Livestock products represent a substantial part of the diet, and as much as 20 percent of total food consumption in Kcal/capita. As in other countries in Central Asia livestock has been a safety net for the poorer segments of the rural population, and smallholders own over 90 per cent of livestock. Since 1995 livestock numbers have been increasing, particularly in recent years. This has increased pressure on pastures and created an imbalance in their utilization, with under-grazing of distant summer pastures and overgrazing of village/near-by pastures. This situation, together with insufficient quality feed in winter and early spring, has resulted in low livestock productivity, which is further reduced by disease, parasites, and poor animal and farm management. Correcting these nutritional, disease and management constraints can considerably increase sector output, with an immediate impact on household incomes and food security.
4. The goal of the LMPDII is to contribute to the reduction in poverty and enhanced economic growth in pasture communities. The development objective is to improve livestock productivity and enhance climate resilience of pasture communities reflected in improved and equitable returns to livestock farmers.
5. The LMDPII has four components: (i) Community Based Pasture Management and Vulnerability Reduction, (ii) Livestock Health and Production Services; (iii) Diversification and Market/Value Chain Initiatives, and (iv) Project Management.
6. The Community Based Pasture Management and Vulnerability Reduction component will take advantage of the conducive environment provided by the new Pasture Law, the national emergency response activities and climate change adaptation policies, and will support Pasture Users Unions and Pasture Committees in the design, development and implementation of community-based pasture management plans that fully integrate adaptation and DRR measures to increase the resilience of this sector to climate change.
7. The Support to Animal Health and Production Services component will facilitate the establishment of a viable and effective private sector animal health and livestock productivity support service in every community and will invest in the extension of national animal disease control programs and improvements in the education and training of vets.
8. The Diversification and Market/Value Chain Initiatives component will promote diversification of income sources in order to support rural livelihoods and build socio-economic resilience by reducing the risk of income loss caused by climate change. It will encourage and nurture new enterprises through which the weakest segments of the rural society – mainly women and youth – can build upon, improve, and expand existing value chains and develop alternatives sources of income.
9. The LMDPII will be implemented over a period of 5 years starting in 2013 and cover three additional provinces (Oblasts) i.e. Batken, Jalal-Abad and Osh, characterized by their high poverty level, vulnerability to climate change, and potential for development of the livestock sector.

Major site characteristics

10. The three additional oblasts are contiguous to the LMDPI ones (Naryn and Issyk-Kul) and extend to the west, bordering with Uzbekistan and Tajikistan. Together three oblasts have a combined area of almost 80,000 km², and a total population of over 2,900,000. Most of the population is ethnic Kyrgyz with ethnic Uzbeks constituting the major part of the remaining population.
11. Livestock production is the very important economic activity of the three provinces. Combined, they account for 51 percent of the nation's cattle population, 47 percent of the sheep and goat population, and 36 percent of horses.

12. Poverty in the Kyrgyz Republic is broadest and most severe in rural and mountainous regions that are vulnerable to climate change, and the additional oblasts are amongst the poorest in the country. See Annex II.

Issues in Natural Resource Management

13. With only 7% of the total land area suitable for arable cropping the approximately 9.2 million ha of pastures are an invaluable dimension of the Kyrgyz Republic's productive natural resources. Since livestock production is the dominant livelihood system outside the few major arable farming valleys, the rural population is heavily dependent on the productivity and conservation of these pastures – both as a source of income, and as a social safety net for poor households. Future additional agricultural growth and gains in rural incomes will depend greatly on the efficient use of these pasture resources. However, pasture conditions have deteriorated during the Soviet time from extremely intensive use, and during the recent past, with village and close-in (winter) pastures being severely overused and degraded, while the more remote summer pastures have been underutilized as a result of deteriorating access and associated infrastructure.

14. Previous pasture management practices have resulted in pasture degradation. Prior to 2009, fragmented management by government disrupted seasonal grazing. The fragmentation of responsibility for pastures between oblast administrations responsible for summer pastures, rayon administrations responsible for spring/autumn pastures and the local self-government body (LSGB) in each Ayl Okrug (AO) responsible for winter pastures, led to disruption of seasonal grazing routes, a lack of transparency in pasture allocation, inequitable access to pastures and insufficient investment in infrastructure to maintain access to pastures. In general, winter pastures have been over-utilized, while more distant summer pastures have been under-utilized, leading to species degeneration in some pastures. Degeneration of some winter pasture has progressed beyond a critical point and now requires long resting periods or reseeded.

15. The Kyrgyz Republic possesses 30% of the total water resources of Central Asia, mainly stocked in the rivers, glaciers, and snow massifs. The annual average volume of water totals 2,438 km³ including 50 km³ of surface river runoff, 13 km³ of potential reserves of ground water, 1,745 km³ of lake water and 650 km³ of glaciers. Most of the rivers of the country have a snow-and glacier-type of alimentation, and should the temperatures go up, their flow will increase, which has been observed over the last few years. During the period from 1973 to 2000 the total river flow increased by 6.3% compared to the preceding period, and in the next 20 years a further increase in flow by 10% has been forecasted based on worked-out models. On the longer term, largely due to the rapid melting of glaciers, while the country will likely have enough water for its own needs in the future, it may not be able to meet demand in its role as a critical supplier to the Central Asia region.

16. The varied geography and climate of Kyrgyzstan account for its high biodiversity – while the country makes up only 0.13% of world land, it hosts approx. 1% of the world flora and fauna. Abrupt change of habitat and straight removal of specimens of flora and fauna from nature has brought to the extinction of 11 species so far. Several medicinal and decorative plants are under threat of extinction due to over-collection. The current network of protected areas extends over approx. 1,200,000 ha, or 6% of the country.

17. According to the National Forest Registry of the Kyrgyz Republic (2003) forests cover approx. 8,700 km², with an additional 3,000 km² of “forest-related lands” (plantations, open and sparse woodlands, nurseries etc.). About 90% of all forests grow at altitudes between 900 and 2500 m above sea level. Main mountain forest tree species include spruce, juniper, and walnut. Riparian forests play an important regulation function along the shores of rivers and lakes. In the last thirty years it is estimated that forest cover has been reduced by at least 50%. The Kyrgyz Forest Service has stated a long-term objective of increasing forest cover from current 4.6 to 6% by 2025-2030, with a net gain of approx. 290,000 hectares of forest compared to 2003. Almost 1 million ha of forest land are used for grazing livestock.

18. Central Asia is a region assumed to become severely adversely affected by climate change, with more frequent droughts, heightened extreme weather conditions and melting glaciers. Research conducted during the preparation of the SNC show that over the last century the air temperature of the territory of the Kyrgyz Republic increased by 0,8°C. The GCM used by IPCC indicate that Central Asia is expected to experience an increase in mean annual temperature on average of 2°C by 2020 and 4/5°C by 2100. When it comes to precipitation, estimates foresee local increase and decrease in the different parts of the country on the short term, with general, sharp decrease after 2030-2040. Overall, an increase in winter precipitation and a decrease in summer precipitation are projected for Central Asia. The model also predicts a decrease in annual runoff of 12% by 2020, with a potential three-fold increase by 2050. These changes will result in increased incidence of drought, heat waves, and extreme weather events, bringing the danger, in the future, of greater water shortages and potential disputes over water resources in the wider region, which might have a serious impact on the regional geopolitical balance.

19. Climate change will also entail an increased exposure of poor rural communities dependant on the productivity of rain-fed pastures to external climate-induced shocks. It is thus critical to build up the resilience of vulnerable communities by supporting, testing, adopting and spreading measures and technologies that favor the adaptation of livestock and pastures to forecasted climate changes and decrease vulnerability to extreme events and natural hazards.

Potential Social and Environmental Impacts and Risks

20. No specific detrimental issues in natural resource management are associated with the Project. To the contrary, the introduction of community based pasture management based on the new pasture law should have a considerable beneficial environmental and natural resource impact. The pasture law reconnects management of summer, spring/autumn and winter pastures, provides more equitable and transparent allocation of pasture rights, provides a mechanism whereby stocking rates can be better aligned with pasture carry capacity and is expected to considerably increase generation of revenues for investment in pasture rehabilitation. This, together with the all-inclusive nature of the local pasture committees, should ensure a reversal of the current degradation of pastureland and a long-term sustainable pasture use with equitable access for all users.

21. The Project would provide grants for investments in pasture improvement and restoration, including a more sustainable management of water, soil, and biodiversity resources. Environmentally friendly and low-impact technology will be used whenever possible (natural materials, renewable energies etc), and local varieties of seeds would be selected, with the dual purpose to stimulate domestic seed producers and traders, and conserve local biodiversity. All these measures should lead on the long term to an overall improvement of the environmental and ecological conditions of pasture landscapes, with positive consequences and feedback on connected ecosystems (forests, freshwater bodies, riparian and high-altitude habitats).

22. The Project will support the construction of infrastructure to increase access to summer pastures away from the immediate vicinity of the villages. The investments would be identified in the local pasture management plans and would be mainly small-scale and rehabilitative in nature. Individual interventions are expected to have insignificant negative environmental impact in any one location and would even have a positive environmental impact to the extent they reduce the pressure on degraded winter pastures close to villages.

23. The diversification and improved market/value chain component would provide matching grants for investments in small-scale milk collection/cooling and women's processing that would have minimal impact on the environment. Nevertheless, environmental assessments will be built into the Project's formal operational procedures governing investment decision making as documented in the Project Implementation Manual. When it comes to economic diversification, the project will only promote and take into consideration those actions that have a positive or neutral impact on the environment (renewable energies, organic horticulture etc.). However, even these investments will be subject to the environmental assessments and procedures described above.

Environmental Category

24. In line with IFAD Guidelines on Environmental Assessment, the Project has been classified as Category B. Few, if any, negative environmental impacts are expected to result from the Project. Investments in pasture improvements and infrastructure, as well as adaptation and increased resilience, and measures for the sustainable management of natural resources (water, soil, biodiversity) will result in positive benefits. The Project is expected to reduce pressure on natural resources through the introduction of more environmentally sound pasture management practices.

Further Information Required

25. No further information is required

Recommended Features of Project Design and Implementation

26. Given the small scale and rehabilitative nature of the interventions, and the increased focus on the sustainability and climate proofing of infrastructures and other investment measures, no significant negative or irreversible environmental impacts are expected from the project and, as noted, measures have been incorporated into the design to mitigate potential risks.

Monitoring Aspects

27. The Community Development and Investment Agency (ARIS) would be responsible for undertaking environmental assessment of the proposed pasture improvement and infrastructure investments as part of the grant screening procedure, and for ensuring that the requirements of the environmental legislation of the Kyrgyz Republic and IFAD Guidelines on Environmental Assessment are adhered to in order to avoid negative impacts, and, when and if necessary, introduce appropriate mitigation measures.

28. In the course of its supervision missions IFAD would regularly review the relevant environmental assessment documents and implementation of recommended measures for randomly selected investment projects.

Appendix 13: Contents of the Project Life File

Concept Note

OSC Issues Paper

OSC Minutes

Design Completion – Terms of Reference

Design Completion – Aide Mémoire

Working Paper 1 – Project Costs and Financing

Working Paper 2 – Economic and Financial Analysis

Working Paper 3 – Climate Change and Livestock and Pasture Management

Working Paper 4 – Development of an Early Warning System for Weather and Hazards Prediction
geared to the livestock and pasture sector

Working Paper 5 – Overview of the Pasture and Livestock Sectors and Market/Value Chain Initiatives

Working Paper 6 – Climate Change Impact on Pastures and Livestock Systems

Working Paper 7 – Lessons Learned

LMDP Project Implementation Manual (PIM)

Environmental and Social Review Note (ESRN)