

## **Republic of Tajikistan**

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### **Livestock and Pasture Development Project**

### **Project Completion Report**

Main report and appendices

Mission date: 25<sup>th</sup> November-6<sup>th</sup> December 2018  
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NEN  
Programme Management Department



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## Currency equivalents

Currency Unit	=	TJS
US\$1.0	=	TJS 9.43

## Weights and measures

1 kilogram	=	1000 g
1 000 g	=	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**

ACTED Agency for Technical Cooperation and Development

AWPB Annual Work Plan and Budget

BDS Business Development Services

Central Asian Countries' Initiative on Land Management

CF Community Facilitator

CIG Common Interest Group

EIRR Economic Internal Rate of Return

FSC Food Security Committee

GOT Government of Tajikistan

HH Household

IFAD International Fund for Agricultural Development

IGA Income Generating Activity

IGS Income Generation Specialist

IOM International Organization for Migration

INGO International Non-Governmental Organisation

JC Jamoat Council

KLSP Khatlon Livelihoods Support Project

LPDP Livestock and Pasture Development Project

LPDP II Livestock and Pasture Development Project II

M&E Monitoring and Evaluation

MOA Ministry of Agriculture and Environmental Protection

MOF Ministry of Finance

NDS National Development Strategy

NGO Non-Governmental Organisation

PMP Pasture Management Plan

PIM Project Implementation Manual

PMU Project Management Unit

PSC Project Steering Committee

PUA (or PUU) Pasture Users Association

PUAB PUA Board

PUU Pasture Users' Union

RIMS Results and Impact Management System

SDR Special Drawing Right(s)

SVI State Veterinary Inspection

TA Technical Assistance

TOR Terms of Reference

UNIDO United Nations Industrial Development Organization

US\$ United States Dollar

VO Village Organization

WIGG Women Income Generating Group

## Map of the project area

[To insert map click the link **IFAD maps** below. Open picture and copy/paste here.]

[IFAD maps](#)



## Project at a glance

Country					
Project Name					
Key Dates					
IFAD Approval	Signing	Effectiveness	Mid-Term Review	Original Completion	Actual Completion
11/05/11	21/07/11	05/08/11	09/10/15	30/09/17	30/09/18
Mid-term Review	Interim Evaluation	Original Loan Closing	Actual Loan Closing		
	NA	31/03/18	31/03/19		
IFAD Financing					
Loan	SDR million		% disbursed		
Grant	SDR million	9.3	% disbursed	94%	
Actual Costs and Financing (USD '000)					
Component	IFAD	Cofinancing	Beneficiaries	GOVT	Total
Institutional Development	1.045.888,95	-	-	-	1.045.888,95
Livestock and Pasture Development	9.255.973,37	-	688.752,98	1.075.528,80	11.020.255,15
Income Generating for Women	688.179,93	-	26.638,91	32.830,49	747.649,33
Project Management	1.561.192,77	-	338,53	59.066,87	1.620.598,17
Total	12.551.235,02	-	715.730,42	1.167.426,16	14.434.391,60
Remarks					
Indicate cofinancing partners, actual amounts, and amount committed for each as at appraisal.					
Number of Beneficiaries					
Total	Direct	Indirect	Women	Other	Other
145,600	145,600		71,344		
Project Objective					
The development goal of the Project was to contribute to the reduction of poverty in the Khatlon Oblast. Its development objective was to increase the nutritional status and incomes of around 22,400 poor households living in the seven districts of Baljuvon, Farkhor, Khovaling, Muminobad, Shurobad, Temurmalik and Vose , by enhancing livestock productivity in a sustainable manner. The outcomes expected from the LPDP included the following: (i) enhanced livestock productivity and production; (ii) enhanced productive capacity of pastures; and (iii) increase in women's ability to process and market livestock products.					
Country Partners					
Executing Agency	Ministry of Agriculture and Environmental Protection				
NGOs/civil society					
Other					

## Executive Summary<sup>1</sup>

A Project Completion mission of the Livestock and Pasture Development Project (LPDP) took place in Tajikistan from 25 November to 6 December 2018. The mission held consultations in Dushanbe with senior officials from the Ministry of Agriculture (MoA), the State Committee of Investment and State Property Management, the “Pasture Meliorative Trust” and the National Veterinary Association. Field visits to the Project area took place from 28 November to 1 December 2018 where the mission met with male and female smallholder farmers, representatives from the district (Hukumat) and sub-district (Jamoat), Pasture Users’ Unions (PUUs) and Pasture Users’ Associations (PUAs), service providers, the Project Management Unit (PMU) and its Regional Office staff.

The Livestock and Pasture Development Project was the second IFAD investment in Tajikistan. The Project was approved by IFAD Executive Board in May 2011, became effective in August 2011, was completed on 30 September 2018 and was closed on 31 March 2019. It was financed by an IFAD grant of ca. US\$ 14.6 million (SDR 9,300,000) or 92% of total project cost; a contribution by the Government of about US\$ 0.4 million (3% of total costs); and a beneficiaries’ contribution equivalent to approximately US\$ 0.7 million or 5% of total project costs. Initially, the project had a financing gap of about US\$ 3.4 million, compared to the appraisal value, which was expected to be filled by IFAD from the 2013-15-allocation cycle; however, the additional financing did not materialize as it was transferred to a second phase (LPDP II).

The development goal of the Project was to contribute to the reduction of poverty in the Khatlon Oblast. Its development objective was to increase the nutritional status and incomes of around 22,400 poor households living in the five districts of Baljuvon, Khovaling, Muminobod, Shurobad and Temurmaliq<sup>2</sup>, by enhancing livestock productivity in a sustainable manner.

The project consisted of three principal complementary components and the required support for project management and implementation as follows: (i) Institutional Development; (ii) Livestock and Pasture Development; (iii) Income Generation for Women; and (iv) Project Management. The outcomes expected from the LPDP included the following: (i) enhanced livestock productivity and production; (ii) enhanced productive capacity of pastures; and (iii) increase in women’s ability to process and market livestock products.

Overall **project achievement** at completion is rated **satisfactory**. The project succeeded in: (i) piloting the PUU model and showcasing best practices in pasture management, contributing to the revision of the Pasture Law; (ii) reducing overgrazing and restoring heavily degraded pastures with 60% of District pasture land under protection; (iii) enhancing village communities’ empowerment through their participation in decision-making processes while strengthening their role in controlling the village natural resources (pasture lands); and (iv) increasing village communities’ resilience to climate change.

On the quantitative aspect, the project achieved: (i) an EIRR estimated at 23.9%; (ii) increase in agriculture productivity by 10-20%; (iii) increase in women’s income by 20% leading to diet improvements within the household; and (iv) increase of average targeted HHs income by 41% for around 60 to 70% of beneficiaries. It is estimated<sup>3</sup> rural poverty in the project area has been reduced, at a scale largely in line with appraisal expectations.

Project **relevance** is rated **satisfactory**. LPDP has strategically addressed the priority number one concern of the Khatlon Region, i.e. pasture management. This strategic choice was relevant, it led to a simple design and a very focused project with most financial resources dedicated to pasture management which generated economies of scale and contributed to improving project efficiency. Livestock is a major contributor to livelihoods in the project area; it provides 41% of households’

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<sup>1</sup>Mission team composition: Mr. Mikael Kauttu, IFAD Country Programme Manager, Ms. Stefania Gnoato, Team leader and programme management specialist, Mr. Alban Bellinguez, Livestock specialist, and Ms. Dajana Grandic, Economic and financial specialist (mission dates 24 October-4 November 2018).

<sup>2</sup> The list of districts was revised at start-up, as explained later in Section C3.

<sup>3</sup> Actual quantitative data was not made available by the Impact Evaluation.

incomes, fuel<sup>4</sup> for cooking and heating, manure for fertilization of crops. Enhancing the productivity of livestock therefore contributed to improving the livelihoods of rural households in the region. In light of the continuous increase of the scale of pasture degradation, and the need to preserve this resource base as essential for the livelihoods of the local communities, the project focus on pasture management remains increasingly relevant.

Project **effectiveness** is rated **satisfactory**. Overall cumulative output achievements for Component 1 are 105%, 111% for Component 2 and 101% for Component 3. The project reached 23,840 households (106% of appraisal target), benefitting 180,777 individuals (145,600 at appraisal) of which 49% were women. The project financing agreement was extended by one year and completed with a total disbursement rate of 96%.

**Efficiency** of LPDP is rated **satisfactory**. Financiers' contributions were timely and adequate, quality of project management, partners' performance and quality of implementation support by IFAD were all assessed as satisfactory.

Project **sustainability** is rated **satisfactory**. The benefits in pasture management improvement generated by the PUU model have been acknowledged by the local communities, together with the services it provides through mechanized equipment and the construction and maintenance of communal infrastructures. Remarkably, PUUs are able to finance sub-projects for the construction of bridges, water points, reparation of roads from their own resources, without any external support showing good sustainability measures being in place. Others are likely to leverage resources for post-project investments from Districts regular budgets.

Private Service Providers (veterinary centers) established by the project confirmed having sufficient client demand and turnover to be able to operate profitably. However, the Government of Tajikistan (GoT) approved a resolution on 29 December 2017 transferring the function of the State Veterinary Inspection (SVI) to the newly established Food Security Committee (FSC). Pursuant to the Resolution, all private veterinarians became official employees of the FSC and their monthly salaries are paid from the FSC budget. Thus, the effort to establish a private sector veterinary service came to naught, most likely leading to significant inefficiencies in development of the sector. Moreover, business and financial management training had been suboptimal. The same was found in Women Income Generating Groups (WIGGs) which received training occasionally rather than systematically.

One major outcome of the project was the piloting of PUUs. The PUUs are organized groups composed by all livestock farmers living in the same village, established to set up and implement efficient pasture management arrangements, including pasture protection and rotation systems, with the aim of reversing the pasture degradation process and restoring their productivity. The PUU model generated significant lessons that can be shared at the regional level, and beyond, and can up-scale the LPDP experience. The provision of mechanized equipment contributed to improving productivity of labour, enhancing fodder cultivation and conservation, and also improving communal infrastructures. The establishment of PUUs and introduction of Pasture Management Plans (PMPs), including pasture protection and rotation reduced overgrazing, erosion, and restored carrying capacity and productivity. However, when the degradation process is too advanced, only reforestation and land restoration can be effective.

The PUU/PMP model was successful because the mobilization mechanisms developed by the project were effective in harnessing the self-governing potential of communities towards addressing the challenges posed by environmental degradation and climate change, in the same time as policy dialogue supported by the Project contributed to a conducive legal framework (the 2013 Pasture Law). Working in parallel on the pasture policy environment on the one hand, and on grass-root level physical activities on the other, was a key driver to success.

The project failed to develop and implement a strategy that could lead to reduction in animal inventories, which is necessary considering the already existing pressure on natural resources. For similar projects in the country, or the region, the strategy should put more emphasis on productivity improvement (capacity building of farmers, animal health, genetics) and also on diversification of incomes, including outside the livestock value chain. The subsequent LPDP II has applied this lesson

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<sup>4</sup> Given the quasi absence of forests, the main source of combustible fuel used for cooking and heating is dry cow dung.

by implementing more activities aiming at animal productivity improvement, in parallel to pasture management related activities.

The targeting strategy adopted by the project was successful in reaching poor men and women within vulnerable communities and households. This approach is being replicated by LPDP II with meaningful results thus far.

The project exit strategy, related to national-level policy aspects, is being seamlessly implemented under the on-going LPDP II. Notwithstanding, the government should follow-up on the Ratification of the amendments to the Pasture Law. Additionally, District Administrations should ensure the collection of PUUs investment plans for consideration of financing under their regular budgeting processes.

## A. Introduction

1. A Project Completion mission of the Livestock and Pasture Development Project (LPDP) took place in Tajikistan from 25 November to 6 December 2018. The mission held consultations in Dushanbe with senior officials from the Ministry of Agriculture (MoA), the State Committee of Investment and State Property Management, the “Pasture Meliorative Trust” and the National Veterinary Association. Field visits to the Project area took place from 28 November to 1 December 2018 where the mission met with male and female smallholder farmers, representatives from the district (Hukumat) and sub-district (Jamoat), Pasture Users’ Unions (PUUs) and Pasture Users’ Associations (PUAs), service providers, the Project Management Unit (PMU) and its Regional Office staff.
2. The project became effective on 5th August 2011; the Mid Term Review and the last supervision took place, respectively, in October 2015 and October 2018.
3. The mission wishes to express its appreciation to the representatives of the MoA and other partners who participated in the Completion mission and contributed to discussions during field visits and in meetings. The mission would also like to thank the State Enterprise Project Management Unit (SEPMU) director, project coordinator and PMU staff for their excellent collaboration in preparing the mission, their availability and quality of the exchanges.
4. The mission findings and recommendations were validated at a stakeholders workshop held in Dushanbe on 5 December 2018, attended by representatives of the MoA, State Committee of Investment and State Property Management and project staff. A wrap-up meeting with the Director of SEPMU was organized in Dushanbe on the same day.

## B. Project description

### B.1. Project context

5. **Socio-Economic and Political Situation.** Tajikistan is a landlocked country with an estimated population of 7.459 million. The country is sparsely populated with mountainous areas accounting for about 93% of the total land area making it one of the least accessible countries in the world. Tajikistan is a highly agrarian society, with 77% of the population residing in rural areas. The rural population depends mainly on agriculture, livestock and remittance incomes for their sustenance.
6. Tajikistan’s remoteness, difficult terrain, crumbling Soviet style infrastructure, poor transport infrastructure, deteriorating education and health systems, and lack of Government resources are significant barriers to rural development. The country is highly vulnerable to external economic shocks because of its dependence upon employment in Russia. To compound its difficulties further it is regularly affected by natural disasters such as floods and droughts. Remittances from labour migrants account for as much as 25% of total household income. In 2008 it was estimated that over one million people or at least half of the country’s labour force was working outside the country. While the Government has taken several measures to improve rural livelihoods through a programme of land reform which provides people inheritable usufruct rights, freedom to farm, writing off the cotton debt and some infrastructure development, many problems still remain.
7. **Description of Target Area.** Livestock ownership is a key coping strategy for the smallholder farmer in the project area. Over the last decades, the livestock inventories have grown to levels higher than in the immediate pre-independence period. Furthermore, rearing livestock is an activity in which nearly the entire rural population engages. Livestock rearing relies primarily on grazing supplemented by limited cultivated feed crops and minimal concentrates and the rise in inventories coupled with the fall in feed supplies mean that feed per animal has fallen dramatically along with livestock productivity. The productivity of the livestock is consequently

very low (less than 3 liters of milk per cow). Other constraints than feeding, that exacerbate this poor animal productivity are (i) poor genetic potential of animals due to the absence of breeding strategies and genetic improvement, and excessive inbreeding; (ii) inadequate access to animal health services and (iii) and inappropriate livestock rearing infrastructures (poor animal housing or fodder conservation premises).

8. On top of this, the project area, because of its poor vegetal cover, its topography and the nature of soils, is very sensitive to overgrazing and excessive trampling by animals, which results in severe land degradation and erosion processes, sometimes irreversible, that further jeopardize the feeding condition of animals, leading to a vicious circle process.
9. With the growing number of livestock, emergence of commercial livestock farmers and further deterioration of natural pastures, the focus on pasture management reforms resulted in adoption of the Pasture Law in March 2013. That law serves as a foundation for the beginning pasture management decentralization reforms occurring on small scale in selected areas. However, experience has shown that it is imperative to facilitate the reform process with further advancement of the policy and legal framework in pasture management.

## **B.2. Project objectives**

10. The main challenge that the project was setting out to address is the ongoing pasture degradation caused by excessive animal numbers and inadequate management. The low productivity of animals can be considered a secondary challenge since it leads to an excessive size of animal inventories (to compensate their poor productivity), and results in poor livestock incomes.
11. The development **goal** of the Project was to contribute to the reduction of poverty in the Khatlon Region. The development **objective** was to increase the nutritional status and incomes of around 22,400 poor households by enhancing livestock productivity in a sustainable manner. The outcomes expected from the LPDP included the following: (i) enhanced livestock productivity and production; (ii) enhanced productive capacity of pastures; and (iii) increase in women's ability to process and market livestock products.
12. Project main outputs aimed to: (i) develop community organizations; (ii) strengthen institutions; (iii) strengthen private sector services; (iv) improve pasture management; and (v) enhance households' nutritional status and women's income.

## **B.3. Implementation modalities**

13. The Livestock and Pasture Development Project was a seven-year project financed by an IFAD grant of ca. US\$ 14.6 million (SDR 9,300,000) or 92% of total project cost; a contribution by the Government of about US\$ 0.4 million (3% of total costs); and a beneficiaries' contribution equivalent to approximately US\$ 0.7 million or 5% of total project costs. Initially, the project had a financing gap of about US\$ 3.4 million, compared to the appraisal value, which was expected to be filled by IFAD from the 2013-15-allocation cycle; however, the additional financing did not materialize as it was transferred to a second phase (LPDP II).
14. The Project Management Structure of LPDP consisted of several state, private, and community institutions which were engaged by and/or formed under the project. These comprised the following:
15. **Ministry of Agriculture (MOA)** with the overall responsibility for management of the project on behalf of the Government of Tajikistan.
16. **Project Steering Committee (PSC).** The PSC provided policy guidance and facilitated coordination with other development programmes and projects and maintained oversight on the Annual Work Plan and Budget (AWPB). The Deputy Minister of Agriculture for Livestock was the Chairman of the PSC. Its other members included senior representatives of the Ministry of Finance, Ministry of Agriculture, the State Committee of Investment and State Property

Management, the State Committee for Land Management and Geodesy, representative of the State Committee for Women's Affairs and Families. The PSC has been meeting every six months to review Project progress and approve its annual work plan and budget, including the annual financial statements.

17. **Project Management Unit (PMU).** A PMU was established in Dushanbe under the supervision of the MOA taking responsibility for effective implementation arrangements, start-up activities, proper disbursement, procurement, contracting of project partners, financial management, monitoring, evaluation and knowledge management, communications and dissemination. The PMU has been responsible for overall project progress reporting, liaising with other agencies involved in the project and arranging for supervision by IFAD missions. Additional responsibilities of the PMU included financial management, preparing consolidated financial statements and engage services of specialised agencies for auditing, Management Information System (MIS) and setting-up of accounting system, training and capacity building and the function of Community Facilitator. A sub-office of the PMU was established in Kulyab to facilitate Project field management, liaise with local government and Project beneficiaries.
18. **Community Facilitator (CF).** Mobilisation and capacity building of community organizations were implemented by the Community Facilitator (CF), initially 3 INGOs and later 2 NGOs, contracted under the Project (see Section E.3 for more details). The CF, with the assistance of PMU staff, supported the planning process, implementation and monitoring of the priority investments. Specifically, CFs supported the communities in undertaking the preparation and implementation of 203 Community Livestock and Pasture Management Plans (CLPMPs), and worked closely with the communities to establish and strengthen Community Interest Groups (CIGs), Pasture Users' Unions (PUUs) and Women's CIGs (WIGGs).
19. **Pasture Users' Unions (PUUs).** Around 203 village-level PUUs were established in accordance to the relevant new legislation on pasture. PUU members comprised all farm households (one member representative per each household), with and without livestock, who expressed their interest in joining the group. Each PUU elected a Board (PUUB) at a general village meeting where a third of the PUUB members were required to be women. PUUs were Project's focal points and were instrumental for introducing the Project to the communities and its participatory identification of the target beneficiaries, as per project design criteria.
20. **Common Interest Groups (CIGs) and Women Income Generating Groups (WIGGs).** Smallholder households interested in participating in livestock development activities were organized by PUUs into 151 CIGs and 110 WIGGs. Specifically, CIGs were formed according to each individual project activity, i.e. fodder promotion and production, sheep breeding, private veterinary services and women's income generating initiatives. While WIGGs were formed in the framework of Income Generation Activity packages (i.e. poultry, small ruminants, beekeeping, milk and wool processing). These groups were duly formed according to the procedures and targeting criteria set at design.
21. **Hukumats** (district administration) and **Jamoats** (sub-district administration). Hukumats representatives had the central role of establishing the PUUs and overseeing their function while Jamoats were more closely involved in mobilizing communities for the PUUs establishment, CIGs and WIGGs formation and in monitoring project activities.

#### B.4. Target groups

22. The Livestock and Pasture Development Project covered selected districts of the Khatlon Region which is one of the poorest regions of the Tajikistan. In collaboration with the Government, five districts were selected for the Project in South Khatlon. These include Khovaling, Baljuvon, Muminobod, Shurobod and Temurmali<sup>5</sup>. The primary target groups of the Project were expected to be the following: (i) smallholder livestock farmers; (ii) private

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<sup>5</sup> These districts are different from those selected at design. Please refer to section C.3 for more details.

veterinary service providers and small scale entrepreneurs with the potential to provide services to smallholder farmers; and (iii) women headed households and women belonging to poor households. The ultimate Project beneficiaries were supposed to be all those expected to be living on less than US\$ 2 per capita per day, which at the time of design comprised 78% of the total population of Khatlon.

23. The Project was to adopt the following targeting approach: (i) geographical targeting for selection of the Jamoats and villages with the potential for livestock and pasture development; (ii) household targeting for selection of households which met the Project's poverty and gender criteria; and (iii) gender targeting for selection of women for specific Project activities through fixing special quotas for their inclusion. The initial identification of villages was to be further refined depending upon community willingness to participate in Project activities and abide by its terms and conditions. A participatory approach at the village level was expected to ensure the inclusion of eligible households who met the poverty, capacity and the gender criteria.

## C. Assessment of project relevance

### C.1. Relevance vis-à-vis the external context

24. Relevance is rated **satisfactory**. The rationale and justification for LPDP was formulated in 2010, but remains fully relevant to today's context, and for some aspects even more relevant than at design stage, across the technical, socio-economic and institutional domains.
25. The PCR concurred that the interventions carried out through LPDP are in line with the priorities and needs of the project target groups as well as the policy objectives of IFAD and the GoT.
26. **Alignment with GoT Policies and Objectives.** LPDP was designed in a participatory manner with the GoT, and the project's objectives were developed to be consistent with the GoT's strategy for poverty alleviation, rural development, and economic growth.
27. The project was fully aligned to the GOT National Development Strategy (NDS) 2006-2015 which aimed to improving public administration, developing the private sector and attracting investment, and developing human potential. The NDS also provided the Government's principal guidance for addressing the Millennium Development Goals.
28. LPDP was aligned to the country rural development and poverty alleviation strategy, specifically the Poverty Reduction Strategy 2010-2012 (PRSIII) which aimed at promoting sustainable improvements in living standards of vulnerable groups through: (i) public administration reform, macroeconomics, investment climate, private sector, regional cooperation and global economic integration; (ii) food security, agriculture, infrastructure, energy and industry; and (iii) health, education, water and sanitation, housing, and social welfare.
29. LPDP was further aligned to the Government "Concept for Agrarian Policy" in the Republic of Tajikistan (2008) and its objective is to achieve the country's food security by 2015 for the main food stuffs as well as to increase incomes of agricultural producers through improved performance (land reforms, development and modernization of subsectors including crops, livestock, and horticulture). Secondly, it was consistent with the National Food Security Programme (2009) which defined the main agriculture priorities for the period 2007-2015 as: (i) diversification and increase in production; (ii) development of export-oriented crops; and (iii) development of rural businesses (agriculture and non-agriculture).
30. The priorities set forth in the NDS and PRS III with their focus on food security, agriculture, infrastructure, and cross-cutting issues such as environment, institutional reform, gender equality, are still highly relevant in the current country macro-economic context. In particular, the project extensive response to the Government "Concept for Agrarian Policy" (2008) and its objective to achieve the country's food security by 2015 for the main food stuffs (and



agricultural producer's income increase through land reforms, development of subsectors including livestock) are still significantly relevant.

31. Tajikistan has dedicated efforts to create an enabling environment and provide an institutional framework for the implementation of reforms on pasture management. The first "Pasture Law" was adopted in 2013, just before the project started. The main feature of the law is the creation of Pasture Users' Unions, at village level. The PUUs, and the Pasture Management Plans (PMPs) are the two pillars of a community-based pasture management system, aimed at protecting the resource base and improving its productivity at the same time. The entry into force of this law created an opportunity for the implementation of the project: LPDP supported the formulation and adoption of the law, but was also the first implementer of the law at field level; it has piloted and showcased the PUU/PMP model in real conditions, at a scale which is significant enough (203 villages) to draw lessons and conclusions.
32. **Priorities and Needs of the Project Target Groups.** The project was highly relevant in terms of addressing the needs of economically active smallholder farmers in Tajikistan, given the high levels of rural poverty in the focal areas at the time of project design. Specifically, LPDP focused on the following physical and socio-economic challenges faced by the target groups:
  - (i) **Physical context:** The Eastern Khatlon area, because of its poor vegetal cover, its mountainous topography and the nature of the soils, is extremely subject to erosion. This erosion leads to a progressive loss of vegetal cover, to the creation of ravines, and in the most affected areas even to landslides. This phenomenon affects not only the productive potential of pastures, but also the biodiversity and the security of populations. One of the main root causes of erosion is overgrazing, and excessive trampling by animals, whose numbers largely exceed the carrying capacity of pastures. This is exacerbated by the absence of management mechanisms for collective pasture, and by the insufficient conservation of fodder for winter season. Pasture, especially those in the vicinity of human settlements, are therefore subject to continuous grazing, without sufficient recovery periods. As of today, the scale of this pasture degradation phenomenon keeps increasing, and the project focus on pasture management is therefore increasingly relevant.
  - (ii) **Socioeconomic context:** On the other hand, because of the mountainous environment and the remoteness of the area, livestock keeps a comparative advantage if related to other economic activities. The local livestock systems being primarily based on pasture, makes thus preserving this resource base essential for the livelihoods of the local communities.

## C.2. Internal logic

33. The internal logic adopted by the project was very efficient. The LPDP Appraisal Report reflects a good understanding of the context of development and the specific constraints of livestock and pasture. Livestock is a major contributor to livelihoods in the project area, as it provides 41% of households' incomes, fuel<sup>6</sup> for cooking and heating, manure for fertilization of crops. Enhancing the productivity of livestock therefore contributes to improving livelihoods of rural households in the region.
34. Livestock productivity is based on three pillars: feed, health and genetics, which need to be simultaneously improved in order to obtain a significant impact on productivity. LPDP has addressed the priority number one concern in Khatlon Region, i.e. pasture management. This strategic choice was relevant; it led to a simple design and a much focused project. Remarkably, most of the project budget was dedicated to pasture management which generated economies of scale and contributed to improving project efficiency.

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<sup>6</sup> Given the quasi absence of forests, the main source of combustible fuel used for cooking and heating is dry cow dung.

35. The adverse effect of this strategic choice is that, on the other hand, the project had limited budget for interventions on animal genetics (none on goat and cattle, some on sheep) and on animal health. Ultimately, this negatively affected progress on animal productivity, despite investments on feeding and pasture. The limited prospects with investment in genetics and health were however predicated by the undeveloped state of the veterinary services, which the project should probably have addressed first.
36. In hindsight, a weakness in the project's logic was the assumption that increased livestock numbers (expected outcomes mentioned in the logframe (30 % of small farmers reporting increased head of cattle)) could go hand in hand with highly satisfactory increase in pasture conditions due to improved pasture management. Reduction in numbers was indeed sometimes observed in similar cases, but not systematically, especially when livestock's primary role is asset savings.
37. Finally, pasture management activities remain relevant to address pasture degradation and improve fodder production in areas where erosion has not yet reached a point of non-return. In some parts of the project area, land degradation and erosion processes have reached a level where improving pasture management is no longer a solution, as only soil conservation techniques and reforestation could lead to significant results. In these specific situations, the LPDP approach is unfortunately no longer relevant.
38. LPDP gender-focused interventions were designed following the implementation modality of a stand-alone component, i.e. Income Generation for Women (Component 3), in response to the problem diagnostic undertaken at design whereby women's participation resulted as the main threat to project achievements. While opting for a stand-alone component, i.e. earmarking resources to ensure women's participation in the project, seems to have worked efficiently, the mainstreaming and integration of gender across components through the introduction of a comprehensive gender strategy could have yielded more cost-effective and efficient results. In addition, it would have placed gender higher in the 'Theory Of Change' paradigm.

### C.3. Adequacy of design changes

39. The main changes made in the course of project implementation, were the following:
40. **Change in geographic scope.** At the time of project start, following a request by the GOT, the geographic scope of the Project was amended to replace the six cotton districts identified at design (i.e. Pyanj, Rumi, Vakhsh, Kubodiyon, Shahritus and Qabodiyon) with other districts where livelihoods were more dependent on livestock production situated in the mountainous area of Kulyob. Accordingly, the request was endorsed by IFAD as the proposed geographic area was more in line with the project core rationale. Thereafter six new districts were selected in the Khatlon Region (i.e. Farkhor, Khovaling, Baljuvon, Muminobod, Vose and Temurmaliq), then further increased to seven following IFAD's request to include Shurobod as highly relevant to the project focus on livestock and pasture, and readier for implementation having already been part of the Khatlon Livelihoods Support Project. In the course of implementation, Vose and Farkhor districts were dropped from LPDP and moved to LPDP II due to constraints in financial resources.
41. **Changes in number of target villages.** According to LPDP design the project was supposed to support 22,400 HHs (80% of the total 28,000 HHs in the region) from 100 villages. However, with the changes occurred in the geographic scope and selection of the final five districts, the total number of villages eligible for project support increased to 200, without changing the outreach target.<sup>7</sup> In the same time, for purposes of efficiency in village mobilisation, the minimum nr of HH was increased from 20HH to 50HH.
42. Under Sub-component 1.1, LPDP was supposed to support not only PUUs, but also Village Organizations (VOs). VOs are village level community organizations that were established

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<sup>7</sup> The size of villages in the final five districts was significantly smaller.

- through the Law on Public Self-Initiative Bodies. Their scope of intervention covered all aspects related to local development. All households are generally members of the VOs, which is also the case of PUUs. In order to avoid duplication of efforts, the project chose to support PUUs, thus remaining focused on pasture management issues. This decision can be considered as appropriate.
43. In the initial design, demonstrations were supposed to be implemented only under Sub-component 2.1 (strengthening private sector services) and showcase cultivation and conservation of fodder (alfalfa, sainfoin, etc.). However, in addition to these demos and in order to convince communities that protection of degraded pasture could restore their productive potential, 120 demonstration of pasture protection were established through the provision of material for fencing, following the recommendation of the international Technical Advisor on pasture. Although it is difficult to draw conclusions on the efficiency of such demonstrations, in some villages they contributed to persuade PUU members on the advantages and relevance of this technique. Some PUUs have then up-scaled and applied this technique to larger portions of their territory, without fencing.
44. As per the project design, LPDP was initially supposed to establish 72 veterinary points/clinics (construction of premises, equipment and training of 3 veterinarians per clinic) under Sub-component 2.1. It quickly appeared that this target was not achievable within the available budget, and also that such number of clinics was not necessary to achieve a reasonable coverage of the area. In March 2014, the supervision mission recommended to adjust this target and reduce it to 24 clinics, with 2 vets per clinic instead of 3. As explained further in the paragraph on outcomes, this number was sufficient to achieve a significant level of access to veterinary services.
45. In the initial project design, PUUs were supposed to develop Pasture Management Plans (PMPs) as envisaged by the 2013 Pasture Law. However, in the course of implementation, PMPs were changed to Community Livestock and Pasture Management Plans (CLPMPs) which widened the initial PMP idea to include a community-based planning process to identify constraints and develop projects related to other aspects of livestock development other than pasture. This change allowed the project to introduce a participatory planning process for all project activities and was therefore highly relevant.
46. The original project design had made a provision, within Sub-component 2.2, to support locust control activities in case of significant invasion. This support was dropped after the Mid Term review (2015) since locusts were more a threat in the initially envisaged project area (West of Khatlon), than in the new one. In addition, at the time of the MTR, other development partners had started to address the locust problem (FAO, JICA) and a State Enterprise, with a dedicated budget, had been established to control locust. Furthermore, this activity was assessed as not really contributing to the project 'Theory of Change'.
47. As a consequence of the changes mentioned above, the MTR recommended to increase the budget for civil works and community grants, in order to respond to the needs identified in the Community Livestock and Pasture Management Plans, and to the increased number of PUUs and target villages. The increase in civil works expenditure category (+ 68%) was justified by the undervaluation at design stage of the budget needed to construct and equip the 24 veterinary clinics; for community grants cost category, the proposed 14% increase was justified by the need to cater for more pasture improvement infrastructures (bridges, roads, water supply), and mechanized equipment, identified as priority needs in the scope of the development of CLPMPs. This proposed change can also be considered as fully appropriate since, as mentioned in the paragraph on lessons learnt, these investments in infrastructures and mechanization highly contributed to community mobilization and to the success of PUUs and PMPs.

48. These MTR revisions led to changes in the projected disbursement of the civil works category compared to the initial allocation and were implemented by the project with disbursement approval by the financial management division of IFAD.
49. It is interesting to note that at the time of MTR, the project was advised to support only PUUs that had secured land certificates (around 100). However, LPDP continued supporting all PUUs (203 in total) even those that had not been able to secure their land tenure which resulted in widening the scale of project outcomes and impact.
50. In general, the changes made in the course of project implementation, in particular those related to project area and number of target villages, were appropriate and timely. Furthermore, there were no substantial changes in the technical or institutional contexts during project implementation that would require additional adjustments further to those mentioned above.

## D. Assessment of Project effectiveness

51. Project effectiveness is rated **satisfactory**.

### D.1. Physical targets and output delivery

52. The project has three complementary technical components. Overall, project physical targets and output delivery are rated satisfactory. According to project progress reports, the overall cumulative output achievements are 105% for Component 1, 111% for Component 2 and 101% for Component 3. The project reached 23,840 households (106% of appraisal target), benefitting 180,777 individuals of which 49% were women.
53. **Component 1: Institutional Development.** Sub-Component 1.1 Development of Community Organizations main outputs include the following:
  - (a) Establishment of PUUs: 203 were established by the project, against a (revised) target of 200 (101 % of achievement). PUUs were the means for the implementation of most project activities and the main channel for project support. In order to capacitate the newly established PUUs, their members received significant training support: 734 training sessions were organized for PUUs, against an appraisal target of 525 (139% of achievement). The details of trainings organized for PUUs is provided in the table below. PUU members also undertook exchange visits (10,125 beneficiaries against a target of 7,500).

Training theme	Number of training sessions
Pasture Users Union management	127
Procurement and financial management	83
Development of CLPMP	127
Pasture management and improvement of fodder.	139
Healthy and qualitative feeding of livestock	92
Internal exchange visits between PUUs	6
PUUs exchange visits between targeted districts	8
Computer and GPS training	24
Conflicts and their resolving methods	32
Financial management and PUU's sustainability	96
<b>Total</b>	<b>734</b>

**Table 1: number of training per topic**

- (b) Establishment of PUAs: 5 PUAs were established at District level. PUAs are groupings of all PUUs in a District. Their role is to represent PUUs at District level, to assist the PUUs on resolving of issues related with pasture land management and use, assist for development of measures on improving of pasture conditions, share experience among PUUs, and also arrange for collective use of larger machinery such as fodder cultivators and harvester, graders. The establishment of PUAs was not foreseen in the initial PDR. However, this setup was proposed under the Law on public Organizations (but not in the 2003 version of the Pasture Law). The creation of PUAs was extremely relevant and useful, in particular to ensure PUUs participation in the policy dialogue and their institutional representation.
  - (c) Creation of CIGs under PUUs: Common Interest Groups (CIG) and Women Interest Groups (WIG) were created under the umbrella of the PUUs, in order to implement collective sub-projects on various topics. 151 CIGs (against an appraisal target of 150) and 110 WIGs (appraisal target of 110) were formed.
  - (d) Training of animal husbandry: 4,169 households (against a target of 4,000), were trained on improved production practices (feeding, reproduction, health management). This number represents around 16 % of the total households in the area, which is significant and should in theory lead to capacity improvement and behavioural changes.
54. Sub-component 1.2 Institutional Strengthening main outputs:
- (a) Review of Pasture Law: the main output of this component was the support to the revision and adoption of the Pasture Law. In order to support this process, the project supported the creation and the functioning of a technical working group, composed of the main stakeholders in charge of pasture issues at national level. The project employed consultants on legal, policy and legislative issues to support the working group, and also organized public consultations on the draft law in two regions.
  - (b) Land tenure: In order to secure access to pasture for supported communities, the Project assisted PUUs to secure land use rights; this support was provided in close partnership with the local authorities. All 203 PUUs received project support in this domain.
55. **Conclusions on component 1:** All targets under this component were attained or exceeded. Project effectiveness for this sub-component was therefore satisfactory despite the under performance of the initial service providers in charge of implementing the activities (see further section on Performance of partners). The attainment of targets at local level was undoubtedly facilitated by the political will at national and local level and the enabling environment created.
56. **Component 2 Livestock and Pasture Development.** Sub-Component 2.1 Strengthening Private Sector Services delivered four outputs: fodder production, support to private entrepreneurs, support to privatization of veterinary services and sheep breeding.
- (a) Fodder production: Under this activity, 131 fodder-focused CIGs were created, through the provision of fodder seeds and fertilizers to 3023 households (vs. 2700 HH appraisal target) and 835 ha Incremental area under fodder production. Each household package was composed of seeds (alfalfa, sainfoin and barley) and fertilizers for 0.25 ha. Some 18 farmers supported under this activity became seed producers and are now producing fodder seeds in a commercial way.
  - (b) Strengthening private entrepreneurs: Under this activity, the project was supposed to provide business development services (BDS) to various categories of private entrepreneurs of the livestock value chains (feed manufacturers, meat and dairy processors and traders, breeders, etc.). BDS support was in reality provided mostly to seed producers established under the activity mentioned above. In addition to the seed producers, 10 enterprises of various nature (appraisal target of 10) and 3 Milk Collecting Points (MCP) benefitted from this support (training in business management and business plans preparation). Considering the size of the project area, this number does not appear as significant. The poor dynamism of the private sector in

the livestock sector, which remains essentially subsistence-based and little commercially-oriented, explains the low demand by the private sector for BDS support.

- (c) Veterinary clinics: Under this activity, the project supported the creation of 24 veterinary points/clinics (100% of the post-appraisal revised target). The selected private veterinarians were provided with a small building, veterinary equipment, and a motorcycle for some of them, and a revolving fund of veterinary medicines. The plots on which the clinics were constructed were provided by the Districts. Two veterinarians per clinics (48 in total) also received training, mostly on technical issues; markedly, the training did not cover BDS aspects.
- (d) Sheep breeding: 20 CIGs were supported in sheep breeding (in line with the revised target of 20 at MTR). Each group received 4 improved gissar rams which were used collectively in the village flocks.

57. Sub-Component 2.2 Improved Pasture Management main outputs:

- (a) Pasture management plans: All 203 PUUs (vs. 200 revised appraisal target) established by the project were assisted by community facilitators (INGOs, then national NGOs) in developing their Community Livestock Pasture Management Plans (CLMPs). These CLMPs include sub-projects in various areas, but their most important component is the Pasture Management Plan, and in particular the pasture rotation plan.
- (b) Pasture rotation: All PUUs were supported by the Pasture Management Specialist to develop a pasture rotation plan. This plan is based on the assessment of livestock needs, and of pasture resources, that were conducted together with the community (PUUs executives). All PUUs were trained in the use of the planning tools, and developed a graphic planning chart which is usually displayed in the PUU's premises.
- (c) Demonstration plots: As mentioned earlier, this activity was not planned for in the initial design. In total, 120 demonstration plots, covering a total area of 167 ha, were established to showcase the benefits of pasture protection and resting to communities. All plots were fenced with a fixed fence, which was not the most adequate technique, since pasture put under protection and at rest should rotate every year. Mobile electric fences would have been a more suitable option.

58. **Conclusions on Component 2:** Project effectiveness for Component 2 was varied. Activities supporting the private sector were limited by the poor dynamism within the livestock value chains sector. On the other hand, activities conducted with communities and PUUs were implemented smoothly and effectively, thanks to the very strong demand and commitment of the communities themselves.

59. **Component 3 Income Generation for Women** delivered the following main outputs: 65 trainings (100% of appraisal target) on income generation activities (IGA) for 883 women (103% of appraisal target); and 110 Women Income Generation Groups (100% of appraisal) received IGA packages for beekeeping, milk marketing, wool processing, small ruminants and poultry.

60. IGA packages. Around 913 women and their respective HHs benefitted from IGA packages which were delivered through 110 WIGs with the aim of enhancing the nutritional status of the HH and the incomes of women. Women were selected based on demand and through the targeting criteria set at design which prioritized women from poor households, women-headed households (and young families, 22-30 years old, with little or no livestock). Project benefits for this latter group, which was added during implementation to increase project focus on youth, was achieved through the 30% delivery of small ruminants packages.

61. Each package for poultry, small ruminants and beekeeping included inputs, veterinary care for one year, animal feed for the first 6 months, and a shed/henhouse in the case of small ruminant and poultry activities. Wool processing and milk marketing packages were introduced through the marketing assessment and active support of the IG specialist which was generally a good arrangement to reach-out to rural women and have them involved in

the marketing of livestock products. Both packages included equipment to increase their production and technical assistance. The packages were properly handed out by starting with technical assistance, followed by inputs and then technical support (e.g. marketing, veterinary).

62. **Conclusions on Component 3:** Overall, the component delivered fully the expected outputs, at times exceeding the appraisal targets with women showing great interest in the services the project was able to offer. Notwithstanding, in line with project design, there has been a missed opportunity in creating a supply chain for women, particularly related to milk and wool processing, as envisaged at design. In this respect, and for sustainability purposes, further training specifically in business development, including financial and marketing skills could have added great value to the project results attained.

## **D.2. Project outcomes and impacts**

63. The main outcomes to be achieved by the project were the following.
64. Under **Component 1 Institutional Development**, Sub-component 1.1 Development of Community Organizations, the main outcome is the operationality of PUUs. The project M&E reports that 80% of PUUs have a satisfactory level of governance (against a target of 80%). As per the project design, this institutional performance was supposed to be assessed by a specific study, entrusted to specialized service provider. In reality, the assessment was conducted by the project. The District Project Officers, assisted by the Community Development Specialist, were in charge of this assessment. They used a set of criteria based on six topics (land ownership, pasture management, financial capacities and income generation, documentation and reporting, animal health and vaccination of animals, gender issues). These six topics and the related criteria were recommended by an IFAD supervision mission. The Completion mission had the opportunity to consult the evaluation files and concluded that the exercise was conducted in a rigorous manner and therefore the results can be considered reliable.
65. Under Sub-component 1.2 Institutional Strengthening, in addition to PUUs development, as mentioned above, the main institution supported by the project was the Pasture Ameliorative Agency. Its managerial capacities, governance and strategic leadership have definitely improved through: (i) provision of technical support (local experts and international TA), (ii) participation in international study tours, (iii) support to the Pasture Law working group and, (iv) review of its internal charter.
- (a) Review of Pasture Law: The main outcome of this sub-component is the review and improvement of the Law on Pasture. LPDP supported government agencies and policy makers in conducting a thorough review of the 2013 version, and in taking it through the whole legislative process. Of specific interest to LPDP is the amendment that introduces a very important clause covering collection of fees and their use by the PUUs. The Amendment to the law was agreed with the line agencies and needs to be lastly ratified by the adopted by the Parliament and President to enter into force.
66. Pasture land use rights: Support provided to PUUs to secure their land tenure was moderately successful. Out of the 203 PUUs supported for this purpose, 110 obtained land use certificates (the appraisal target was 200) and the remaining 93 only received provisional land lease agreements. This incomplete achievement can be explained mostly by the existence of land use conflicts, which the local authorities have not been able to solve within the project timeframe, despite their very strong commitment and support to the project on this matter.
67. For **Component 2 Livestock and Pasture Development**, Sub-component 2.1 Strengthening Private Sector Services, under fodder production, 750 ha of cultivated fodder were established (no target) under this activity; this represents less than 1% of the total pasture land (96,387 ha in the targeted villages; 138 375 ha at level of project area). It is unlikely these

- 750 ha will significantly contribute to improvement of fodder availability in the project area; instead, the intensive cultivation of fodder (not a local traditional practice) should be progressively encouraged in the future.
68. Sheep breeding: The project M&E indicates that 90 % (against a target of 70%) of households benefitting from sheep breeding CIGs have recorded significant incremental lamb weight among the offspring of the improved rams. This was registered for the first generation of crossbreeds, but the sustainability of this outcome is not fully ensured. The rams will need to be replaced in the near future to avoid inbreeding; however, no mechanism has been established to ensure the replacement of rams. If it not taken into consideration, there is a high risk the improvement recorded on this first generation of offspring will progressively disappear in the next generations.
69. Strengthening private entrepreneurs: The most concrete outcome of the support provided to private entrepreneurs is the establishment of seed production businesses by 18 entrepreneurs. These 18 entrepreneurs should be able to respond to the demand in forage seeds of the whole project area (e.g. 1 seed producer covers on average 11 villages which is reasonable).
70. Veterinary services: 14,432 households (60 % of the total) have access to primary veterinary services through the 24 veterinary points established by the project. In addition, 65,000 heads of cattle (48 % of the cattle population in the project area) and 121,500 heads of small ruminants (33 % of small ruminant population) were vaccinated in 2017-18. This slightly exceeds the set targets of 50,000 and 120,000 respectively. This is a significant outcome which should generate a good impact, considering these animals were previously mostly untreated and unvaccinated.
71. On privatization of veterinary services, it should be noted that the project did not provide institutional and policy support to the reforms related to privatization of veterinary services, as planned in the initial design.
72. Under Sub-component 2.2 Improved Pasture Management, in particular CLPMP development: as mentioned earlier, the CLPMP is the result of an adaptation and widening of the concept of PMP. This adaptation proved to be very relevant, since it allowed the project and the PUUs to identify constraints to be addressed and projects to be implemented in a more holistic way. However, it seems that CLPMP were mostly considered by the project and the communities as a project tool, aimed at identifying actions and sub-projects to be supported by the project. There was for instance no provision for extending the CLPMPs after project closure. Clearly, CLPMPs could have been used as a permanent community development planning, and management tool, to help communities planning activities, monitoring implementation, and mobilizing resources even after project closure. If developed with this longer term and wider scope, it could have contributed to increase the sustainability of project investments.
73. Demonstration plots: The project M&E does not provide any relevant information on the outcome of these pasture protection demonstrations. It would have been interesting for instance to identify any behavioural change induced by these demonstrations and see how many PUUs replicated similar protection measures. Since this outcome was not measured by the project, it is difficult to draw any conclusion; however there are a few documented examples where PUUs extended the area under protection after acknowledging the benefits of such activity.
74. Pasture management: The project M&E indicates that 83,000 ha of pasture were put under improved management practices (subject to pasture management plan). This represents 86% of the total area covered by pasture in the 203 villages, and 60% of the total Districts area. This is a very significant outcome of the project (although this percentage is presented in the logframe as an output indicator) which points to a major change in pasture management practices and behaviour.



75. Investment sub-projects: PUUs formulated 388 sub-projects as part of the development of their CLPMP, which make an important outcome. All sub-projects except the 10 mentioned below were implemented. Table 2 below shows the distribution of sub-projects per type. Majority of projects (208) are related to machinery, 121 to pasture infrastructure, and 45 to animal breeding (which come in addition to the 20 sheep breeding CIGs supported under Component 1).

Type of sub-project	Number
Machinery	216
Pasture infrastructure	121
Fodder cultivation	3
Sheep breeding	45
Milk collection	3
<b>TOTAL</b>	<b>388</b>

**Table 2: Sub-projects supported in the scope of CLPMPs per theme**

76. The supply of machinery to PUUs generated significant outcomes: in total, 28,154 HH (no targets) received mechanization services, which is more than the total number of households targeted by the project (spill-over effect). On top of this, the provision of mechanization services by PUUs generated a total income for all PUUs of about 2 million TJS to date.
77. At the date of the Completion mission, 10 projects identified within the scope of CLPMPs resulted being approved but not financed. These projects are all of a significant scale and their total amount reaches 5 529 815 TJS (equivalent in USD 596 968). This amount is supposed to be provided by the Government of Tajikistan as a compensation for the project funds lost in a bank that went bankrupt.
78. Outcomes values for **Component 3 Income Generation for Women**. According to the results of the Impact Survey, it was shown that 67.8% of women engaged in IGA report having their income increased by 20% or more.
79. For the second outcome, i.e. 84,2%% of women having positive perceptions of project interventions, there is high probability the project attained more 100% of the target. This is based on the fact that at MTR this value was already very high (67%), and in turn, more recently, field visits proved the enthusiasm of women for their engagement in IGAs, often reporting a lack of resources in satisfying the increased demand.
80. Finally, the third outcome, i.e. the likelihood of sustainability of agriculture/livestock production groups formed and/or strengthened, was assessed as moderately satisfactory (vs. satisfactory target), given the limited training in business management skills reported by WIGGs members during the field interviews.
81. **Introductory note on impact.** The project completion report is supposed to base its conclusions related to impact essentially on the impact assessment results drawn from the Impact Evaluation typically undertaken at completion. In the case of LPDP, an Impact Evaluation was initially done by IFAD. The methodology chosen was to compare the LPDP beneficiaries as treatment group with LPDP2 beneficiaries as control group. The Impact Evaluation indicates that there was a significant increase in livestock income and productive assets for households. Also, livestock weight has increased on average. In the same time it shows however a reduction in milk yields.<sup>8</sup>
82. The PMU has criticised the methodology and pointed out that the control sample used in the Impact Evaluation is substantially different from the treatment sample in terms of its socio-economic and natural conditions (i.e. less mountainous than the treated group), and production systems (i.e. less livestock oriented than the treated villages).

<sup>8</sup> IFAD Impact Evaluation, p 25.

83. The Impact Evaluation employs propensity score matching to even out the differences between the LPDP and LPDP2 project areas. Still, the PMU has argued that differences in breed, animal husbandry practices and availability of fodder and other unidentified factors between the two areas are distorting the results.
84. Moreover, the Impact Evaluation unfortunately does not structure its analysis following the project logframe indicators (e.g. increase of HH asset ownership index, HH wealth ranking improvement but refers instead to gross HH annual income). Nor is it directly comparable with the project baseline data criteria or methodology, therefore ruling out the option of undertaking a comparison between baseline data with the Impact Evaluation data for the treatment group.
85. Lastly, when looking at the project M&E system, essentially based on data collected during implementation and the mid-term survey, one can conclude the following: if on one hand the MTR survey is valuable as it reports on all project logframe indicators, and follows strictly the baseline sample and methodology, on the other, it covers up to mid-term results, with the additional restriction that it holds an attribution limitation as not all results can be ascribed to the project.
86. In light of the shortcomings mentioned above, the PMU commissioned an Impact Survey in early 2020 to measure the results on the logframe indicators that were not yet available. Thus, the following impact analysis of LPDP is based on the triangulation of the different sources available, i.e. project M&E data, the Impact Survey, the MTR Survey, expert's opinion (including those from supervision reports) and, where possible, the Impact Evaluation.
87. **Households' incomes and assets** is rated **satisfactory**. The project was expected to increase both the HH asset ownership index and the HH wealth ranking by 20% for 75% of the target households. According to the Impact Survey, the project achieved 79.6%. However, building on other two sources available, i.e. the qualitative data collected during the field visits and the earlier MTR survey results, the following observations are also worthwhile considering.
88. At the time of the MTR, when project activities were still in their initial implementation phase, 33% HHs (44% of target) reported an HH asset ownership index increase by 20%, and 42% (56% of target) reported a wealth ranking improvement by 20%. With the project gaining momentum and yielding more benefits thereafter, it is plausible these values increased. These early results are supported by evidence collected during field visits at completion where almost all beneficiaries met (male, female and youth) confirmed having had an increase in income of around 20-30%. Reportedly, this additional income allowed, for example, the improvement of their diet with the availability of a wider range of food for the HH, or better access to higher education for their children. With the caveat explained above, positive results on HH incomes stem also from the Impact Evaluation where a 12% higher income is reported among project beneficiaries as opposed to the control group.
89. Despite the limitations in data availability, it is realistic to conclude that the project has generated an increase in the incomes of the target group, and equally in their physical and financial assets ownership, mostly in line with the appraisal targets. In this respect, it is plausible to believe between 60-70% of HHs increased their incomes by 20% or more which is a good achievement for the project.
90. **Food security** is rated **satisfactory**. Food security is at the core of LPDP 'Theory of Change'. Despite the relative decrease in poverty, there is still a significant number of people suffering from chronic malnutrition and poverty in the country. Through the improvement of livestock productivity and a component fully dedicated to enhancing the nutritional status of women, the project focused strongly on helping poor households dealing with food security issues and nutrition. Anthropometrics measures at baseline and mid-term show a positive trend in children's growth with regards to height, weight and body mass by 50% (against appraisal). The Impact Survey indicates the following reductions: weight-for-age (boys) –

- 9,84%, height-for-age (girls) -18,50%, height-for-age (boys) – 7,49%, weight-for-height (wasting) (girls) -16,02%, and weight-for-height (wasting) (boys) - 20,08%.
91. Moreover, on the basis of quality data collected during field interviews, it is plausible to conclude that project interventions led to a more diversified and secure diet among beneficiary, specifically through the increased meat and dairy products consumption, and a more frequent consumption of fresh fruits and vegetables, made possible from the additional income the project generated. This latter observation was particularly prominent in women who received IGA packages.
92. **Human and social capital and empowerment** is rated **satisfactory**. The project focused on building the capacity of beneficiaries individually and collectively through several initiatives. Specifically, training in improved production practices (including feeding, reproduction, and health management) reached a remarkable 16% of total households. Extensive training to capacitate the newly established PUUs was also provided to a larger scale than planned, with a 139% achievement and a women ratio of 26% (vs. 30% appraisal). Similarly PUU members' exchange visits were organized exceeding the target by achieving 135% delivery.
93. As observed during the fieldwork, within the PUUs establishment process, beneficiaries were highly supported and involved in the development and management of these organizations. This new operating model was instrumental in ensuring a fairer participation of men and women in decision-making processes at the community level while strengthening their role in controlling the village natural resources (pasture lands). Furthermore, the land certification initiative constituted an effective empowerment tool for the target communities.
94. In line with the observations mentioned above there is solid evidence to conclude the project had a positive impact on the human and social capital empowerment of its beneficiaries.
95. **Agricultural productivity** is rated **moderately satisfactory**.
96. **Productivity of pasture:** The first element, on which the project should have a direct influence, is the productivity of pasture. The improvement of productivity of pasture should lead to incremental animal productivity. This aspect was measured by the project at start-up, mid-term, and at the end, as shown in the table below. This table indicates a significant improvement (+ 63%) of the dry matter yield for pastures included under Management Plans (83,000 ha, representing 85% of the total of pasture). This means that at the level of the project area, the global increase in pasture productivity should stand at around 50%. This is very high, and could be over-estimated; thus it should be crosschecked and confirmed with other sources of information.

District	2013	2016	2018
Sh.Shohin (former Shurobod)	0,8	1,2	1,53
Muminobod	1,2	1,67	2,06
Khovaling	1,5	1,8	2,1
Baljuvon	1	1,38	1,71
Temurmalik	1	1,33	1,6
<b>AVERAGE</b>	<b>1,1</b>	<b>1,48</b>	<b>1,8</b>

Table 3: Pasture yield in tons of dry matter per ha

97. The implementation of PMP (as components of the wider LPMP), and the introduction of rotation practices improved the productivity of pastures, as shown above. In addition, better availability of mechanized equipment (tractor, grass cutter, hay balers), allowed members of

- PUUs to harvest hay at the right time<sup>9</sup>. This led to the reduction of hay post-harvest losses while improving its quality and, in turn, animal productivity. Although this positive result was confirmed by numerous farmers, it cannot be properly quantified.
98. **Milk production:** This criterion, together with meat productivity, is essential to assess impact on livestock productivity. Unfortunately, results provided by the project M&E system, and those from the final Impact Evaluation contradict each other. The Impact Evaluation indicates that the treatment group produces less milk (2.6 liters per cow per day) than the control group (3.06 lt). This can easily be explained by the fact that the control group is located in more favourable conditions (plain system, less animals per household), than the treatment group, but this negative impact cannot be attributed to the project. For this criterion, the sampling bias is so strong, that these results cannot lead to any conclusion regarding project impact on milk productivity.
99. On the other hand, the M&E system data indicates a substantial increase in milk productivity, from 2.96 lt (per cow per day) at project start-up, to 3.22 lt at MTR, and 3.58 lt at project completion<sup>10</sup>. This set of data could however also be subject to bias: the first two figures were obtained through the baseline and the MTR impact survey respectively, done by the same service provider, using the same sample and the same evaluation methods; thus they can be compared. The final figure was obtained by the project M&E system, using different sampling methods. Comparing this final figure to the baseline or the mid-term data is therefore questionable. In addition, this 20% increase, cannot be entirely attributed to the project support since other factors could have contributed to this change, like the improved vaccination coverage, which is mostly due to Government efforts to control animal diseases, independently of project support.
100. Nevertheless, each supervision mission reported farmers having had a substantial increase in milk production due to better feed availability and quality (better productivity of pasture, better access to summer pasture, and improved availability of fodder in winter), and better access to animal health care. The figure provided by the project M&E system (+20% of increase in milk productivity) therefore appears as reasonable and acceptable (the reality probably stands between 10 and 30 %).
101. **Meat production:** All farmers met by each supervision mission reported a significant increase in meat production, due to better productivity of pasture in general, and better access to summer pasture in particular. During summer pasture, the weight gain is very important for young animals, due to unlimited availability of fodder and to its quality. However, the indicators used in the project M&E system and the Impact Evaluation only provide a partial indication on meat productivity, and do not allow the confirmation of such assumption. The Impact Evaluation only provides information on live weight of young animals at birth, which is not useful to assess meat productivity since animals are sold after one to three years. The project M&E on the other hand provides information on live weight at slaughter, which is more useful, but should be combined with an indicator related to the number of animals sold (per cow, per household), to have a sound idea of meat productivity. However, all these elements combined together lead to the conclusion that meat productivity has certainly improved, but to a scale that cannot be quantified.
102. **Number of cattle:** According to both the project M&E and the Impact Evaluation, around 44% of households increased their herd size.

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<sup>9</sup> Before the project, when PUUs had no mechanized equipment, mechanization service providers had long waiting lists and farmers had to wait until equipment was available, sometimes several weeks, which is incompatible with quality of hay.

<sup>10</sup> According to our monitoring plan and instructions (Overall 50 PUUs, 10 randomly selected PUUs in each district, 10% of HHs in the PUU. By coverage of all Jamoats), once in a year (in May) our district project officer collected data.

103. **Genetic potential:** According to multiple sources, progress on cattle milk and meat productivity was limited by the poor genetic potential of animals, on which the project had no influence (no activities were foreseen in this domain). If the project had focused on this aspect, as it is today the case of LPDP II, impact on productivity could have increased, secondly the increase in cattle inventories could have been contained, and lastly the pressure on pasture decreased. The situation is slightly different for sheep, for which the project contributed to genetic improvement. The introduction of improved rams led to an increase in meat productivity, according to farmers interviewed by most supervision missions. This improvement is however difficult to quantify and, as explained earlier in the section on outcomes, there are some questions regarding the durability of this impact, since no mechanism was put in place to maintain breeding efforts on a continuous basis.
104. **Productivity of labour:** The delivery of mechanization services by PUUs led to a drastic decrease in the cost of mechanization services. The cost of ploughing, for instance, decreased from 400 TJS to 200 TJS per hectare, in the whole project area. This has an impact on the productivity of labour (% of land mechanized increased) and on production costs. It is also worth mentioning that these mechanization services do not only benefit the 203 LPDP villages, but also the neighbouring ones.
105. **Conclusion of productivity:** Despite the problem in the data, it is possible to have a fairly good opinion on the project impact on productivity, by triangulating the various information available, and by using proxies to approach productivity. This impact is significant and probably stands between 10 and 20 %, which is a very good achievement for a livestock project.
106. **Institutions and policies** is rated **satisfactory**. One of the most significant achievement of LPDP in terms of institutional support is its contribution to the revision of the Pasture Law (see section on outcomes), which is expected to be adopted in the near future. The revision of this law will allow the collection of fees by the PUUs and the creation of a national pasture trust fund which will facilitate the scaling up of the PUU model with an impact at national level.
107. LPDP provided institutional support to several national level public institutions: the main beneficiary was the State enterprise "Pasture Ameliorative Agency", which was reinforced through the provision of technical assistance, and support to the working group in charge of reviewing the Pasture Law, for which the agency was the lead. In addition, exchange visits to other countries for policy and high-level decision makers, including officers of the Agency, contributed to enhancing institutional capacities on pasture management issues.
108. LPDP created PUUs at village level, and PUAs at District level. In order to ensure representation of pasture user communities in the national policy dialogue on pasture management, the project could have supported the creation of a National Pasture User Federation. This is a very common approach in IFAD-funded projects as it ensures that policies are developed in an inclusive way and take into account the specificities of beneficiaries.
109. In light of the above impact results, and with the caveats on the Impact Evaluation presented earlier, **reduction of rural poverty** is rated **satisfactory**.
110. **Access to markets** is rated **moderately satisfactory**. Improving access to market was not considered a priority in the project 'Theory of Change' and strategy. Therefore, very few activities and a limited budget were dedicated to this aspect. The main activities addressing market access were the establishment of 3 Milk Collecting Points (MCP) under Sub-component 2.1 and the support to 10 women milk processing groups under Component 3. Considering the limited quantities of milk processed by these groups, the impact of access to markets at project level is not expected to be significant.
111. The project M&E system does not provide valuable information on this aspect. The outcome indicator related to the quantity of milk sold per cattle per year indicates a substantial increase from baseline to MTR, from 270 to 320 lt (+ 18%).

112. Specifically on access to markets, the Impact Evaluation only measures the number of transactions, without disaggregation by commodity which does not reveal any significant difference between treatment and control group.
113. **Conclusion on access to markets:** Considering the lack of data related to this aspect, it is very difficult to draw solid conclusions on the project impact on access to markets. At the same time, market access for both milk and meat, does not appear to be a major constraint in the project area. Therefore, the low project emphasis on supporting activities of access to markets should not be considered a gap, but rather a relevant strategic choice.
114. **Natural resources and the environment** is rated **satisfactory**. The project area, because of its poor vegetal cover, its topography and the nature of soils, is subject to severe land degradation and erosion processes that are mostly due to overgrazing and excessive trampling by animals. The creation of PUUs and the development of Pasture Management Plans, in particular through the introduction of rotation, significantly contributed to improving pasture management. This led to the reduction of overgrazing and consequent degradation, and contributed to restoring heavily degraded pastures, through protection and resting. The reduction of erosion on pasture contributes to the reduction of landslides, better conservation of water, reduction of flooding and associated river banks erosion.
115. Restoration of pasture also contributes to enhancing carbon sequestration: when pasture is properly managed, the production of aerial biomass increases (M&E data shows that it increased by around 63% in pasture under PMP), but underground biomass (roots) also increases in similar proportion, and since this biomass is not consumed by animals, it durably sequesters carbon. This aspect is unfortunately very poorly documented at global level, and not documented at all at project level.
116. In some areas, the degradation process reached a stage where the surface layer of the soil was washed away. In this case, pasture management is not the solution anymore, and more radical conservation measures need to be envisaged such as soil protection and conservation, and reforestation.
117. **Climate change adaptation** is rated **satisfactory**. The project was designed in 2010 when climate change adaptation was not as high in the global agenda as it is today. It was therefore not considered a project objective as such. However, Tajikistan is one of the countries in the region most affected by climate change, in particular by longer and more severe drought episodes during summertime. Despite the missing climate change adaptation strategy in the project, the project has enhanced the village communities' resilience to climatic shocks through the following elements of the LPDP's activities::
- (a) The project promoted fodder cultivation, harvesting and conservation which can lead to improved availability of conserved fodder throughout the year during summer (drought episodes) and winter.
  - (b) The creation of PUUs enabled more livestock keepers, particularly the smaller ones, to access summer pastures located in the mountains. Summer pastures are less subject to climate change and to summer droughts than lowlands, therefore the project intervention had a direct impact on smallholder farmers' resilience to drought.
  - (c) Construction of water points and improved water supply in pastures (80 sub-projects in total) led to improvements in the availability of water.
  - (d) The project distributed varieties of fodder that are more drought resistant than the traditional varieties.
118. Climate Change adaptation is now mainstreamed under LPDP II and is part of the project 'Theory of Change'. The project implements activities specifically addressing this aspect such as the diffusion of drought resistant fodder trees (Saxsaul - *Haloxylon ammodendron*), or the promotion of water harvesting and conservation technologies (Groasis waterbox).

119. **Gender equity and women empowerment** is rated **satisfactory**. With a remarkable women outreach at 49%, the Project was designed with a central focus on improving gender roles and gender relations in the target communities, a priority which was effectively supported during the course of project implementation through stakeholders' commitment and appropriate human and financial resources allocation. Through women income generation activities (IGA) and PUUs establishment, the project had a significant impact on gender both at the household and community level. Within the household, women's increased economic empowerment (i.e. around 20% income increase) led to stronger bargaining power and diet improvements, as widely reported during the field visits. Moreover, although impact on reduced workload obtained from the acquisition of farming machines by PUUs was not quantified, it is plausible this had a positive impact particularly on women (traditionally the main HH source of farming labour).
120. The project made considerable efforts in increasing women's representation and participation in collective decision-making processes through their active involvement in PUUs establishment, where a 30% minimum women membership quota was required, and actual project achievement reached 32%. Community mobilization initiatives were highly effective in promoting women access to project opportunities beyond the expected results mentioned above, for example they succeeded in achieving 30% female-headed household membership in fodder production and gissar sheep breeding groups. Capacity-building activities for individual women is also expected to have yielded impact with 26 out of 30% female beneficiaries trained under Component 1 and 103% under Component 3.
121. It is estimated that the positive impact on the lives of rural women mentioned above, although not all directly quantifiable, did in some way contributed to increasing women/HH's resilience to male migration side-effects.

### **D.3. Targeting and outreach**

122. Project targeting and outreach is rated **satisfactory** with a total of 23,840 HH (106% of appraisal target) and 180,777 individual beneficiaries recorded at completion. The selection of villages and beneficiaries targeted by the project was based on agreed project criteria elaborated in the design document. The targeting approach, clear implementation steps and criteria were instead specified in the PIM. The targeting strategy included geographic targeting based on indicators of poverty and agricultural production for the selection of Jamoats and villages; household targeting for household selection as per poverty and gender criteria; and gender targeting for women's selection for specific project activities through fixing special quotas for their inclusion. Implementation documents review and field visits confirmed the strategy was implemented rigorously and effectively at the community level, attesting project support was largely extended to very poor rural households.
123. Gender and youth focus is rated satisfactory. Overall, 49% of beneficiary supported by LPDP were women. Rural women largely benefitted through: community development training (26% vs. 30% appraisal target), 65 IGA trainings (100% appraisal) for 883 women (103% appraisal), IGA packages for 110 WIGGs comprising 913 women (100% appraisal), and 32% (vs. 30% appraisal target) of PUUs membership representation.
124. Project design did not cater for the inclusion of youth as a specific target group. However, in the course of implementation, the project encouraged the inclusion of young families (22-30 years old) within the framework of small ruminant packages. This was achieved to a significant extent through the delivery of 30% small ruminants packages to young households with little or no livestock. The positive outcomes of this initiative were ascertained by the mission through the large number of young male and female farmers met in the villages.

### **D.4. Innovation, replication and scaling-up**

125. Project innovation and potential for scaling-up are both rated **highly satisfactory**.

126. **PUU model:** The project piloted and showcased the PUU model (including the Pasture Management Plan approach), which created the concept and was given an institutional and legal framework by the 2013 Law on Pasture. The model had never been implemented in the country till the LPDP took the initiative to pilot it. This model proved to generate important knowledge, evidence and success stories on a topic which is a priority in the country, and equally in other countries of the Central Asian and Caucasus region. The PUU/CLPMP approach proved to be applicable and efficient, and can be up-scaled at national level.
127. The LPDP II has established 180 PUUs in Western Khatlon and ACTED (a French NGO) has established around 20 of the same in the North of the Country. Moreover, the government has identified the PUU model as a very functioning one and scaled up the PUU model in more villages outside the project's scope, drawing on the expertise acquired by the PMU.
128. At regional level, this approach could also be up-scaled in countries facing similar situations in terms of pasture management. The lessons learnt from the Tajik PUU model could be very relevant and useful to Central Asia and the Caucasus, in former Soviet countries which face similar problems related to the ownership and management of collective pasture, and "tragedy of commons" scenarios. But they could also be replicated in Northern Africa and the Middle East, where management of rangelands is also an issue.
129. **Beekeeping:** Within the project context, beekeeping was traditionally an activity undertaken by men. However, with the promotion of beekeeping for women through income generating packages, and the showcasing of their profitability, the project succeeded in introducing beekeeping as an innovative source of income for women within the household. In particular the scale of its profitability (around 30% income increase) was a significant outcome for women worthwhile considering for future projects.

## **E. Assessment of project efficiency**

130. Project efficiency is rated **satisfactory**.

### **E1 Project costs and financing**

131. Total project costs are estimated at US\$ 15.2 million (US\$ 14.6 million actualized as of 30<sup>th</sup> September 2018 +current remaining balance of US\$0.6 million) over an implementation period of six years (2013-18). Total actual project cost of US\$ 14.6 million was financed through an IFAD Grant equivalent to US\$ 12.5 million (83% of total cost) and a Government and beneficiaries' contribution respectively of about US\$ 1.1 million (8% of total cost vs. 2% expected showing an increase of 193%) and US\$ 0.7 million (5% of total cost vs. 4% expected with a decrease of 7.7%).
132. Notably, there was a slight divergence between the expenditure foreseen at design (SDR 9.3 million, equivalent to US\$ 19.2 million) and that included in the financing agreement (US\$ 15.2 million). The difference was due to a second stage funding IFAD was expected to mobilize under the subsequent PBAS cycle (2013-2015) which did not materialize as it was instead provided to LPDP II. Nonetheless, overall funding was assessed as sufficient to project needs and the related implementation context.
133. Actual fund utilization by components was as follows: 7% for Component 1 'Institutional Development'; 73% for Component 2 'Livestock and Pasture Development'; 5% for Component 3 'Income Generation for Women'; and 11% for Component 4 'Project Management'. Annual allocations by component are detailed in Annex 7. Total disbursement rate by all financiers, as of 30<sup>th</sup> September 2018, is 96%.

### **E2 Quality of Project management**

134. The required management supporting entity for the project, i.e. the Project Steering Committee, was duly formed to guide project management in all its functions during implementation.



135. According to project supervision reports, the quality of the LPDP financial management has been satisfactory over the years in relation to procurement and the preparation of quality financial reports.
136. The Project's M&E system is satisfactory and captures the outputs and outcomes in a detailed manner that can be tracked. For outcomes, the project used IFORMS, a free electronic data collection platform, to collect data periodically on the project's relevant outcomes.

### **E3 Partners' performance**

137. **Borrower.** Government performance is rated **satisfactory**. The GOT has been proactive in deploying its functions during project design and implementation, in compliance with the Financing Agreement law covenants. It timely provided counterpart funding exceeding by 93% its planned contribution and adequately addressed project supervision and implementation support recommendations throughout project life.
138. **Implementing Partners.** The project made substantial progress in developing and strengthening its relationship with non-governmental entities involved in project implementation. In particular it recruited three international NGOs (INGOs), Caritas, Agha Khan Foundation and German Agro Action (from July 14 to May 2015), through a call for proposal in accordance to project design, to work closely with the local communities for the creation of PUUs, CIGs and WIGGs, and developing CLPMPs and sub-projects. At the end of their contracts, the INGOs' performance was considered non-satisfactory and therefore their contract was not renewed. The reasons were the following: (i) the quality of the sub-projects developed was sub-standard as all projects were similar, not tailored to the specific needs of each beneficiary group; (ii) the INGO, in their communication and visibility, often overshadowed the contribution of IFAD, the GOT and the Project; and lastly (iii) they did not mobilize any co-financing, contrary to the signed agreement.
139. In light of the above, the INGOs were replaced by two local NGOs, Orion and Almar Consulting with similar functions assigned and overall final performance considered as satisfactory. After the NGOs contract terminated (in September 2017), follow-up and consolidation of community development activities were entirely taken over by project staff (i.e. 5 District Project Officers tasked with supporting community organizations).
140. Further partnerships and collaboration were successfully established with two other donors. Specifically, with the United Nations Industrial Development Organization (UNIDO), in the framework of WIGGs for wool processing, for support in training and marketing, and secondly with the International Organization for Migration (IOM) for the construction of a wool processing centre in one of the districts (Muminobod).

### **E4 Quality of supervision and implementation support**

141. IFAD's performance is rated **satisfactory**. Four supervision missions, five implementation support missions and an MTR mission were timely organized and conducted with adequate international expertise. The guidance and problem-solving support provided by IFAD and its team (including the Country Field-Presence Officer) were critical in addressing the main implementation issues faced during project life (in particular at start-up and mid-term) while expanding the local capacity further e.g. to implement the new concept of PUU. Overall, IFAD's procurement and AWPB reviews and the processing of WAs were timely carried out.

### **E5 Project internal rate of return**

142. On the basis of the Completion mission analysis, the economic internal rate of return (EIRR) of the project is estimated at 23.9%, which is slightly exceeding the estimated economic internal rate of return of the project at design which was above the 21%. The details of the analysis are presented in appendix 10.

143. The actual project target of 23 840 households, with the estimated cost per beneficiary of US\$ 611, the higher EIRR and the low risk of non-profitability all contribute to LPDP satisfactory level of efficiency.

## F. Assessment of sustainability

144. Project sustainability is rated **satisfactory**.
145. **Sustainability of PUUs:** PUUs have a legal status and they are officially recognized by the government and local authorities. Their benefits are also acknowledged by the local communities, firstly because of their role in pasture management and improvement, and most significantly because of the services they provide to communities through mechanized equipment provision and the construction and maintenance of communal infrastructures.
146. PUUs sustainability is met through: (i) the provision of mechanized equipment which generates significant incomes through the rental services; (ii) the training received in financial management. The best evidence of sustainability of PUUs is that they are today able to finance sub-projects for the construction of bridges, water points, reparation of roads from their own resources (collection of fees and provision of services), without any external support.
147. In addition to their capacity to generate their own resources, PUUs could in the future be supported by Districts. Some PUUs have already received land, or office space, from Districts, and some envisage contributing to PUUs investment budgets after project closure. To this effect, they have requested PUUs to submit their investment plans for consideration in their regular budgeting processes.
148. **Sustainability of Private Service Providers:** The private veterinarians installed by the project in the veterinary centers seem to have a sufficient client base and turnover to be able to live from this activity. However, the GoT a resolution on 29 December 2017 transferring the function of the State Veterinary Inspection (SVI) to the newly established Food Security Committee (FSC). Pursuant to the Resolution, all private veterinarians became official employees of the FSC and their monthly salaries are paid from the FSC budget. Thus, the effort to establish a private sector veterinary service came to naught, most likely leading to significant inefficiencies in development of the sector. Moreover, these veterinarians did not undergo business and financial management training and did not receive business development support during their installation phase. In the worst case, this capacity gap could compromise their financial sustainability, as illustrated by the case of one veterinarian met during the Completion mission, who had failed to provide some funds for the maintenance of its building and equipment. On the other hand, reports from the field attest that the vet service function is operating as before, although due to limitations private fee collection, some of the activities are not kept on record. Moreover, the government has made initial planning for development of a vet service strategy, which is the first step to a sustainable private vet service in line with OIE standards.
149. **Sustainability of WIGGs.** The same risk of financial sustainability mentioned above is found in WIGG initiatives. While most women met reported a good income increase, they showed limited knowledge and awareness on what it takes to make their business profitable and sustainable. Training in business skills was provided occasionally rather than carried out systematically. Despite the marketing support provided by the project, lack of realistic information regarding future investments and 'a vision' was often observed. However, on balance, considering the limited scope of the investments in WIGGs with the overall project support through PUUs to 145,600 beneficiaries, a satisfactory rating is justified.

## G. Lessons learned and knowledge generated

150. The provision of mechanized equipment to PUUs contributed to improving productivity of labour, enhancing fodder cultivation and conservation, and also improving communal infrastructures (roads). It also played a catalytic role in mobilizing communities for PUUs and

- pasture management initiatives, since equipment access was perceived as a direct and concrete benefit from the new PUUs membership. In addition, PUUs' ownership of equipment strengthened their sustainability through the collection of fees.
151. The establishment of PUUs and introduction of Pasture Management Plans (PMP), including pasture protection and pasture rotation, significantly reduced overgrazing, erosion, and restored carrying capacity and productivity of pasture. However, when the degradation process is too advanced, only reforestation and land restoration can be effective.
  152. The PUU/PMP model was successful because the mobilization mechanisms developed by the project were effective in harnessing the self-governing potential of communities towards addressing the challenges posed by environmental degradation and climate change, in the same time as policy dialogue supported by the Project contributed to a conducive legal framework (the 2013 Pasture Law) at national level. Working in parallel on the pasture policy environment on the one hand, and on grass-root level physical activities on the other hand, was a key driver to success.
  153. The project failed to develop and implement a strategy that could lead to reduction in animal inventories, which is a necessity considering the already existing pressure on natural resources. For similar projects in the country or the region, the strategy should put more emphasis on productivity improvement (capacity building of farmers, animal health, genetics) and also on diversification of incomes, including outside the livestock value chain. The subsequent LPDP II has applied this lesson and is currently working on these two aspects by implementing more activities aiming at animal productivity improvement, in parallel to pasture management related activities, in order to allow farmers to get more incomes from fewer animals, but also diversify their sources of incomes without dilapidating the natural resource base.
  154. The targeting strategy adopted by the project was successful in reaching poor men and women within vulnerable communities and households. This approach is being replicated by LPDP II with meaningful results thus far.
  155. Social mobilization processes were a successful means for addressing issues of social cohesion within the PUUs. However, if complemented with more focus/resources on technical capacity the impact would have been higher.
  156. Horizontal learning among local initiatives, e.g. exchange visits and sharing of experiences, proved to be an effective tool for capacity building among the target group. Again this is being replicated through the LPDP II.

## H. Conclusions and recommendations

157. Based on the completion mission findings and above analysis, overall project achievement is rated **satisfactory**. Such ratings take into consideration the country and local context, and the strong challenges facing the small livestock producers in the project area. On the qualitative aspect, the project succeeded in: (i) piloting the PUU model and showcasing best practices in pasture management, contributing to the revision of the Pasture Law; (ii) reducing overgrazing and restoring heavily degraded pastures with 60% of District pasture land under protection; (iii) enhancing village communities' empowerment through their participation in decision-making processes while strengthening their role in controlling the village natural resources (pasture lands); and (iv) increasing village communities' resilience to climate change.
158. On the quantitative aspect, key achievements include: (i) the EIRR of the project estimated at an acceptable 23.9%; (ii) around 10-20% increase in agriculture productivity; (iii) 20% increase in women's income which led to women's stronger bargaining power and diet improvements within the household; and (iv) around 60-70% HHs income increase by 20% or more. As a

result, it is estimated<sup>11</sup> rural poverty in the project area has been reduced, at a scale largely in line with appraisal expectations.

### **Key drivers of success**

159. The above successes are attributable to several key drivers including: (i) an enabling environment characterized by strong political will and a conducive legal framework (2013 Pasture Law); (ii) a simple design with a dual parallel approach addressing simultaneously the pasture policy environment and grass-root level physical activities; (iii) strong dedication and commitment by implementers and PMU; (iv) adequate targeting strategy combined with social mobilization and participatory processes; (v) integration of attractive sustainability measures within the PUU model; (vi) promotion of horizontal learning among local initiatives; and (vii) continuous implementation support and intensive supervision by IFAD.

### **Recommendations**

160. The PUU model piloted by LPDP, has proven to be a very successful tool for promoting significant technical and institutional changes; in other countries where it operates, IFAD faces difficulties to establish successful community-based pasture management mechanisms. It would therefore be very useful to share the LPDP experience and leverage further knowledge at a regional or wider level through:
- (a) The development of a corporate knowledge product (success story brochure) to provide technical and methodological guidance to IFAD staff, project design missions, project implementers and decision makers in partner countries; and
  - (b) The organization of a regional workshop on collective pasture management, to share experiences and success stories on pasture and rangelands management, including those from LPDP.
161. CLPMPs have seamlessly played a key role in the mobilization of communities, identification of priority constraints, and development of sub-projects. However, under LPDP, CLPMPs were mostly used as a project tool without a longer-term perspective. In order to maximize their usefulness, it is recommended similar future and or ongoing projects (including LPDP II) use CLPMPs as a permanent long-term community and territory planning tool. The plans should go beyond project closure, as they can be instrumental for design, implementation and monitoring of collective projects, as well as for resource mobilization.
162. Animal feeding and management of pasture is undoubtedly the number one priority in the region. However, in order to optimize the impact on animal productivity, while limiting the expansion of animal populations, it would be critical to consider improving animal health and genetics, which can be restraining factors to productivity. This lesson is already being applied by LPDP II with good response from the beneficiary communities.
163. In situations where pasture and land degradation is too advanced, it would be necessary to consider other technical solutions than pasture management, such as land restoration, and reforestation.
164. Similar projects focusing on pasture improvement and management, in the country or in the region, are most effective when combined with institutional support activities addressing the policy environment. In some cases, policy reforms could even be requested as a prerequisite for project intervention.
165. In order to maximize results on gender, future project designs should include the development of a clear gender strategy and action plan to support gender issues across all project components, avoiding stand-alone components on women activities only. This is already being implemented by LPDP II and should be further replicated.

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<sup>11</sup> Actual quantitative data was not made available by the Impact Evaluation.

166. **LPDP Exit strategy.** The project exit strategy, related to national level policy aspects, is being seamlessly implemented under the on-going LPDP II. However, the GOT should follow-up on the following key areas:

- (i) Ratification of the revised version of Law on Pasture;
- (ii) Collection of PUUs investments plans by District Administrations for consideration of financing under their regular budgeting processes.

## Appendix 1: Terms of Reference of the completion review mission

To be added

## Appendix 2: List of person met and mission's programme

### List of people met

Name	Institution
Karimzoda Sadi	Director of the State Enterprise Project Management Unit (PMU) of the "Livestock and Pasture Development" (LPDP)
Turakul Murodov	Project Coordinator of the Livestock and Pasture Development, PMU LPDP
Damonov Rahmon	Community Development Specialist, PMU LPDP
Parviz Juraev	Business Development Specialist, PMU LPDP
Tagoev Odil	Representative of the State Committee of Investment and State Property Management of Tajikistan, Member of PSC
Nazarov Safarali	Head of the State Enterprise "Pasture Ameliorative Agency" under the Ministry of Agriculture of Tajikistan, Member of PSC
Salimov Salim	Chief Specialist, Department of livestock husbandry, poultry and fisheries , Ministry of Agriculture of Tajikistan, Member of PSC
Majidov Abdulmumin	Deputy Head, Republican Enterprise on breeding, thoroughbred, artificial insemination,

	procurement and sales of breeding animals under the Ministry of Agriculture of Tajikistan
Khojaev Abdulahad	Financial Manager PMU LPDP
Kholov Muso -	Livestock Development Specialist PMU LPDP
Sharbonui Valizoda -	Income Generation Activity Specialist PMU LPDP
Irina Barotova -	M&E Specialist PMU LPDP
Sodiqov Abdurahim -	Infrastructure Engineer PMU LPDP
Dilovar Majidov	District Project Officer PMU LPDP
Muzambil Jumaev	District Project Officer PMU LPDP
Mr. Khadjiev Nazirjon	Pasture Specialist PMU LPDP
Mirzoev Ashurali	Head of PUU/PUA
Mazorieva Zarafshon	Small ruminant package beneficiary
Abdurahmonova Malohat	Small ruminant package beneficiary
Sayfulloev Nurullo	Head of PUU
Halimov Hamzali	CIG beneficiary on sheep breeding (rams)
Hakimova Sailigul	Poultry package beneficiary
Nabieva Sobira	Small ruminant package beneficiary
Salomatshoev	Beekeeping package beneficiary (husband)
Afgonov Abdulhafiz	Veterinary Clinic Centre
Pochoeva Munira	Head of WIGG for milk processing
Nodirov Tosh	Head of PUU
Izatulloeva Zarafshon	Head of WIGG for wool processing

**Mission field visits programme 28 November – 1 December 2018**

A. District	B. Jamoat (Subdistrict)	C. Village	D. Name of Pasture User Union (PUU)	E. Name of people met
F. Sh. Shohin G. November 28	H. Shuroobod	I. Navobod	J. Navobod	K. Mirzoev Ashurali – Head of PUU
				L. Ms. Mazorieva Zarafshon and Ms. Abdurahmonova Malohat – Small ruminant package
		M. District PUU Association	Terrai	N. Mirzoev Ashurali - Head of Association Association
O. Muminobod November 29	P. 09:00	Q. Meeting with representative of Muminobod district government		
	R. Nuralisho Nazarov	S. Dehlolo	T. Farovon	U. Sayfulloev Nurullo – Head of PUU,



				V. Mr. Halimov Hamzali – CIG on sheep breeding (rams)
				W. Hakimova Sailigul – Poultry package
	X. Dehbaland	Y. Buston	Z. Duston	AA. Ms. Nabieva, Sobirova, Halimova – Small ruminant package
				BB. Mr. Salomatshoev – Bee keeping package
				CC. Meeting with PUU board members and Vet
				DD. Visit from Demo plot
	EE. Sh. SHohin	GG. Sangdara		FF. Mr. Afgonov Abdulhafiz – Vet clinic

HH. Sh. Shohin November 30	II. Sarichashma	JJ. Sarichashma	KK. Gulobod	LL. Ms. Pochoeva Munira– WIGG on milk marketing (Milk collecting point)
				MM. Mr. Nodirov Tosh – Head of PUU
		NN. Meeting with Deputy head of jamoat, agriculture specialist and vet		
OO. Temurmalik December 01	PP. Kangurt	QQ. Obi Shirin	RR. Obi Shirin	SS. Ms. Izatulloeva Zarafshon – Head of WIGG on wool processing

## Appendix 3: PCR rating matrix

<b>PROJECT NAME:</b>	
<b>PROJECT ID:</b>	
<b>BOARD APPROVAL DATE:</b>	
<b>ENTRY INTO FORCE:</b>	
<b>PROJECT COMPLETION DATE:</b>	
<b>LOAN CLOSING DATE:</b>	
<b>IFAD LOAN AND GRANT (USD MILLION):</b>	
<b>TOTAL PROJECT FINANCING:</b>	
<b>IMPLEMENTING AGENCY:</b>	
Criterion	PCR Rating
<b>Project Performance</b>	
– Relevance	5
– Effectiveness	5
– Efficiency	5
– Sustainability	5
<b>Rural poverty impact</b>	
– Households' incomes and assets	5
– Human and social capital and empowerment	5
– Food security	5
– Agricultural productivity	4
– Institutions and policies	5
– <b>Overall rural poverty impact</b>	5
<b>Additional evaluation criteria</b>	
– Gender equity and women's empowerment	5
– Access to markets	4
– Innovation	6
– Potential for scaling up	6
– Environment and natural resource management	5
– Adaptation to climate change	5
– Targeting and outreach	5
<b>Partners performance</b>	
– IFAD's performance	5
– Government performance	5
<b>Overall project achievement:</b>	<b>5</b>



## Appendix 4: Project logical framework

### Logical Framework

NARRATIVE SUMMARY	SURV.	OBJECTIVELY VERIFIABLE INDICATORS	RIMS CORE	BASELINE VALUES	MIDTERM. VALUES	FINAL VALUES	TARGET VALUES	MONITORING MECHANISM AND INFORMATION SOURCES	ASSUMPTIONS /RISKS
<b>A. PROJECT GOAL</b> <b>Poverty levels are reduced in the districts of Khatlon Region targeted by LPDP<sup>1</sup></b>	H	<b>G.1</b> 75% of targeted HHs with <u>household asset ownership index</u> improved by 20%;	RIMS Third level	0	33%	79.6%	75%;	<b>Frequency:</b> Information collected at (i) start, (ii) mid-term and (iii) end of project.  <b>Sources:</b> - Baseline, - Mid-Term and Impact Evaluation.	Political stability Appropriate Community Facilitators and Technical Assistance are available Government pursues endeavor in poverty reduction
	H	<b>G.2</b> 75% of targeted HHs' wealth ranking improved by 20% or more		0	42%	70.6%	75%;		
	H N	<b>G. 3</b> 20% increase of average targeted HH incomes (compared to baseline values) – disaggregated by district and gender of household head.		7423 somoni	8214 somoni	10467 somoni	8908 somoni		
<b>B. PROJECT PURPOSE</b>  <b>The nutritional status and Income of the targeted 22 400 poor households (HHs)</b>	H N	<b>P.1</b> Prevalence of <u>child malnutrition</u> reduced by 20% in 80% targeted HHs (gender <sup>2</sup> disaggregated): - height-for-age	RIMS Third level	80%	80%	80%	80%;	<b>Frequency:</b> Information collected at (i) start, (ii) mid-term and (iii) end of project.	Favorable government policies Prices are relatively stable
				40%	36%	13.00%	32%		

<sup>1</sup> In Khatlon Region, 78% of people are estimated to live below the poverty line (US\$2).

<sup>2</sup> All targets and actual values for 'people-related indicators are to be set and measured disaggregated by gender.

NARRATIVE SUMMARY	SURV.	OBJECTIVELY VERIFIABLE INDICATORS	RIMS CORE	BASELINE VALUES	MIDTERM. VALUES	FINAL VALUES	TARGET VALUES	MONITORING MECHANISM AND INFORMATION SOURCES	ASSUMPTIONS /RISKS
from the five targeted districts of Baljuvon, Khovaling, Muminobad, Shurobad and Temurmalik is increased.		( <i>stunting</i> ) - weight-for-height ( <i>wasting</i> ) - weight-for-age ( <i>underweight</i> )		21% 31%	19% 28%	18.05% 14.52%	17% 25%	<b>Sources:</b> - Baseline, - Mid-Term and Impact Evaluation.	
	H	P.2 75% of targeted HHs reporting incomes from livestock increased by 20% <sup>1</sup>		0	38%	83.6%	75%;		
	M	P.3 75% of targeted beneficiaries having positive perception about LPDP interventions		0	77.8%	89.8%	75%		
	M	P.4 Nb. of HHs benefitting of project's activities	RIMS	0	23841	23841	22,400		
C. Outcomes and Outputs		COMPONENT 1: INSTITUTIONAL DEVELOPMENT							
<b>OUTCOME:</b> Targeted Public sector organisations (disaggregated by	S	C.1.1 Satisfactory levels of governance <sup>2</sup> for 80% of PUUs facilitated by the project		0	60%	80%	80%	<b>Frequency:</b> Six-monthly reporting	Favourable government policies

<sup>1</sup> NB: cumulative national inflation at an estimated annual rate comprised between 6% and 9% per year (IMF forecast to be verified) corresponds to about 54% for the six years of the project and 33% for four years). In targeted rural areas the effects of inflation may be lower hence the target of +40% increase (or more) of nominal income looks a safe target (probably conservative).

<sup>2</sup> Governance levels of PUUs will be assessed through a specific study. Governance will be measured through levels of (i) democratic accountability (*qualitative*: if elections of board or head have been democratic), (ii) transparency of financial management (if members are informed of revenues and expenditures of PUUs); (iii) gender equitability (eg: presence of women's *sub-set organizations* / women's groups within the VO). Source of information will be an annual survey, conducted by CF, and mid-term / end of project HHs survey.

NARRATIVE SUMMARY	SURV.	OBJECTIVELY VERIFIABLE INDICATORS	RIMS CORE	BASELINE VALUES	MIDTERM. VALUES	FINAL VALUES	TARGET VALUES	MONITORING MECHANISM AND INFORMATION SOURCES	ASSUMPTIONS /RISKS
type, eg: PUUs, MoA, Local Government, Jamoats...) are more effective and efficient at pro-poor development	S	C.1.2 Managerial capacity <sup>1</sup> of targeted public organizations (disaggregated by type <sup>2</sup> ) is increased. – 70%		0	60%	70%	70%	<b>Sources:</b> - Progress Reports - Annual Reports - M&E Reports - VO, CF and TA Reports - Specific Public Records (e.g. of Parliamentary Proceedings)	Community interest
	R	C.1.3 Effectiveness: Promotion of pro-poor policies and institutions (project support to pro-poor policy and legislation with regard to sustainable pasture management.)	2.6.1 RIMS	Rating;3	Rating;3	Rating;4	Rating;5		
		C.1.4 Likelihood of sustainability of community groups formed/strengthened	2.6.2 RIMS	Rating 3	Rating 3	Rating;4	Rating 5		
<b>OUTPUTS:</b> 1.1 200 village level Pasture User Union (PUUs) established and functional	R	1.1.a 200 Community Groups formed/strengthened (PUUs established on the village level);	1.6.4 RIMS	0	203	203	200	<b>Frequency:</b> quarterly	Favourable government policies Community interest
								<b>Sources:</b> - PUUs' logbooks;	

<sup>1</sup> Managerial capacity needs to be defined. Such level will be assessed when the project starts the interactions with the targeted organizations. Once the parameters of managerial capacities are defined, the M&E Officer will develop a list of aspects (similarly to what done for Governance levels), with help from the company developing the MIS.

<sup>2</sup> MoA, Pasture Management Trust, Locust Control Unit, SVIS, Hukumats, Jamoats, VOs, PUUs.

NARRATIVE SUMMARY	SURV.	OBJECTIVELY VERIFIABLE INDICATORS	RIMS CORE	BASELINE VALUES	MIDTERM. VALUES	FINAL VALUES	TARGET VALUES	MONITORING MECHANISM AND INFORMATION SOURCES	ASSUMPTIONS /RISKS
		1.1. b. People in community groups formed/strengthen (members of Board).	1.6.5 RIMS	0	1700	1700	1600	Progress Reports - Annual Reports - M&E Reports - CF and TA Reports - RIMS survey	
		1.1.c 30% of women in 80% PUU Board	1.6.6 RIMS	0	30%; 80%	30%; 80%	30%; 80%		
		1.1.d Crop/ livestock production groups formed (CIG);	1.2.8 RIMS	0	151	151	150		
		1.1.e Crop/ livestock production groups with women in leadership positions (WIGG)	1.2.10 RIMS	0	110	110	110		
		1.1.f People in crop/ livestock production groups formed/ strengthened.	1.2.9 RIMS	0	3783 - 2900 (CIG) 883 (WIGG)	3783 - 2900 (CIG) 883 (WIGG)	3700		
1.2 National Forum on LPDP pro-poor development	R	1.2 Nb of National Forum held		0	0	1	1		
1.3 Regional workshops on LPDP pro-poor development	R	1.3 Regional w/shops held		0	0	1	1		



<b>NARRATIVE SUMMARY</b>	<b>SURV.</b>	<b>OBJECTIVELY VERIFIABLE INDICATORS</b>	<b>RIMS CORE</b>	<b>BASELINE VALUES</b>	<b>MIDTERM. VALUES</b>	<b>FINAL VALUES</b>	<b>TARGET VALUES</b>	<b>MONITORING MECHANISM AND INFORMATION SOURCES</b>	<b>ASSUMPTIONS /RISKS</b>
1.4 LPDP contributions to improved pasture management including policy dialogue, legal support	<b>R</b>	<b>1.4</b> Policy published, related legislation proposed/passed		0	0	1	1		

1.5 Training and study tours for PUU members and local government staff Republic of Tajikistan Livestock and Pasture Development Project Project completion report Appendix 4: Project logical framework	R	1.5.a Number of people benefitting of training or study tours, (women 30%).	1.6.2	0	7911 (2006 women – 25% )	10125 (2664 women – 26.3% )	7500		
		1.5.6 Number of trainings		0	532	734	525		
<b>C. Outcomes and Outputs</b>		<b>COMPONENT 2: LIVESTOCK AND PASTURE DEVELOPMENT</b>							
<b>OUTCOME:</b> Livestock production and productivity increased to the benefit of the assets and incomes of at least 22 400 poor and extremely poor rural households.	H H H H	<b>Livestock productivity data:</b> <b>C.2.1a</b> Litres of milk produced per cattle / day  <b>C.2.1b</b> Live weight before slaughter/Kg: cattle sheep goat  <b>C.2.1c</b> 2-year-old sheep weight is equal or above expected average for 70% of HHs benefitting of sheep breeding trials whose  <b>Crop productivity data:</b> <b>C.2.1d</b> Tons of fodder (alfa-alfa) produced / ha / year on demonstration plots	2.2.2	2.9 l/d	3.2 l/d	3.6 l/d	3.4 l/d	<b>Frequency:</b> Annual reporting  <b>Sources:</b> - Progress Reports - Annual Reports - M&E Reports - RIMS survey - CF/TA reports - <u>Sales data source:</u> Governance Statistic Committee – 24 agriculture form (should be provided by Muso Kholov) - <u>Treatment records:</u> <i>Tajik Veterinarian Association</i>	Communities willing to participate in the project activities; Govt support is favourable
				238 28 19	257 37 25	290 39 27	285 33 23		
				3.5 t/ha (traditional)	3.8 t/ha	3.8 t/ha	4.2 т/ha (demonstration)		

		<b>Pasture carrying capacity data;</b> <b>C.2.1i Carrying capacity of pasture (AVG livestock units on/ha; absolute)<sup>1</sup></b>  <b>C.2.1 v 30 %</b> of small farmers reporting increased head of cattle (herd size).		2 on/ha	2		3 on/ha		
				0	39%	44%	30%		
	H H	<b>Livestock sales data</b> <b>C.2.2a</b> Litres of milk sold per cattle / year <b>C.2.2b</b> Kg. of HHs processed dairy product sold / year Yougurt Chakka Kurut Butter		270	335	455	320		
				0	180	193	150		
				0	0	27	20		
				0	46	56	40		
				0	0	0	10		
	S	<b>C.2.3</b> 75% of PUUs collecting regularly membership fees for O&M of the CLPDP		0	70%	75%	75%		

<sup>1</sup> According the last revised PIM version, calculation of pasture carring capacity was cancelled.

	<b>V</b>	<b>C.2.4</b> Number of services provided disaggregated by: (i) vaccinations of cattle;  (ii) vaccinations of small ruminants;  (iii) treatments;  (iv) insemination of small ruminants		0  0  0  0	23759  42567  293  2393	64916  121552  5340  15016	50000  120000  2000  2000		
<b>OUTPUTS:</b> 2.1 At least 4000 beneficiary HH trained in improved livestock husbandry practices (by CF)	<b>R</b>	<b>2.1a.</b> Nb. of HHs trained in livestock production practices  <b>2.2.b</b> Nb. of trainings	1.2.3	0  0	1535  93	4169  239	4000  200	<b>Frequency:</b> quarterly  <b>Sources:</b> - CF/TA Reports - Progress Reports - Veterinarians logbooks (as sources for output 2.5) - Annual Reports - Case studies	Communities willing to participate in the project activities; Govt support is favourable
2.2 2700 beneficiary HHs engaged in participatory fodder promotion and production demonstrations	<b>R</b>	<b>2.2.a</b> Nb. of HHs engaged in fodder production process  <b>2.2.b</b> Incremental area under fodder production (ha)	1.2.2	0  0	2675  742.6	3023  835	2700  770		
	<b>R S</b>	<b>2.3</b> 20 groups (220 HHs) receiving 4 rams and engaged in improved sheep breeding trials	1.2.6	0	20groups 220HHs 80 rams	20groups 220HHs 80 rams	20groups 220HHs 80 rams		
2.3. 24 new veterinary clinics built and equipped	<b>R</b>	<b>2.4</b> Nb. of New / existing Animal health clinics		0	24	24	24		

		built / rehabilitated and equipped							
2.4. Private sector veterinarians' capacities are strengthened to serve the population	R	2.5 Nb. Veterinarians trained		0	0	80	48		
2.5. Business Development Services (BDS) provided including plans, legal advice, and linkage with finance and markets	R	2.6 BDS provided to 10 enterprises		0	4	10	10		
2.6 200 Community Livestock and Pasture Development Plans (CLPDP) implemented	R	2.7.a Productive infrastructure constructed/rehabilitated (access roads, livestock watering point for summer pastures)	1.1.16	0	28	131	130		
		2.7.b Number of "land use right agreements" (certificates/ lease agreements) signed by PUUs		0	23/203	110/93	200/200		
2.7.. 80,000 ha of pasture rehabilitated	R	2.8 Number of Ha of land under improved	1.1.14	0	77000	83000	80,000		

(on average 400 ha/village)		management <sup>1</sup> practices disaggregated by type.							
<b>C. Outcomes and Outputs</b>		<b>COMPONENT 3: INCOME GENERATION FOR WOMEN</b>							
<b>OUTCOME:</b> Poor and extremely poor women's assets and incomes increased through provision of Income Generating Activities (IGA) skills and materials including livestock	<b>S</b>	<b>C.3.1.</b> 70% of women engaged in IGA report having their income increased by 20% or more		0	38%	67.8%	70%	<b>Frequency:</b> Annual reporting  <b>Sources:</b> - Progress Reports - Annual Reports - M&E Reports - CF and TA Reports - RIMS surveys - Feedback from beneficiaries	Prices motivate producers
	<b>S</b>	<b>C.3.2</b> 70% targeted women having positive perceptions <sup>2</sup> about the project interventions		0	67%	84.2%	70%		
		C.3.3. Likelihood of sustainability of the agri/ livestock production groups formed and/or strengthened	<b>2.2.3</b>	n/a	RATING 3	RATING 4	RATING 5		
<b>OUTPUTS:</b> 3.1 Training on IGA packages provided to 850 women	<b>R</b>	<b>3.1.a</b> Number of IGA training provided to women participants		0	65	65	65	<b>Frequency:</b> quarterly  <b>Sources:</b> - Progress Reports - Annual Reports	CF/TA and private sector have credibility with the communities.
	<b>R</b>	<b>3.1.b.</b> People trained in Income Generating Activities (women trained, disaggregated by package)	<b>1.5.1.</b>	0	883	883	850		
3.2 110 Women Income Generating Groups (WIGGs)	<b>R</b>	<b>3.2</b> Number of WIGG received IGA packages		0	110	110	110		

<sup>1</sup> improved management practices should be identified and listed

<sup>2</sup> Perception questionnaires will need to be developed for the mid-term and end of project survey.

provided with IGA packages									
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## **Appendix 5: Dates of supervision mission and follow-up missions**

**G. [click here and insert text]**



## **Appendix 6: Summary of amendments to the financing agreement**

1. One Financing Agreement amendment was approved by IFAD management on 14 November 2017 to extend the Completion date (30 September 2017) of LPDP by 12 months, in order to absorb the remaining financing efficiency.



## Appendix 7: Actual Project costs

### Project Costs and Financing

1. The total costs were estimated to be US\$ 15,2 million (US\$ 14,6 million actualized as of today +current remaining pending balance of US\$0,6 million). The total project cost of US\$ 14,6 million was financed through IFAD amount equivalent to US\$ 12 551 million (IFAD Grant), Government Contribution of about US\$ 1,167 million and beneficiaries' participation of US\$ 0,715 million equivalent. In total, US\$ 0,127 million was included at the foreign exchange rate difference, which occurred during project implementation.

2. The table below compares expected with actual Government and beneficiary contributions, showing a large increase over the project lifetime, in the case of Government up to 193 % and decrease of 7,7% in the case of beneficiaries contribution. The project cooperated with other donor's projects, specifically with United Nations Industrial- Development Organizations (UNIDO) on supporting of WIGGs on wool processing through trainings and marketing and with International Labour Organization (ILO) on construction of building for WIGG on wool processing in Tebalai PUU, Muminobod district.

**Table 1. Government and beneficiaries' Contribution (US\$ ' 000)**

<b>Government Contributions (in US\$)</b>		
Expected Contributions at design	Total Govt. Contribution (actual)	% (against expected)
0.40	1.17	193%
<b>Beneficiaries contributions (in US\$)</b>		
Expected Contributions at design	Actual	% (against expected)
0.78	0.72	-7,7%

Source: Project Design Report, 2011 and PMU source, 2018

**Table 2. PDR Total Project Costs and Funding Sources (US\$ '000)**

No.	Funding Source	Expected US\$' 000	%
I.	IFAD Grant	14.6	94%
II.	Government	0.4	2%
III.	Beneficiaries	0.78	4%
	<b>Total</b>	<b>15.78</b>	

Source: Project Design Report, 2011

3. There was some slight divergence in the expenditure from the original design budget envisaged in the project design. The original Project design reflected total project costs of US\$ 19,2 million equivalent to XDR 9,3 million (US\$ 15,8 million + additional financing to be sought in the amount of US\$3,4 million, which didn't realized at the end). Consequently, US\$ 19,2 million figure was reduced to US\$ 15,2 million during financing agreement.

4. However, the overall funding was sufficient for project needs with the allocation of funds adjusted according to the emerging needs of project implementation and the local implementing context. The IFAD Grant was provided in IMF Special Drawing Rights (XDR) and the Government of Tajikistan and Beneficiary Contributions in Tajikistani Somoni (TJS). Comparisons across time need to consider exchange rate fluctuations between the currencies. Although the Project was completed largely to design and on time, actual expenditures estimated to complete the Project are estimated at only US\$ 14,6 million, equivalent to about 93% of the original budget (US\$15,78 million) (see table 2 and 4.)

5. The project monitored costs not only by Expenditure Categories but also by components and sub components. Table 3 and 4 presents the project expenditures by component/subcomponents as of 30 September 2018. The figures do reveal that Component 1 expended 7% of its budgeted amount, Component 2; 76%, Component 3; 5% and Component 4; 11%. The foreign exchange difference

accounts for 1% of the total project cost. Overall, PMU figures indicate that up to 30 September 2018, 4% of funds are remaining balance to be spent.

At the PDR phase has been reflected to use IFAD Grant in the different project components: Institutional Development component (10%); Livestock and Pasture Development component (72%); Income Generation for Women component (6%); and Project Management (12%). With an initially estimated 22,400 beneficiary households in the target group, the cost per households planned was about US\$850. The actual reallocation of the costs during project completion and across each component is estimated to be about US\$ 611 for 23 840 households. Nonetheless, actual reallocation of the IFAD Grant across each component/subcomponent is the following: (see table 3 and 4)

**Table 3. Fund Utilization per Component (USD) (Up to 30 September 2018)**

Expenditure by Components	2013	2014	2015	2016	2017	2018	Total
1. Institutional Development	54.700	315.481	394.036	193.805	79.318	8.550	1.045.889
2. Livestock and Pasture Development	51.060	588.899	3.455.375	3.967.325	2.359.131	598.465	11.020.255
3. Income Generating for Women	-	188.564	558.111	975	-	-	747.649
4. Project Management	476.542	374.680	245.609	246.091	181.116	96.560	1.620.598
<b>Total</b>	<b>582.301,41</b>	<b>1.467.624,00</b>	<b>4.653.130,47</b>	<b>4.408.195,84</b>	<b>2.619.565,18</b>	<b>703.574,70</b>	<b>14.434.392</b>
Foreign Exchange Difference	-0,10	202,96	6.004,55	12.000,08	11.456,12	96.600,60	126.264,21
<b>Grant Total</b>	<b>582.301,31</b>	<b>1.467.826,96</b>	<b>4.659.135,02</b>	<b>4.420.195,92</b>	<b>2.631.021,30</b>	<b>800.175,30</b>	<b>14.560.655,81</b>

Source: PMU Financial Records, October 2018

**Table 4. Fund Utilization per Comp/Subcomponent (USD) (Up to 30 September 2018)**

Expenditure by Comp./Subcomp.	2013	2014	2015	2016	2017	2018	Total
1. Institutional Development							
1a. Development of Community Organizations	18.006	285.391	299.853	136.864	27.468	-	767.582
1b. Capacity Building of Project Partners	36.694	30.090	94.182	56.940	51.850	8.550	278.307
2. Livestock and Pasture Development							
2a. Strengthening Private Sector Services	-	53.512	663.420	142.366	29.898	-	889.196
2b. Improved Pasture Management	51.060	535.387	2.791.955	3.824.959	2.329.233	598.465	10.131.059
3. Income Generating for Women							
3a. Income Generating for Women	-	188.564	558.111	975	-	-	747.649
4. Project Management							
4a. Project Management Unit	476.542	337.783	226.422	233.854	181.116	96.560	1.552.277
4b. Monitoring and Evaluation	-	36.897	19.187	12.237	-	-	68.321
<b>Total</b>	<b>582.301,41</b>	<b>1.467.624,00</b>	<b>4.653.130,47</b>	<b>4.408.195,84</b>	<b>2.619.565,18</b>	<b>703.574,70</b>	<b>14.434.391,60</b>
Foreign Exchange Difference	-0,10	202,96	6.004,55	12.000,08	11.456,12	96.600,60	126.264,21
<b>Grand Total</b>	<b>582.301,31</b>	<b>1.467.826,96</b>	<b>4.659.135,02</b>	<b>4.420.195,92</b>	<b>2.631.021,30</b>	<b>800.175,30</b>	<b>14.560.655,81</b>

Source: PMU Financial Records, October 2018

6. Below table compares planned budget versus actual costs with its variances (USD)

**Table 5 Planned budget vs. total actual costs and its variances (USD)**

Project Components and Activities	Total Budget	Total Actual	Total Variance
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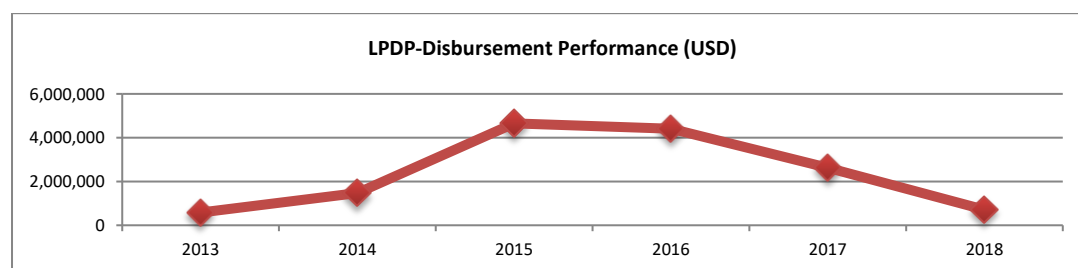


<b>PROJECT EXPENDITURES (BY CATEGORY)</b>			
<b>IFAD Grant</b>	<b>13.048.494,19</b>	<b>12.551.235,02</b>	<b>497.259,17</b>
1.Civil Works (CW)	290.623,28	290.623,28	0,00
2.Equipment, Goods and Vehicles (EGV)	565.972,87	562.972,87	3.000,00
3.Training, Workshops, Technical Assistance and Studies	2.131.151,72	2.094.130,72	37.021,00
4.Pasture Improvement Grants (PIG)	8.308.174,68	7.891.522,50	416.652,18
5.Income Generating Activity Grants (IGA)	572.344,53	572.344,53	0,00
6.Pasture Reserve Fund (PRF)	177.189,90	177.189,90	0,00
7.Operating Expenses (OE)	1.003.037,21	962.451,22	40.585,99
8.Unallocated	0,00	0,00	0,00
<b>Community contribution</b>	<b>732.781,50</b>	<b>715.730,42</b>	<b>17.051,08</b>
1.Civil Works (CW)	24.419,96	24.419,96	0,00
2.Equipment, Goods and Vehicles (EGV)	35.606,90	35.606,90	0,00
3.Training, Workshops, Technical Assistance and Studies	0,00	0,00	0,00
4.Pasture Improvement Grants (PIG)	643.559,80	626.499,66	17.060,14
5.Income Generating Activity Grants (IGA)	28.865,37	28.865,37	0,00
6.Pasture Reserve Fund (PRF)	0,00	0,00	0,00
7.Operating Expenses (OE)	329,47	338,53	-9,06
8.Unallocated	0,00	0,00	0,00
<b>Government (taxes)</b>	<b>319.133,00</b>	<b>1.167.426,16</b>	<b>-848.293,16</b>
1.Civil Works (CW)	21.726,00	12.340,58	9.385,42
2.Equipment, Goods and Vehicles (EGV)	93.007,00	130.658,60	-37.651,60
3.Training, Workshops, Technical Assistance and Studies	3.500,00	5.616,00	-2.116,00
4.Pasture Improvement Grants (PIG)	200.000,00	984.166,25	-784.166,25
5.Income Generating Activity Grants (IGA)	0,00	32.830,49	-32.830,49
6.Pasture Reserve Fund (PRF)	0,00	0,00	0,00
7.Operating Expenses (OE)	900,00	1.814,24	-914,24
8.Unallocated	0,00	0,00	0,00
<b>Sub-Total</b>	<b>14.100.408,69</b>	<b>14.434.391,60</b>	<b>-333.982,91</b>
Foreign Exchange Difference	0,00	126.264,21	0,00
<b>TOTAL PROJECT EXPENDITURES</b>	<b>14.100.408,69</b>	<b>14.560.655,81</b>	<b>-460.247,12</b>

Source: PMU Financial Records, October 2018

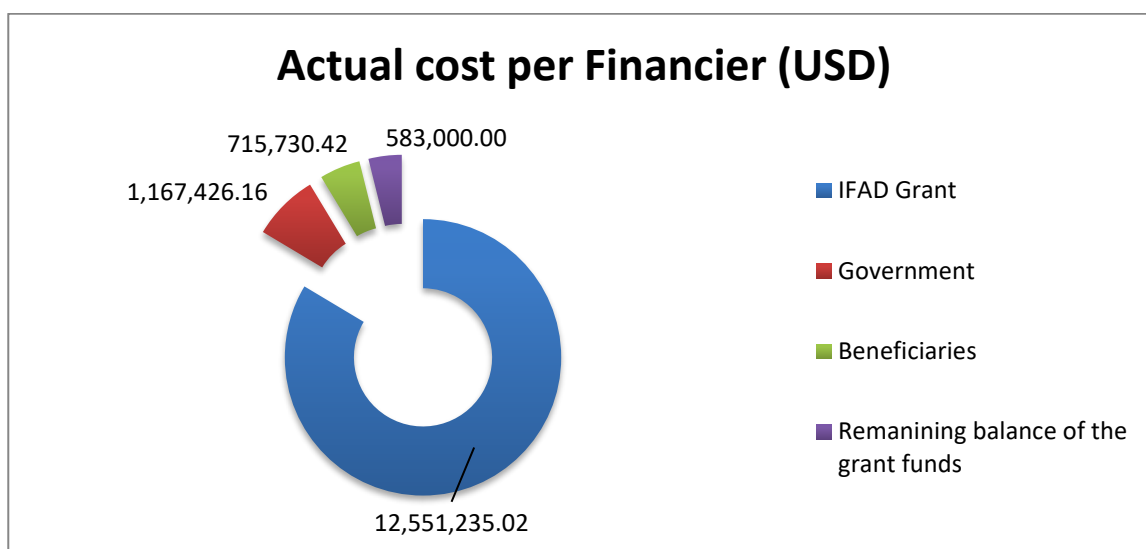
7. Below Graph 1 shows actualized disbursement per year

**Graph 1. Disbursement Performance over time by financier**



8. Chart 1 reflects all financiers spending performance that occurred during project implementation phase with its respected cost share amount

**Chart.1 Actual Financial Performance by Financier (USD)**



Source: PMU Financial Records, October 2018

## Appendix 8: Physical progress table

Physical progress measured against AWP&B and appraisal targets, including RIMS indicators

Period: November 2018 and after Impact Evaluation				
Impact and Outcomes	Indicators (with global target if available)	Achievements (as per M&E data)	RIMS Rating	
			(by Project)	(by supervision mission)
Impact level				
Overall Goal Poverty levels are reduced in the districts of Khatlon Region targeted by LPDP	75% of targeted HHs with <i>household asset ownership index</i> improved by 20%;	79,6%		
	75% of targeted HHHs' wealth ranking improved by 20% or more	70,6%		
	20% increase of average targeted HH incomes (compared to baseline values) – disaggregated by district and gender of household head.	10467 somoni		
Project Purpose: The nutritional status and Income of the targeted 22 400 poor households (HHs) from the seven targeted districts of Baljuvon, Farkhor, Khovaling, Muminobad and Shurobad is increased.	Prevalence of <i>child malnutrition</i> reduced by 20% in 80% targeted HHs (gender disaggregated): - height-for-age ( <i>stunting</i> ) - weight-for-height ( <i>wasting</i> ) - weight-for-age ( <i>underweight</i> )	weight-for-age (girls) – 19,20%  weight-for-age (boys) – 9,84% height-for-age (girls) -18,50% height-for-age (boys) – 7,49% weight-for-height (wasting) (girls) -16,02% weight-for-height (wasting) (boys) – 20,08%		
	75% of targeted HHs reporting incomes from livestock increased by 20%	83,6%		
	75% of targeted beneficiaries having positive perception about LPDP interventions	89.8%		
	Nb. of HHs benefitting of project's activities	23841		
Outcome level				
Component 1: Institutional Development: Targeted Public sector organisations (disaggregated by type, eg: PUUs, MoA, Local Government, Jamoats...) are more effective and efficient at pro-poor development	Satisfactory levels of governance for 80% of PUUs facilitated by the project	80%		

	Managerial capacity of targeted public organizations (disaggregated by type) is increased. – 70%	70%		
	<b>Effectiveness:</b> Pro-poor policy and legislation with regard to sustainable pasture management.	Rating;4		
	Likelihood of sustainability of community groups formed/strengthened	Rating 4		
<b>Component 2: Livestock And Pasture Development</b> Livestock production and productivity increased to the benefit of the assets and incomes of at least 22 400 poor and extremely poor rural households.	<b>Livestock productivity data:</b> Litres of milk produced per cattle / day Live weight before slaughter/Kg:  cattle sheep goat	3.6  290 39 27		
	2-year-old sheep weight is equal or above expected average for 70% of HHs benefitting of sheep breeding trials whose	90%		
	<b>Crop productivity data:</b> Tons of fodder (alfa-alfa) produced / ha / year on demonstration plots	3.8 t/ha		
	<b>Pasture carrying capacity data;</b> <b>Carrying capacity of pasture (AVG livestock units on/ha; absolute)<sup>21</sup></b>  30% of small farmers reporting increased head of cattle (herd size).	0  44%		
	<b>Livestock sales data</b>			

<sup>21</sup> According with the last revised PIM version, calculation of pasture carrying capacity was cancelled.

	Litres of milk sold per cattle / year	455					
	Kg. of HHs processed dairy product sold / year	193					
	Yougurt	27					
	Chakka	56					
	Kurut	0					
	Butter						
	75% of PUUs collecting regularly membership fees for O&M of the CLPDP	75%					
	Number of services provided disagg. by:						
	(i) vaccinations of cattle;	64916					
	(ii) vaccinations of small ruminants:	121552					
	(iii) treatments;	5340					
	(iv) insemination of small ruminants	15016					
Component 3: Income Generation For Women The project is managed for development effectiveness and efficiency	70% of women engaged in IGA report having their income increased by 20% or more	67,8%					
	70% targeted women having positive perceptions about the project interventions	84.2%					
	Likelihood of sustainability of the agri/ livestock production groups formed and/or strengthened	rating 4					
Output level							
Outputs by component	Indicator	(Physical) Targets					
		AWP&B (planned)	Actual (achieved)	%	Appraisal (Global)	Cumulative (so far)	%
Component 1. INSTITUTIONAL DEVELOPMENT							
200 village level Pasture User Union (PUUs) established and functional	200 (on the village level) PUUs established;	0	0	0%	200	203	101.5%
	People in community groups formed/strengthen (members of Board)	0	0	0%	1600	1700	106.3%
	30% of women in PUU Board	0	0	0%	30%	30%	100%
	Nb of sub-set organizations established (disaggregated by type)						
	PUU	0	0	0%	200	203	101.5%
	CIG	0	0	0%	150	151	100.7%
	WIGG	0	0	0%	110	110	100%
	People in crop/ livestock production groups formed/ strengthened.	0	0	0	3700	3783	102%
National Forum on LPDP pro-poor development	Nb of National Forum held	1	1	100%	1	1	100%
Regional workshops on LPDP pro-poor development	Regional w/shops held	1	1	100%	1	1	100%

LPDP contributions to improved pasture management including policy dialogue, legal support	Policy published, related legislation proposed/passed	1	1	100%	1	1	100%
Training and study tours for PUU members and local government staff , disaggregated by: (i) type of training, (ii) target group (iii) gender	Number of people benefitting of training or study tours	0	0	0%	7500	10125	123.3%
	(women 30%)	0	0	0%	30%	26.3%	87.6%
	Number of trainings	0	0	0%	525	734	139.8%
<b>Component 2. LIVESTOCK AND PASTURE DEVELOPMENT</b>							
At least 4000 beneficiary HH trained in improved livestock husbandry practices (by CF)	Nb. of HHs trained in livestock production practices	0	0	0%	4000	4169	104%
	Nb. of trainings	0	0	0%	200	239	119%
2700 beneficiary HHs engaged in participatory fodder promotion and production demonstrations	Nb. of HHs engaged in fodder production process	0	0	0%	2700	3023	112%
	Incremental area under fodder production (ha)	0	0	0%	770	835	108.4%
	20 groups (220 HHs) receiving 4 rams and engaged in improved sheep breeding trials	0	0	0%	20groups 220HHs 80 rams	20groups 220HHs 80 rams	100%
24 new veterinary clinics built and equipped	Nb. of New / existing Animal health clinics built / rehabilitated and equipped	0	0	0%	24	24	100%
Private sector veterinarians' capacities are strengthened to serve the population	Nb. Veterinarians trained	0	0	0%	48	80	166.6%
Business Development Services (BDS) provided including plans, legal advice, and linkage with finance and markets	BDS provided to 10 enterprises	0	0	0%	10	10	100%
200 Community Livestock and Pasture Development Plans (CLPDP) implemented	Number and type of infrastructure rehabilitated in time	0	0	0%	130	131	100.7%
	Number of "land use right agreements" ( <i>certificates/ lease agreements</i> ) signed by PUUs	0	0	0%	100/200	110/93	110%/46.5%
80000 ha of pasture rehabilitated (on average 400 ha/village)	Number of Ha of land under improved management practices disaggregated by type.	0	0	0%	80000	83000	103.75%
<b>Component 3. INCOME GENERATION FOR WOMEN</b>							
Training on IGA packages provided to 850 women	Number of IGA training provided to women participants	0	0	0%	65	65	100%
	People trained in Income Generating Activities (women f trained, disaggregated by package)	0	0	0%	850	883	104%
110 Women Income Generating Groups (WIGGs) provided with IGA packages	Number of WIGG received IGA packages	0	0	0%	110	110	100%

## **Appendix 9: RIMS data**





## Appendix 10: Project internal rate of return (detailed analysis)

### A. Introduction and Background

1. The Livestock and Pasture Development Project (LPDP, Phase I) was implemented in the Republic of Tajikistan from 2012 to 2018. The project targeted selected districts of Khatlon Region, which is one of the poorest regions of the country. Originally, the six districts have been selected for the Livestock and Pasture Development Project in South Khatlon (i.e. Shahritus, Qabodiyon, Farkhor, Vakhsh, Rumi and Panj). Latter in the implementation, the project supported establishment of Project User Unions (PUUs) by five districts (i.e. Muminabad, Sh.Shohin, Khovaling, Baljuvon and Temurmalik). The primary target group are the following: (i) smallholder livestock farmers; (ii) private veterinary service providers and small scale entrepreneurs with the potential to provide services to smallholder farmers; and (iii) women headed households and women belonging to poor households.

2. The main goal of LPDP was to contribute to the reduction of poverty in the Khatlon Oblast. The development objective of the Project was to increase the nutritional status and incomes of around 22,400 households (HH) by enhancing livestock productivity in a sustainable manner. The project reached more than planned, in total 23,840 HH (increased in 6% compared to initial target).

3. The Project achieved increased household incomes for families involved in livestock productivity in a poor districts through: a) established 203 PUUs (initially planed 200) developed community livestock pasture and development plan and pasture rotation plan for PUUs; b) 110 PUUs with pasture land use certificate and 93 PUUs with pasture land lease agreement; d) 151 Common Interest Group (CIG) and 110 Women Income Generating Group (WIGG) established; d) 734 trainings provided; f) established 5 Pasture User's Associations at the district levels; e) 5 Commissions on regulation of pasture management issues at district level.

Table 1. CIG and WIGG activities and HH Outreached

Activity	HH	Beneficiaries *	Groups
<b>CIG</b>			
Fodder Production	2675	16.866	131
Improved Livestock Group	223	1.406	20
<b>Total</b>	<b>2898</b>	<b>18.272</b>	<b>151</b>
<b>WIGG</b>			
Beekeeping	13	82	3
Small Ruminants	450	2.837	49
Poultry Package	250	1.576	33
Milk Processing	60	378	10
Wool Processing	110	694	15
<b>Total</b>	<b>883</b>	<b>5.567</b>	<b>110</b>
<b>Total ( CIG+ WIGG)</b>	<b>3781</b>	<b>23.840</b>	<b>261</b>

Source: PMU, October 2018

(\*average family size of around 6.3)

4. The Project had four investment components: (i) Institutional Development, with two sub-components: Development of Community Organizations; and Institutional Strengthening; (ii) Livestock and Pasture Development, with also two sub-components: Strengthening Private Sector Services; and Improved Pasture Management; (iii) Income Generation for Women and (iv) Project Management, with two sub-components: Project Management; and Monitoring and Evaluation.

5. The project supported component Livestock and Pasture Development through activity Improvement of pasture infrastructure where the following achievement occurred:

- a) 80 sub-project (villages) developed within construction of water line and water points for livestock with total length of 126,6 km; b) 19 construction of roads to pasture with length of 16,5 km; c) 16 construction of cattle track (bridge) with the length of 115 meter and d) 6 construction of sheep yard.

6. The activity Improvement of pastures and fodder production provided in total 155,7 tons of fodder seeds to PUUs members, specifically:

- a) 120,5 tons of barley, 23,5 tons of lucerne, 6,9 tons of wheat and 4,8 tons of esparset.
- b) In addition, 753,1 tons of fertilizers were provided under pasture improvement activities within 120 ha of established demo plots.

7. Demonstration of Conservation of Agriculture (CA) for the rehabilitation of pasture and grassland covered in total 50 ha (specifically in Muminobod and Sh. Shohin districts).

8. The project supported activity Provision of agricultural machineries where the following list of provided machineries and total quantity were provided to PUUs members through rental activities (table 2):

Table 2. Provided Machinery and its quantity

No.	List of provided machineries	Quantity
1	Tractor (wheel drive)	134
2	Front loader	12
3	Grain harvester	8
4	Track	2
5	Excavator	2
6	Vehicle-refrigerator	1
7	Different agricultural machineries (walking tractors, tractor trailers, ploughs, harrows, hay movers, threshers and others)	1150

Source: PMU, October 2018

9. Table 3 below provides information on the number of households that have used machinery services and PUUs respected income from the beginning of the project across each targeted district.

Table 3. Monitoring of Machinery rental services

No.	District	Established PUU	No. of machinery provided	HH received services from the beginning of the project	Total Income from the beginning of the project/TJS	Total Income from the beginning of the project/USD*
1	Muminobod	40	424	4.981	369.370	65.959
2	Sh.Shohin	62	305	7.032	398.784	71.211
3	Temurmalik	40	169	2.888	312.066	55.726
4	Baljuvon	26	207	4.451	364.991	65.177
5	Khovaling	35	204	3.582	322.866	57.655
Total		203	1.309	22.934	1.768.077	315.728

Source: PMU, October 2018

/\* average exchange rate applied for period from 2012-2018

10. The impact results from machineries income in Project districts are the following:

a) 149 km of rehabilitated roads; b) 6 km of constructed waterline with water points for livestock; c) 1.6 km of river bank strengthening; d) 3 constructed cattle track (bridge) and e) 500 000 TJS spent budget by PUUs for improved infrastructure.

45 PUUs from Project districts provided with 510 head of improved rams (local breed “Hysar) under project Activity “ Sheep Breeding”.

11. Activity “Animal health” supported construction and establishment of 24 veterinary clinics (6 in Muminabad, 5 in Sh. Shobin, 5 in Baljuvon, 4 in Khovaling and 4 in Temurmali). In total, 145 342 livestock (heads) received veterinary services during project implementation at 164 villages.

12. The component “Income Generation activity for Women” benefited 883 HH, specifically:

a) 450 HH through provision of small ruminants (head); b) 110 HH (groups) through wool processing; c) 60 HH (groups) through milk processing and marketing (in Sh. Shohin district) and d) 13 HH in beekeeping activities and e) 250 HH through poultry activities.

13. The project has executed the geographical targeting for selection of the Jamoats and villages with the potential for livestock and pasture development (i.e. veterinary and extension services); (ii) encouraged the private sector to provide a wide range of ancillary services for enhancing livestock production; (iii) adopting a value chain approach to the livestock sector and identified the key constraints that are faced by women in the production, processing and marketing of meat, dairy and other livestock products; and (iv) replication/scaling up of successful initiatives. In addition, LPDP increased local employment and second tier benefits such as diversification of income sources, expanded business opportunities for indirect beneficiaries and a more sustainable management of natural resources, hence increased adaptation capacity to climate change and resilience to climate shocks.

## I. FINANCIAL ANALYSIS

14. **Objectives.** The objectives of the financial analysis are:

- (a) To assess the financial viability of the improved technologies and systems promoted by the Project and the increase in incomes from indicative investments; and
- (b) To set a basis for the economic analysis.

## B. Approach, Assumptions and Data

15. This Annex presents the ex-post economic and financial analysis (EFA) at the date of project completion. This work is based on illustrative models representing the main activities supported during the implementation of the LPDP Phase I. The key indicators used to carry out the analysis are net present values (NPVs), the internal rates of return (IRR) and the Benefit to Cost Ratio (BCR) calculated over the project duration (6 years) and its capitalization phase (10 years).

16. The primary objective of the analysis is to validate the technical and financial viability of project activities for targeted beneficiaries, and hence to examine the impact of the proposed interventions on family labour, cash flow and household incomes as to assess the overall economic viability of the project.

17. Data used in these models is drawn from the ex-ante EFA (2011), interviews with beneficiaries. PUUs and rural communities during Completion mission, the M&E system at project

level and national statistical sources on Tajikistan. In particular, information on labour and input requirements for various operations, capital costs, prevailing wages, yields, farm gate and market prices of commodities, input and farm-to-market transport costs were collected during interview with beneficiaries. Conservative assumptions were made for both inputs and outputs to avoid overestimation of benefits. A cash-flow analysis is finally carried out to present the “with” and “without” project analysis.

**18. Numeraire and prices.** The numeraire adopted in the analysis is the domestic price level expressed in domestic currency. The financial prices for project inputs and products are from 2012-2018 derived from market and government statistical sources, adjusted where necessary to represent farm gate prices.

**19. Exchange rate.** The exchange rate used in the analysis is fixed at 1 USD: TJS 5,6 computed as an average of the exchange rate prevailing during project implementation period.

**20. Labour.** It has been assumed that labour is often provided by households and is valued at TJS 25. Hired labour is priced at TJS 30 day, which is the prevailing market rate in the target area.

**21. Opportunity cost of capital.** A financial discount rate of 19 per cent has been used in this analysis to assess the financial viability and robustness of the investments. It has been calculated based on market prevailing interest rate on short/long loans. A social discount rate of 14,01 per cent (economic) has been calculated based on average weighted interest rate on short/long treasury bonds.

Table 4. Main Assumptions and Shadow Prices

	MAIN ASSUMPTIONS & SHADOW PRICES <sup>1</sup>					
FINANCIAL	Output		Price (in LC)/kg		Input Prices	Price (in LC)/kg
	Meat	35,00	Hay	1,20	Alfalfa seeds	25,00
	Milk (lt)	3,00	Alfalfa	1,50	Natural Grass seeds	40,00
	Honey	40,00	Oil cake	2,00	Fertilizers	2,00
	Eggs	0,80	Grain	1,20	Bee hive	400,00
	Chicken	30,00			Rural wage	20,00
	Goat	450,00				
	Sheep	600,00				
	ECONOMIC	Official Exchange rate (OER)		5,60	Discount rate (opportunity cost of capital)	
Shadow Exchange rate (SER)		5,91	Social Discount rate		14%	
Standard Conversion Factor		1,06	Output conversion factor		1,03	
Labour Conversion factor		0,83	Input Conversion factor		1,18	

<sup>1</sup> All prices expressed in Local Currency (TJS).

## Project target group and beneficiaries

**22.** The LPDP has benefitted 23 840 households (2 864 HH from WIGG; 883 HH from CIG; 21 715 HH from provision of agricultural machineries; 1 098 HH from improvement of sheep breeding; 30 HH beekeeping activities, 18 HH from milk collecting and marketing; 3 835 HH from vet. clinics services and 10 125 HH benefitted through technical assistance/trainings (2 385 women of the total number). The beneficiaries who received two or more benefits (e.g. training and machinery services) are included only once in total final number of households outreached in order to avoid double counting.

**23.** Overall, the project benefitted women, youth and men directly involved in the livestock and marketing activities. In addition, the targeted beneficiaries were exposed to 1 ha of demonstrations

in 167 villages of fodder promotion and production, with up to 167 households directly participating in the demonstrations. Around 10 125 households benefitted from the technical training provided under the Project. The 24 (initially planned 56) veterinary service centers was supported by the Project and benefitted some 3 835 households in their immediate vicinity and in addition cater to the service needs of adjoining villages. Consequently, the reduction in mortality rates in cattle and small ruminants was reduced by 1%. About 83,071 ha of pasture (average 409 ha per village) had improved. The income generating activities benefitted some 883 female-headed households.

24. In addition to production/productivity benefits, manifested in terms of increased assets, incomes and food security and nutrition among the Project's target group, the project generated significant institutional, good governance, environmental; employment generation and wider market based economic benefits. Table 5 present permanent employments established within LPDP Phase I:

Table 5. Permanent employments established within LPDP

Activities	No of jobs created
203 Pasture Users Union	566
Development of beekeeping	30
Milk collecting center	18
Vet clinics	24
WIGG on wool processing	110
WIGG on milk processing and marketing	60
<b>Total</b>	<b>808</b>

a/ 203 head of PUU, 203 accountant, 160 machinery operator

25. Table 6 reflects phasing of activities across years covered by the project and its adoption rate:

Table 6: Phasing of activities, beneficiaries and adoption rate under CIG and WIGG Activities

	BENEFICIARIES, ADOPTION RATES AND PHASING								Adoption rate
	PY1	PY2	PY3	PY4	PY5	PY6	PY7	Total	106%
<b>Fodder Seed Production</b>				2358	228			2585	
<i>Adjusted (adoption rate)</i>	-	-	-	2408	268	-	-	2675	
<b>Improved Livestock Group</b>	-	-	-	182				182	
<i>Adjusted (adoption rate)</i>				223				223	
<b>Beekeeping</b>				13				13	
<i>Adjusted (adoption rate)</i>				13				13	
<b>Small Ruminants</b>				418				418	
<i>Adjusted (adoption rate)</i>				450				450	
<b>Poultry</b>					218			218	
<i>Adjusted (adoption rate)</i>					250			250	
<b>Milk Processing</b>					58			58	
<i>Adjusted (adoption rate)</i>					60			60	
<b>Wool Processing</b>					105			105	
<i>Adjusted (adoption rate)</i>					110			110	
<b>Nr of Targeted HH</b>								<b>3.579</b>	
<b>Adopting HH</b>								<b>3.781</b>	



26. Table 7 presents total project costs occurred during project implementation phase, its outcomes and indicators and other information about the project:

Table 7. Project Costs and Indicators for Log frame

PROJECT COSTS AND INDICATORS FOR LOGFRAME				
TOTAL PROJECT COSTS (in million USD)		14.561		
Beneficiaries	23.840	People	6	Households
Cost per beneficiary	611	USD x person		3.851
Components and Cost (USD million)			Outcomes and Indicators	
Comp.1: Institutional Development	1.046	7%	In total 83 071 ha of the improved pasture agro eco-system, of which 45 000 ha (54% of the total) improved through pasture rotation plan, 15 000 ha (18 % of the total) of increased farmer accessibility to graze livestock in remote pasture land, 14 517 ha (17% of the total) improved through provision of machinery, 4 601 ha (6% of the total) improved through infrastructure	
Comp.2: Livestock and Pasture Development	11.020	76%		
Comp.3: Income Generating for Women	748	5%		
			Natural grass yield increased up to 47%	
Comp.4: Project Management *	1.621	11%	Livestock mortality decreased for 1%, number of livestock increased for 8%, small ruminants breeding improved for 24% through provision of improved rams	

\* Difference in foreign exchange totaling up 126 k (1%)

## C. Production and Marketing Models

27. Different models have been elaborate to determine the impact of the project for the communities involved. Particular focus has been given to livestock and productive activities as well as marketing of produce and processed products. In general, groups benefitting from such activities reported increases in production, self-consumption and sales. Simultaneously, this increase in production and the development of related business activities triggered second-tier multipliers in the economy. In the following sections, details on the models included in the EFA excel working file are provided.

28. Five production models were prepared to serve as building blocks for the analysis: (i) Superficial Improvement; (ii) Radical Improvement (iii) Controlled Grazing; (iv) Alfalfa; and (iv) Annual Grass. Table 9 shows the Production Models Summary results and the comparison of income in the without and with project (full development at Year 6) scenarios for the above activities. Incremental increases range

between USD 65/Ha for the Controlled Grazing model and USD 975/Ha for the Alfalfa (double harvesting) model. Benefit/cost ratios were also calculated for each model, which demonstrate the attractiveness of the new technologies.

#### **D. Sustainable Pasture Management and Livestock Development Plan**

29. The Project supported pasture and livestock improvement interventions including access to pastures, rehabilitation of pasture schemes, water supply, livestock migration, etc. which benefitted at large and formalized in a Pasture Management and Livestock Development Plan by the participating community. The preparation of such a plan followed 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 project village. The model has been developed taking into account the practical improvements that could be made to the existing pasture and livestock practices. A typical village represents the villages of the project districts. The numbers of households and livestock, agricultural area, outputs and other data of the typical village have been identified by averaging the villages' data in the project districts and using other representative information.

30. It has been identified, that the typical village has about 1105 Ha of pastures, including 750 Ha of winter pasture, 350 Ha of spring and autumn pasture and only 5 Ha of summer pasture. It cultivates about 32 Ha of forage crops and it harvests hay and straw from about 10 Ha of haymaking fields and about 100 Ha of grain fields on average. In addition, it purchases about 15 tones of cottonseed oilcake from the local ginning factories to feed its livestock.

31. According to Statistical Agency under the Presidency of the Republic Tajikistan in 2011 for 5-targeted districts (considered our WoP analysis) reflects average number of 277 heads of cattle and about 702 heads of sheep and goats as per typical village. In period of 2012-2016 (considered our WP scenario) number of cattle, sheep and goats increased for 8%. The with project scenario accounts for 296 head of cattle and 757 heads of sheep and goats that belongs to 720 persons (120 HH) in typical village.

32. A demonstrative model of feed/forage balance of the typical village was prepared to serve as a base for the analysis. This includes productivity estimates for pasture and forage production areas that were put in the context of the feed/forage demand in the villages. Based on the above assessment, a list of likely project activities has been developed to reflect the feed/forage balance of the typical village. This list together with the crops budgets, pasture improvement activities, machinery requirements, veterinary services and improved feed/forage balance forms a Sustainable Pasture Management and Livestock Development Plan (hereafter SPMLDP). The Plan's main objective was to define options for the increased quantity and quality of the overall feed/forage production, while reducing the pressure on overgrazed degraded areas and regenerating their productive capacity.

33. The project improved on average 409 ha of pastures per village by applying better technologies (in total 83 071 ha for 203 villages), particularly through the pasture improvements and controlled grazing activities. It has been estimated that on average 204,5 ha of summer pasture has been rented in order to balance the feed/forage demand (half of the total summer pasture area). It has been estimated area expansion under forage crops increased for 27 per cent (by 31 ha to 40 ha of land area) and haymaking fields for 20 per cent (by 10 to 12 ha).

34. It has been estimated that as a result of the SPMLDP's implementation, the feed/forage provision of the typical village increased up to 27 per cent of compared to without project scenario. Production of meat and milk increased by 46% and 10% and consumption - by 45% and 10% respectively. Sales of meat grew by 41%. Households' annual net income increased by almost USD 680 on average.

35. Summary. The financial analysis of the SPMLDP shows: (i) the increase in incremental income; and (ii) a high benefit/cost ratio and IRR 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. Table 9 presents a summary of the SPMLDP model while the details could be found in EFA excel working file.



Table 8: Summary of SPMLDP Model

Items	Unit	Without Project	With Project Full Development	Incremental	
				Value	%
<b>Number of households</b>	no	120	120	0	0%
<b>Population</b>	no	720	720	0	0%
<b><u>Land structure and livestock number</u></b>					
<i>Pastures</i>					
Summer pasture, total	ha	5	210	205	4090%
Own	ha	5	5	0	0%
Rented	ha	0	205	205	
Winter pasture	ha	750	742	-8,3	-1%
Spring/Autumn pasture	ha	350	350	0	0%
<i>Subtotal Pasture</i>		<b>1.105</b>	<b>1.301</b>	<b>196,1375</b>	<b>18%</b>
<i>Fodder crops</i>					
Alfalfa	ha	21,45	26,81	5,3625	25%
Annual grass	ha	10	13,00	3	30%
<i>Subtotal Fodder crops</i>		31,45	39,81	8,3625	27%
<i>Haymaking fields</i>	ha	10	12	2	20%
<i>Livestock number (in Sheep Units)</i>	SU	<b>3.302</b>	<b>3.583</b>	280,632	8%
<b>- Production</b>					
Meat	kg	24.576	35.856	11.279	46%
Milk	kg	181.996	200.337	18.340	10%
<b>- Revenues</b>					
Meat	USD	153.603	224.097	70.495	46%
Milk	USD	97.498	107.323	9.825	10%
<b>Total Revenues</b>	USD	251.101	331.421	80.320	32%
<b>Average Household's Benefits</b>					
Milk consumption	kg/capita	233,3	256,8	23,5	10%
Meat consumption	lt/capita	11,1	16,1	5,0	45%
Annual net income from livestock	USD/hh	1.942	2.471	530	27%
<b>Improvement Activities</b>					
<i>Pasture Improvement:</i>					
Superficial improvement (SI)	ha		80,4		
Radical improvement (RI)	ha		41,5		
Controlled grazing (CG)	ha		934,0		
<i>Other operations</i>					
Machinery package a/	set	0	1		
Livestock migration c/	SU	0	1.792		
Vet services, vaccination d/	SU	1.651	3.583		
Pasture renting	ha	0	205		
Payment to shepherd b/	SU	826	1.792		
<b>- Cost of 3-year Improvement Plan</b>					
	USD		<b>76.324</b>		
	hh		636		
<b>Total Net Income</b>	USD	233.025	296.579		
<b>Incremental Net Income</b>	USD		63.554		
<b>Incremental annual net benefits per USD1 of investment</b>	USD		<b>0,83</b>		
<b>NPV (@19%)</b>	USD		116.475		
<b>IRR</b>	%		76,6%		
<b>Switching Values:</b>					
- Incremental Revenues	%		84%		
- Incremental Production Costs	%		533%		

a/ a machinery package per one villages (indicative investment, other investments may include construction of watering points, shelters, spot range improvement, etc. as demanded by communities)  
b/ coverage: WOP - for only 25% of livestock; WP - for 50% of grazing livestock (mostly for sheep and goats)  
c/ livestock moving to summer pastures (payment to shepherd)  
d/ approximately 5 TJS per one SU. Coverage: WOP - 50% and WP - 100% of livestock

## E. IGA Models

36. The Project supported income-generating activities (IGA) for women. Three indicative models were prepared for IGA investments to illustrate the potential returns.

### (i) Poultry Package

37. This model indicates the potential returns over a 10-year period to woman-headed households that obtained a package of 18 local chickens and 2 roosters in addition to 5 existing ones. The analysis also assumes a more appropriate and effective vaccination and supplementary feeding for growers as well as construction of a shed that significantly raised the survival rate and consequently the output.

The total costs of the package are around USD 282. The number of eggs and growers available for sale and consumption increased from 160 and 5 without project to 3 600 and 20 with project respectively. The model indicates that the benefits improved from USD 24 without project to USD 178 with project per year. The returns to family labour day grew from TJS 8,4 without project to TJS 28.3 with project. NPV has been estimated at US\$ 4.940 over 10-years period, and B/C ratio is determined at 1,64.

## (ii) Small Ruminants Package

38. Under WOP conditions, the market expansion of subsistence livestock farmers is constrained by short and medium-term financing and their low productivity due to inappropriate livestock feeding practices and animal housing. This model indicates the likely returns over time to woman-headed households obtaining an investment package that includes the construction of a shed, purchase of 5 ruminants (3 goats and 2 sheep) and adoption of improved husbandry (vaccination, breeding and supplementary feed) amounting to about US\$ 895. The winter season feed requirements is estimated to meet from on-farm production and off-farm sources of purchased feed. The investment resulted in on average is about 8 animals available for sale and consumption per year. The model indicates that the household benefits improved by US\$ 521 with project per year. The returns to family labour day is around TJS 50.5 with project. NPV has been estimated at US\$13 271 over 10-years period, and B/C ratio is determined at 2,12.

## (iii) Bee-keeping Package

39. This model demonstrates the likely returns from an investment in ten beehives and one-year operational costs amounting to about US\$ 1 438. The investment resulted in average yearly production of 400 kg of honey and 132 kg of wax observed through period of 10 years. The model indicates that the household benefits improved by US\$ 2481 observed in the period of 10 years. The returns to family labour day is around TJS 352 with project.

40. Table 9 below summarises the financial incremental returns from the proposed models.

The highest NPV under WIGG was noticed at the beekeeping activities (USD 8.056) while the lowest for poultry (USD 882). The highest cost benefit ratio due to the small investment costs is for the small ruminants. Among pasture improvement models, alfalfa (double harvesting) demonstrates highest profitability assessed at NPV value of USD 975 and cost benefit ratio at 5,9. The smallest profitability occurs in models of superficial and radical improvement of degraded pastures.

Table 9. Financial Analysis

FINANCIAL ANALYSIS	PRODUCTION								
	Pasture Improvement incremental income (1 ha) (TJS)					SPMLDP incremental benefits (TJS)	WIGG Farm model's incremental benefits (TJS)		
	Superficial Improvement	Radical Improvement	Alfalfa	Controlled Grazing	Annual Grass	SPMLDP/HH	Beekeeping	Small Ruminants	Poultry
PY1	-810	-1.310	467	84	749	-325	3.800	2.645	2.364
PY2	300	420	1.772	84	749	104	4.294	913	844
PY3	300	420	1.772	84	749	229	6.741	913	844
PY4	300	420	1.772	84	749	446	9.488	913	844
PY5	20	20	467	84	749	490	12.235	913	844
PY6	300	420	1.772	84	749	530	14.982	913	844
PY7	300	420	1.772	84	749	529	17.729	913	844
PY8	300	420	1.772	84	749	242	20.476	913	844
PY9	300	420	467	84	749	553	23.223	913	844
PY10	300	420	1.772	84	749	502	25.970	913	844
NPV (TJS)	364	201	5.461	364	3.118	971	45.111	13.271	4.940
NPV (USD)	65,1	35,9	975,2	65,1	556,8	173,3	8.055,6	2.369,9	882,2

B/C Ratio	4,0	2,3	5,9	-	4,5	6,3	1,8	2,1	1,6
IRR	30%	24%	-	-	-	77%	-	-	-

## Milk Production Parameters

41. According to PMU monitoring data (Table 10) the average milk production per day (litres) in 2014 published at the baseline survey was 2,96 lt/day. The production increased and in 2016 the average production was 3,22 lt/day as published in Mid-term Review. The PMU monitoring evident further increase in production, the average production in 2018 was 3,58 lt/day. Total increase from period 2014 to 2018 was 21%.

Table 10. Milk Production in project districts of LPDP

District	Average milk production per dairy cow (liter/day)			% Increase from 2014 to 2018
	Baseline survey (2014)	Mid-term Review (2016)	PMU Monitoring (2018)	
Khovaling	2,9	3,2	3,7	28%
Temurmalik	2,9	3,2	3,4	17%
Muminobod	2,9	3,2	3,6	24%
Sh.Sohin (Shurobod)	3,1	3,3	3,8	23%
Baljuvon	3	3,2	3,4	13%
Average	2,96	3,22	3,58	21%

Source: PMU Monitoring Data, October 2018

42. According to data from the Impact Assessment Report published in 2018 (Table 11) quantity of milk produced per day per animal for controlled group is 3,067 lt/day and for those under treatment is 2,570 lt/day.

Table 11: livestock indicators and mechanism to achieve impacts on livestock herd and income.

Indicators	Whole sample		
	ATET	Control Mean	Treatment mean
Quantity of milk produced per day per animal (LT) (1890 obs)	-0.492***	3.067	2.570

Source: The Impact Evaluation Report, IFAD, 2018

## F. Economic. Analysis

Table 12. Results comparison (2011 vs. 2018)

	Ex-Ante EFA	Ex-Post EFA
<b>EIRR (%)</b>	21,0%	23,9%
<b>Discount Rate</b>	10%	14%
<b>NPV (million)</b>	11,76	0,7
<b>Project Duration</b>	<b>15 years</b>	

43. NPV =USD 702 thousand (discount rate with 14,01%; ERR =23,9% (during project design ERR estimated at 21% and NPV at USD 11.76 million with discount rate 10%).

44. The period of analysis is 15 years to account for the phasing and gestation period of the proposed interventions. The analysis attempts to identify quantifiable benefits that related directly to the activities undertaken following implementation of the components, or that can be attributed to the project's implementation.

45. Price estimates for tradable commodities have been based on the World Bank's Commodity Market Review (October 2018). All local costs were converted into their approximate economic values using a Standard Conversion Factor (SCF) of 1,06. The labour conversion factor was estimated at 0,83; imported conversion factor at 1,18 and exported conversion factor at 1,03. All values are given in constant 2018 prices.

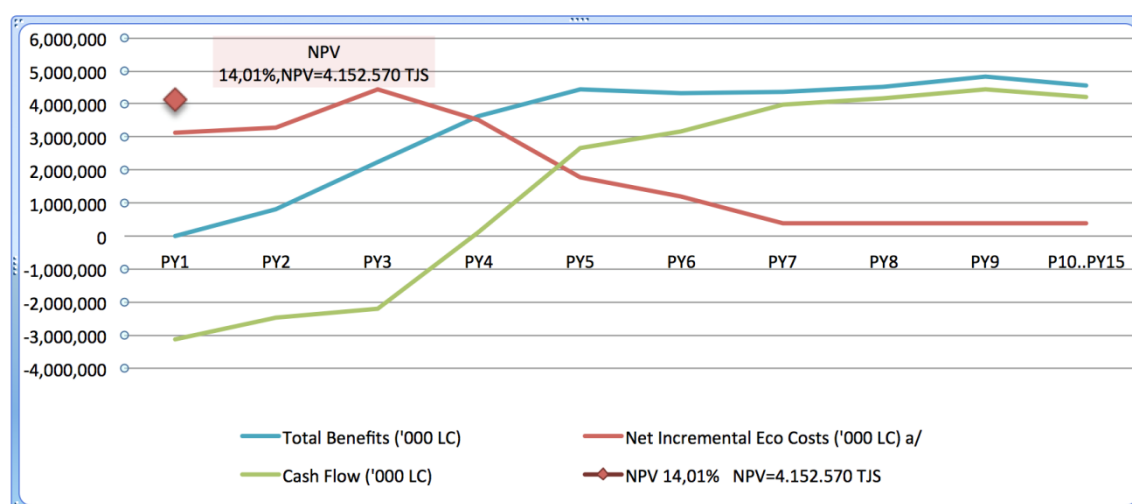
46. The incremental quantifiable benefit stream comprises of two main elements: (i) Sustainable Pasture Management and Livestock Development Plans (SPMLDP); and (ii) Income Generating Activities for Women (IGA).

47. 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 SPMLDP and IGA models is presented in Tables 13, while the details could be found in the previous sections.

Table 13: Net Incremental Benefits of LPDP (Economic)

		NET INCREMENTAL BENEFITS						Net Incremental Eco Costs ('000 LC) a/	Cash Flow ('000 LC)
		Fodder Production Model a/	SPMLDP/HH	Beekeeping	Small Ruminants	Poultry	Total Benefits ('000 LC)		
<b>ECONOMIC ANALYSIS</b>	<b>PY1</b>	0	0	0	0	0	0	3.141.805	<b>-3.141.805</b>
	<b>PY2</b>	480.621	-108.359	11.782	329.903	95.899	809.845	3.284.162	<b>-2.474.317</b>
	<b>PY3</b>	1.575.258	-102.854	29.963	579.140	142.400	2.223.907	4.441.231	<b>-2.217.324</b>
	<b>PY4</b>	2.742.479	29.223	54.127	677.346	134.619	3.637.795	3.508.743	<b>129.051</b>
	<b>PY5</b>	3.440.850	310.524	80.189	554.155	67.670	4.453.388	1.784.802	<b>2.668.586</b>
	<b>PY6</b>	3.187.789	544.621	110.300	469.105	32.568	4.344.382	1.192.930	<b>3.151.452</b>
	<b>PY7</b>	3.019.081	686.621	143.686	469.105	32.568	4.351.061	380.708	<b>3.970.353</b>
	<b>PY8</b>	3.103.435	753.083	177.414	469.105	32.568	4.535.604	380.708	<b>4.154.897</b>
	<b>PY9</b>	3.440.850	667.494	211.358	469.105	32.568	4.821.374	380.708	<b>4.440.666</b>
	<b>P10..PY15</b>	3.187.789	638.839	245.426	469.105	32.568	4.573.727	380.708	<b>4.193.019</b>
	NPV@ 14% ('000 TJS)		4.152.570			a/ includes 5 production models			
	NPV@ 14% ('000 USD)		702.150			b/ Eco costs started in 2013			
	<b>EIRR</b>		<b>23,9%</b>						

Graph 1. Cash flow of incremental benefits, costs and net cash flow



No financing flows have been undertaken in the calculations as they or represent transfer payments (grants, contributions and taxes).

48. Project benefit. Initially, the project planned to reach about 22 400 households from 100 targeted villages (assuming around 280 households per village on average, and reaching about 80%). The project outreached 23 840 households from 203 targeted villages (assuming around 120 households per village on average, and reaching about 106%)

49. Initially, the project planned to improve 108 500 Ha of pasture while at the projection completion it has been estimated 83 071 ha of pastures improved. In addition approximately 883 women benefitted from the income generating packages. Implementation of the Sustainable Pasture Management and Livestock Development Plans and Income Generating Activities for Women resulted in incremental production (at least US\$178), consumption and sales of meat and milk, which in turn improved nutrition status of rural population in the project districts and increased their income.

50. Summary. Given the above benefit and cost streams, the base case internal rate of return (IRR) is estimated at 23,9%. The base case net present value of the project's net benefit stream, discounted at 14%, is USD 702 thousand. The summary of economic benefit and costs analysis and the details of the calculations of economic benefit and costs streams for both elements (SPMLDP and IGA) are presented in Table 13.

51. 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 50% and an increase in total project costs by the same proportion would reduce the base IRR to about 2% for benefit and 10% for the cost. A one-year delay in project benefits reduced the IRR to 18%. With a two-year delay in project benefits, the IRR falls to approximately 14%. The results are presented in the following table:

Table 14: Sensitivity Analysis

SENSITIVITY ANALYSIS (SA)				
	Δ%	Link with the risk matrix	IRR	NPV (000 LC)
Base scenario			24%	4.152.570
Project benefits	-10%	Combination of risks affecting output prices, yields and adoption rates	20%	2.474.348

Project benefits	-20%		16%	796.127
Project benefits	-50%		2%	-4.238.536
Project costs	10%	Increase of labour costs and input non labour costs (i.e. fertilizer, seeds)	20%	2.889.605
Project costs	20%		17%	1.626.641
Project costs	50%		10%	-2.162.251
1 year lag in ben.		Risks affecting adoption rates and low implementation capacity	18%	2.090.305
2 years lag in ben.			14%	281.460

## G. Conclusions

53. The LPDP project has shown positive impact for targeted beneficiaries. Models elaborated for the ex-post EFA -through information collected during field visits, M&E system, national statistics office - indicated increase in income and in self-consumption therefore contributing to food security, livelihoods enhancements, gender empowerment and increased social and economic welfare.

54. As shown in models' results, LPDP activities were pivotal in increasing productivity and diversifying economic opportunities through value addition activities and a more sustainable use of pastures area and natural resources. In addition, the project triggered second-tier benefits through job creation and diversification of local produce, meanwhile putting into sustainable economic use resources left idle otherwise.

55. The outcomes from the LPDP are the following: (i) increased in yields of milk and meat production; (ii) increased 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) increased in productive capacity of pastures; and (vi) increased in women's ability to market their livestock products.

## Appendix 11: Environmental assessment (detailed analysis)

### Major site characteristics

1. **Climate change (CC):** The greatest concern in Tajikistan has been an increase in temperature, which has serious implications for its glaciers and water resources. According to the State Organization of Hydrometeorology, around 20% of glaciers have retreated and some have already disappeared. The biggest increase in annual mean temperature over a period of 65 years has occurred in southern Tajikistan, including the region of Khatlon (from +0.5 °C to +1 °C, with the highest increase of +1.2 °C in Dangara) and Dushanbe (+1 °C). Greater warming has occurred in winter than summer, and precipitation has decreased in the summer period. Extreme weather conditions are becoming more intense and frequent: number of days with very high temperatures (40 °C or over), occurrence of warm winds, drought events and anomalous extreme winter cold conditions.
2. It is expected that Tajikistan will continue to become warmer (between 2.6 °C and 5.2 °C by 2080), especially in the winter period, with prolonged dry periods and increased risk of glacier outbursts. Annual precipitation is expected to decrease by 3%, with a 13% decline in June-August and a 4% increase in December-February. Based on the National Communications to the UNFCCC, rising temperatures of 2-4 °C in February and March can lead to 20% decrease in winter-spring pasture productivity, a decline that is greatly exacerbated during dry spells. By contrast, in high mountain pastures, rising temperatures of 1.5-3 °C can increase pasture productivity by 25-50%.
3. The project area is one of the most vulnerable to CC. According to the Department of Agricultural Economics and Management, the regional index of CC vulnerability stands at 0.53 in North Eastern Khatlon (against 0.4 in average for the Country), which makes the project area one of the most vulnerable to climate change in the Country.
4. **Land degradation:** Land degradation is a key factor leading to low agriculture productivity and consequently low economic returns and reduced incomes for farmers. The total annual costs of land degradation in Tajikistan are estimated to amount around 7.8% of GDP. Available estimates suggest that 82.3% of all land and 97.9% of agriculture land (including pastures) in the country suffer some level of erosion. Degraded pastures contribute to landslides, which affect 36% of Tajikistan territory and 11% of its population. In Khatlon region middle erosion predominates (43-51.8%) followed by strong/very strong erosion (36.2-41%), and slight erosion (14-18.8%) with just 2-3.2% non-eroded land.
5. The main causes of land degradation are: (i) maladaptive farming practices, with intensive agriculture activity on slopes prone to erosion, excessive use of pesticides and fertilizers causing soil and water pollution, poor irrigation practices causing water erosion in 97% of farmland and salinization in 16% of irrigated lands; (ii) overgrazing causing medium to strong erosion in 89% of summer pastures and 97% of winter pastures; (iii) illegal forest harvesting, mainly for fuel, causing forest degradation, the risk of landslides, and a dramatic decrease of the country forest surface from 25% to 2% in the last century; (iv) population growth, with a density of rural population per hectare of arable land that has doubled between 1980 (3.1 per ha) and 2009 (6.3 per ha); (v) climate change that is already exacerbating land degradation problems.

### Project environmental impact

6. The project area, because of its poor vegetal cover, its topography and the nature of soils, is subject to severe land degradation and erosion processes, that are mostly due to overgrazing and excessive trampling by animals. The establishment of PUUs and the development of Pasture Management Plans, including in particular the introduction of rotation, has significantly contributed to improve management of pasture. This has led to reduction of overgrazing and

consequent degradation, and has even contributed to restore heavily degraded pastures, through protection and resting. The reduction of erosion on pasture should contribute to reduction of landslides, better conservation of water and hence reduction of flooding and associated river banks erosion.

7. Restoration of pasture will also contribute to enhance carbon sequestration: when pasture is properly managed, the production of aerial biomass increases (M&E data shows that it has increased by around 63% in pasture under PMP), but underground biomass (roots) also increases in similar proportion, and since this biomass is not consumed by animals, it durably sequesters carbon. This aspect is unfortunately very poorly documented at global level, and not documented at all at project level, and it would be very interesting to generate data and evidences on this topic, to show that livestock development can also be beneficial for the environment if properly managed.
8. In some areas, the degradation process has reached a stage where the surface layer of the soil has been washed away: in this case, pasture management is not the solution anymore, and more radical conservation measures need to be envisaged: soil protection and conservation, reforestation.

### **Contribution to climate change adaptation**

9. The project was designed in 2010 when climate change adaptation was not as high in the global agenda as it is today. It was therefore not considered a project objective as such. Tajikistan is one of the countries in the region that is most subject to climate change, which translates in particular by longer and more severe drought episodes in the summer. Several elements can lead to the conclusion that the project contributed to enhance the resilience of communities to climate change:
  - (a) The project has promoted fodder cultivation, harvesting and conservation; this will lead to improved availability of conserved fodder throughout the year during summer (drought episodes) and winter.
  - (b) The creation of PUUs enabled more livestock keepers, particularly the smaller ones, to access summer pastures located in the mountains. Summer pastures are less subject to climate change and to summer droughts than lowlands, therefore the project intervention had a direct impact on smallholder farmers' resilience to drought.
  - (c) Construction of water points and improved water supply in pastures (80 sub projects in total) have led to a better availability of water.
  - (d) The project has distributed varieties of fodder that are more drought resistant than the traditional varieties.
10. Climate Change adaptation is now an objective of LPDP II and is part of the project Theory of Change. The project now implement activities specifically addressing this aspect such as the diffusion of drought resistant fodder trees (Saxsaul - *Haloxylon ammodendron*), or the promotion of water harvesting and conservation technologies (Groasis waterbox).

### **Alignment with National Policies**

11. The Project is strongly aligned with, and contributes to, the priorities of the TNC of Tajikistan to UNFCCC, which identifies agriculture and livestock as one of the most vulnerable areas to climate change. The Project is also in line with the National Action Plan on Climate Change (NAP) and the Tajikistan Strategic Programme for Climate Resilience (SPCR) which will further integrate CC adaptation considerations in the National Development Strategy 2030 (NDS) that already includes environmental sustainability targets, and the Climate Change Adaptation Strategy for the period 2015-2030.



12. The Project has an ASAP component aiming to mainstream climate change adaptation into the whole investment (both current LPDP and the new project LPDP II). Project design incorporated all available information regarding climate change vulnerability, impacts and adaptation needs identified in the NCs to the UNFCCC, the National Action Plan on Climate Change (NAP) and the Tajikistan Strategic Programme for Climate Resilience (SPCR). Moreover, the project built on the transferable results from the detailed CC vulnerability assessment of the pastures and livestock agro-ecosystems implemented by IFAD in Kyrgyzstan. This resulted in the identification of CC adaptation measures (policy development, capacity building, adaptive management and restoration of pastureland, the use of climate-adapted species and varieties, climate-proof infrastructure, income-generation diversification based on natural resources-based value chain development).

**Environmental category**

13. Given that the project interventions contributed to limit or in some cases redressing the past degradation of the land resources and build the resilience of smallholders to climatic variability, the project environmental classification is confirmed as category B.



## **Appendix 12: Stakeholder workshop findings**

1. A project completion stakeholder's workshop took place at the State Enterprise Project Management Unit (SEPMU), in Dushanbe, on 5 December 2018. The workshop was attended by representatives of the State Committee of Investment and State Property Management, the State Enterprise "Pasture Ameliorative Agency" under the Ministry of Agriculture, the Department of livestock husbandry, poultry and fisheries, Ministry of Agriculture, the Republican Enterprise on breeding, thorough bred, artificial insemination, procurement and sales of breeding animals under the Ministry of Agriculture, and the Project Management Unit staff. The workshop was chaired by the Director of the SEPMU.
2. Following an opening statement by the Director of SEPMU and IFAD Country Programme Manager, the Completion mission members presented main mission finding, ratings and recommendations. During the second part of the workshop, participants provided comments to the presentation findings and ratings. Some clarifications were sought in the area of impact results which as the mission explained remains a challenging area, given several methodology shortcomings.
3. All participants highly appreciated IFAD support for a project greatly considered and highly rated by Government. There was full consensus over mission findings and ratings, the most impressive result being the innovative Pasture Users' Union Community Livestock and Pasture Management Plan (CLPMP) approach successfully piloted and showcased by LPDP.
4. All mission findings, ratings and recommendations were endorsed by the workshop participants.



## **Appendix 13: Final wrap-up meeting minutes**

1. A final wrap-up meeting took place at the State Enterprise Project Management Unit (SEPMU) on 5 December 2018. The meeting was chaired by Mr. Sadi Karimzoda, Director, and attended by his senior staff, IFAD Country Project Manager, Mr. Mikael Kauttu, IFAD Country Field-Presence Officer, Ms. Zainab Kenjaeva and mission members, Ms. Stefania Gnoato and Mr. Alban Bellinguez.
2. The SEPMU Director expressed his full satisfaction on mission main findings and recommendations, and thanked IFAD for its support in addressing rural development and poverty alleviation in Tajikistan.
3. The Director and his colleagues at the SEPMU concurred with mission main recommendations and ratings of project performance.
4. It was agreed that given the shortcomings in the Completion Impact Evaluation prepared by IFAD which restrict the use of results presented, the PMU will consider hiring the same consultancy contracted in 2015 for the MTR impact survey to conduct a follow-up with completion data collection. This exercise, firstly, should be based on the project logical framework key indicators, in particular those highlighted by the mission, and secondly should refer to the project baseline survey data.
5. It was concurred that the Project Completion Report will be finalized once this survey results will become available.
6. The DG, on behalf of the GOT, endorsed IFAD's disclosure of project ratings and Project Completion Report once it will be finalized in due course.