

UZBEKISTAN: Livestock Sector Development Project Job Diagnostic

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

UZBEKISTAN: Livestock Sector Development Project Job Diagnostic

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
UZAIFSA	Uzbekistan Agroindustry and Food Security Agency
CoFD	Council of Farmers, Dehkans and Owners of Household Lands
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GoU	Government of Uzbekistan
ha	Hectare
IFAD	International Fund for Agricultural Development
IFI	International Financial Institution
ILO	International Labour Organization
LSDP	Livestock Sector Development Project
MoA	Ministry of Agriculture
MoE	Ministry of Economic Development and Poverty Reduction
MoF	Ministry of Finance
PAD	Project Appraisal Document
PFI	Participating Financial Institution
SCVLD	State Committee of Veterinary and Livestock Development
TA	Technical Assistance
TOR	Terms of Reference
UFI	Uzbekistan Financial Institution
US\$	USD/United States Dollar
UZS	Uzbekistan Soum
VCD	Value Chain Development
WB	World Bank

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EXECUTIVE SUMMARY

Livestock is one of the major livelihood support systems and a social safety net in Uzbekistan. It constitutes about 50% of Agriculture Gross Domestic Product (AgGDP) and employs about 27% of the population¹, including in primary production and along the value chains. Yet, it is still characterized by low productivity, lack of access to finance and market. Addressing these constraints would not only help increase production and productivity and enhance commercialization but also ensure competitiveness of the sub-sector and creation of more and better paying jobs, including for women, large number of youths joining the job market and returning migrants.

The Livestock Sector Development Project (LSDP) strives for the development of a private-sector-led and vibrant livestock sub sector that contributes to economic diversification and ensures inclusive, equitable and sustainable economic growth. The project aims to achieve this by financing investments and providing technical assistance to livestock farmers and agri-business enterprises through: (i) livestock sector public investment framework and public services; and (ii) livestock value chain modernization, including through smallholders' inclusion into the livestock value chain, improving the access to finance of livestock farmers and building the capacity of participating financial institutions.

Through its livestock sector public investment framework and public services component, the LSDP financed the preparation of Methodology for Animal Identification, Registration, Movement Control and Traceability (AI&T); electronic system for monitoring livestock slaughter in specialized enterprises and meat delivery to the consumer market; and the Livestock Sub-Sector Development Strategy 2020-2030 and Investment Plan (2020-2015). It has also built the capacity of State Committee of Veterinary and Livestock Development (SCVLD), Research Institutions (RIs) and Samarkand Institute of Veterinary Medicine (SIVM) thereby improving the service delivery capacity of the SCVLD and research and development endeavours of the RIs and SIVM.

Through its access to finance (credit line) program, the LSDP financed a total of 512 sub-loans, including in dairy and meat production and processing, and honey and silk production. The sub-loans helped beneficiaries strengthen and expand (existing) and/or create (new) businesses and enterprises, including large scale private commercial farms, limited liability companies, private enterprises, joint ventures, dehkans (smallholder), family owned companies, joint venture limited liability companies, and unitary enterprises. The sub-loans, complemented by the technical assistance and trainings, have also helped beneficiaries increase production and productivity thereby helping businesses create additional (new) jobs. It is expected that the sub-loan beneficiaries will continue to expand their businesses, increase production and productivity, and create additional jobs as the businesses of the enterprises continue to expand.

Livestock is and will continue to be an integral part of the agriculture sector's employment. Future jobs in the subsector will not only be significant in number but also better in quality. The jobs are projected to be created in both primary (production) and downstream (processing) industries. The jobs will be inclusive, being available to women and youth not only in towns and cities but also in rural areas and secondary towns. They will also be key in lifting many out of poverty, helping the livestock subsector contribute to food security, spark economic growth and enhance job creation. However, realization of the promising job outlook in the subsector requires support from the government. The implementation of the recently developed Livestock Subsector Development Strategy and Investment Plan is key in ensuring the development of a vibrant and viable livestock industry and creation of more and better paying jobs.

¹ State Committee of the Republic of Uzbekistan on Statistics

CHAPTER ONE: ECONOMY, AGRICULTURE AND LIVESTOCK SUB-SECTOR

The structure of Uzbekistan's economy has not changed significantly since 2010 with agriculture, industry, and services each contributing about a third of the GDP. Uzbekistan's gross domestic product (GDP) increased rapidly from \$39.3 billion in 2010 to \$81.8 billion in 2016 before declining to \$50.5 billion in 2018 in current US dollar terms. In the first half of 2019, GDP growth accelerated again to 5.8% from 4.9%, largely due to significant investment financed by substantial increases in directed lending to state owned Enterprises (SOEs). An estimated 9.6 percent of Uzbekistan's population (3.2 million people) lived below the \$3.2/day poverty line in 2019, which is the international definition for lower income countries⁵. About 80 percent of these poor live in rural area and their livelihoods largely depend on agriculture⁶. In 2020, due to the Covid-19 outbreak, poverty in Uzbekistan is projected to increase after a long-term decline⁷.

Agriculture is the largest sector of and the largest employer in Uzbekistan's economy, and has a large role to play in reducing poverty and inequality through job creation. In 2019, agriculture accounted for 28 percent of GDP and 27 percent of the labor force. Along with overall economic growth, agricultural GDP grew at an average annual rate of 6.5% during 2012-2017. Global empirical evidence shows that growth in agriculture leads to two-three times greater poverty reduction than in any other non-agricultural sector, and the largest impact has originated from being employed in agriculture⁸. It also shows that jobs in agriculture are among the most poverty reducing and inclusive, and Uzbekistan is not an exception to this rule. However, low agricultural productivity remains a lingering concern due to farmers' limited knowledge of modern production and management systems thereby limiting the subsector's role in job creation.

Livestock creates half of the national agricultural wealth and 13% of the National Gross Domestic Product. In 2019, the sub-sector generated UZS 107.4 trillion, which was 49.8% of the national agricultural GDP. In 2019, the number of people employed in livestock and livestock derived jobs in Uzbekistan is 420 thousand. Livestock constitutes 45 to 67% of the household income in rural areas and it plays a significant role in maintaining the food and nutrition security of the rural people. Cattle represent more than 75% of the total livestock value-added. In 2019, out of the total livestock value-added, cattle in meat and milk contributed 76 percent, sheep and goat 9 percent, eggs and poultry meat 7.2 percent, fish 1.5 percent, bee, and rabbit are 0.5 and 0.3 percent, respectively, and other related products 5.5 percent. Within the livestock sub-sector, dairy makes up for 45% of the livestock gross value added. Dairy and poultry are relatively the fast growing and modernizing value chains. Rabbit meat and fisheries are newly emerging value chains which are receiving better government attention. Karakul pelts and honey production are also receiving government attention. The government has prioritized the development of the livestock sector to increase the value of agricultural output and stimulate rural employment hence the Livestock Sector Development Project (LSDP).

The Livestock Sector Development Project

The World Bank is supporting the government's Medium-Term Objective² of creating of up to 500,000 new jobs annually in three focal areas (i) private sector growth, (ii) agricultural competitiveness and cotton sector modernization, and (iii) public service delivery. The second is disaggregated to include (i) facilitating a market-led modernization of the cotton sub-sector to increase productivity, including measures to prevent forced labour; and (ii) diversifying agriculture toward higher value, more jobs and less water-intensive crop, including livestock.

² Uzbekistan, Cabinet of Ministers Action Plan for the Development of the Economy - World Bank Country Partnership Framework. Washington accessed Jan. 2020. [worldbank.org/curated/en/537091467993490904/pdf/105771-CAS-P153590-OUO-9-R2016-0098-Box360260B.pdf](https://www.worldbank.org/curated/en/537091467993490904/pdf/105771-CAS-P153590-OUO-9-R2016-0098-Box360260B.pdf)

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The development objective of the Livestock Sector Development Project (LSDP) is to improve livestock productivity and access to market in selected regions. The project design includes three components. 1) Livestock Sector Public Investment Framework and Public Services has the following sub-components: (i) Strategy, Policy, and Public Investment Framework; and (ii) Strengthening Livestock Sector Public Services. 2) Livestock Value Chain Modernization aims to have a strong emphasis on supporting the integration of small producers into value chains. It has the following two sub-components: (i) Credit Line for Private Investments; and (ii) Value Chain Development and Smallholder Market Inclusion. 3) Project Coordination, Management, and Monitoring and Evaluation (M and E), aims to finance (a) project management, including coordination and supervision of the implementation, financial management (FM), procurement, M and E, and Grievance Redress Mechanism (GRM); (b) impact assessments at midterm review and before project closure; and (c) training of project beneficiaries on safeguards requirements and awareness raising campaigns on labour practices in agriculture.

CHAPTER TWO: METHODOLOGY

The total number of credit line beneficiaries of the LSDP is 512, distributed throughout the 13 regions. Since it is nearly impossible to cover all the regions as well as the 512 beneficiaries amid severe travel and contact restrictions caused by the COVID-19 pandemic, it was deemed necessary to limit the selection of the selection of respondent to be limited to four regions/provinces to make implementation more efficient. Thus, the Team selected the following regions/provinces (in no particular order): Tashkent, Namangan, Samarqand, and Khorezm. The total number of credit line beneficiaries interviewed in these regions is 211. Efforts were made to include all livestock sub-sectors in the interview. Thus, a total of 66 credit line beneficiaries were included in the interview from other project implementing regions. The 66 interviewees were engaged in such activities as silk production, procurement and processing of fodder, purchase of other types of livestock (horses, camels, deer, ostriches etc.). Thus, a total of 277 credit line beneficiaries, including the 211 from the four selected regions i.e. Tashkent, Samarqand, Namangan and Khorezm regions plus 66 credit line beneficiaries from the other eight regions were involved in the interview.

The assumption behind selecting the four regions and the 277 credit line beneficiaries is to achieve representation of the four territorial zones of the Republic of Uzbekistan, not to mention the fact that these four regions comprise over 58% of all the Project credit line beneficiaries who consumed more than 60% of the total amount of loans allocated to the credit line component of the Project. And even more importantly, these four regions, collectively, are well-represented in all the categories of Farmers and processors as LSDP beneficiaries by both size and type of production, which helped considerably in the process of extrapolation of the study results to the overall livestock sub-sector of Uzbekistan.

Method of data collection and analysis

Data were collected using document reviews, including official and project progress reports, telephone interviews using semi-structured interview guidelines, survey using questionnaires, when appropriate³, and focused discussions. Data collected were then subjected to triangulation with an aim to verify data and information obtained on issues from different stakeholders and through different interviewers or methods. The data collected consisted of a mix of quantitative and qualitative data as well as of primary and secondary data. Where appropriate, quantitative data were also subjected to statistical analysis. The data collection and analyses processes were transparent and documented to allow also for a meta-evaluation of this Evaluation itself. Starting from a list of selected evaluation questions for the main evaluation criteria were developed with concrete reference to the results of the Project.

³Conversation with LSDP beneficiaries were conducted mainly via telephone.

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All sampled credit line beneficiaries went through the same set of interviewing process, consisting of the following questions as regards to “before” and “after” the project intervention:

- Herd size (number of livestock)- separately for cattle, small ruminants (sheep and goats), horse, camel, fish (number of ponds), beekeeping (number of beehives), poultry and sericulture
- Loan size (in US\$), including type of activity the fund is used for e.g. procurement of pregnant heifers, parent stock, genetic materials, equipment, machinery etc.
- Number of employees by categories, including on-farm, management/administration disaggregated by full-time and seasonal as well as by gender

Due to travel restrictions and social distancing requirements during the COVID-19 pandemics, all the interviews were conducted online via phone, Telegram and WhatsApp messengers, zoom conferencing and e-mail messaging. Each beneficiary was an object of monographic research via means of online communication.

The focus of the interview was to find out how many new full-time (including women), seasonal and indirect jobs were created thanks to activities induced by the project interference. Indirect jobs are referred to such jobs as those which were created outside the premises of the beneficiary entities due to creation of new value-added chains (intermediaries, retailers etc.). After interviews were completed, the total number of seasonal and indirect jobs was summed up to determine its correlation with the number of jobs created by each beneficiary and by each type of activity (sub-sector). The following coefficients for seasonal and indirect jobs were determined for each type of activity (sub-sector) (See Table 1)

CHAPTER THREE: JOB DIAGNOSTIC OF THE LSDP

The LSDP is implemented in all regions of Uzbekistan. The project is largely credit line and beneficiaries of the credit line are distributed in all regions (Table 2). Beneficiaries of the LSDP represent all forms of livestock production that existed throughout Uzbekistan, including

- Dairy production (cattle and goat)-all regions, and the highest in Samarqand, Kashkadarya, Ferghana, Khorezm, Bukhara, Andijan, Tashkent, Surhandarya
- Beef production (cattle)- all regions, and the highest in Samarkand, Kashkadarya, Tashkent, Bukhara, Jizzakh, Ferghana and Surhandarya
- Meat/Mutton production (Sheep and goat)-all regions, but more so in the dryer regions
- Poultry production (differentiated into commercial broiler (meat) and layer (egg))-in all regions but predominantly in Samarkand and Tashkent, closer to higher populations. Interest is also growing in the Ostrich industry, in the dryer western regions, as well as quail farming.
- Silk production- predominantly in Ferghana, Samarkand, Kashkadarya, Bukhara, Andijan, Tashkent, Surhandarya regions.
- Fishery and fish farming (aquaculture)-in almost all regions.
- Bee keeping- in all regions, and the highest in Ferghana Valley.
- Camel (milk) production-mainly in Karakalpakstan, Bukhara, and Kashkadarya regions
- Rabbit (meat) production-in all regions.

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Thus, inclusion of all the regions of Uzbekistan in the project is justified providing beneficiaries with opportunities to have access to finance hence pursue businesses of their choices thereby creating variety of job options both directly (permanent and seasonal) within confines of the businesses as well as indirectly outside of them.

Through its access to finance (credit line) component (US\$142.3 million), which constitutes the largest part (58%) of the total project financing, including Government of Uzbekistan's (GOU) and beneficiary contribution (US\$243.8 million) and IDA/IBRD allocation (US\$150), the Project thus far financed a total of 512 sub-loans (through nine Participating Financial Institutions (PFIs)), worth US\$ 139.6 million, including in dairy (milk), meat (cattle and small remnants), poultry (egg and meat), dairy processing, meat processing, horse, camel, fishery (aquaculture), bee keeping (honey) and silk (raw silk yarn and silk fabrics). The sub-loans received by credit line beneficiaries complimented with technical support provided helped beneficiaries strengthen and expand (existing) and/or create (new) businesses and enterprises, including large scale private commercial farms (n=297), limited liability companies (n=145), private enterprises (n=32), joint ventures (n=7), dehkans (smallholder) (n=5), family owned companies (n=5), joint venture limited liability companies (n=2), and unitary enterprises (n=1) (Table 1).

Table 1. Credit line beneficiaries, loan amount (US\$) and share (%) of sub-loans by Region

Region	No. of beneficiaries	Loan amount	Beneficiary contribution	Total amount	Region's beneficiary No. percentage share	Region's Percentage share from total loan	Loan amount per beneficiary
Andijan	20	5.875	2.19	8.065	4.00%	4.33%	0.294
Bukhara	38	6.063	3.795	9.858	7.60%	4.47%	0.16
Ferghana	45	11.980	6.243	18.223	9.00%	8.83%	0.266
Jizzakh	15	1.739	0.868	2.607	3.00%	1.28%	0.116
Karakalpakstan	14	4.237	1.759	5.996	2.80%	3.12%	0.303
Kashkadarya	22	4.146	2.153	6.299	4.40%	3.06%	0.188
Khorezm	69	8.379	5.567	13.947	13.80%	6.18%	0.121
Namangan	64	10.755	6.026	16.781	12.60%	7.93%	0.171
Navoiy	8	5.131	3.81	8.629	1.20%	3.55%	0.803
Samarqand	70	20.206	10.447	30.653	14.00%	14.89%	0.289
Sirdarya	26	8.290	6.539	15.093	5.40%	6.30%	0.317
Surhandarya	37	10.658	6.03	16.688	7.40%	7.86%	0.288
Tashkent Region	74	38.263	23.837	62.1	14.80%	28.20%	0.517
TOTAL	502	135.72	79.264	214.939			0.271

Source: author's estimation based on field data and the current study

The Project activities helped credit line beneficiaries create a total of 25,441 jobs, including 7,093 permanent, 9,369 seasonal and 8,979 indirect (value chain-induced) jobs. Importing pregnant heifers (dairy production) has created the largest number of jobs, including 2,778 permanent, 4,783 seasonal and 2,763 indirect jobs followed by purchase of equipment (dairy and beef processing) with 1,693 permanent, 1,715 seasonal and 914 indirect jobs and poultry (broiler and layers) that created 1,012 permanent, 1,076 seasonal and 1,976 indirect jobs. Dairy processing ranked third by creating 1,121 permanent, 1,256 seasonal and 1,752 indirect jobs. The number of jobs created for women is the highest in the dairy production followed by dairy processing and finally poultry.

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Table 2: Total number of jobs created, and jobs created per 1 million USD investment by sub-sector

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs created	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	(value chain) jobs	Total Jobs
Purchase of Cattle	301	51,819.66	2778	757	4,783	2,763	10,324	53.61	14.61	92.30	53.32	199.23
Poultry and Equipment	43	29,244.45	1012	206	1,076	1,976	4,064	34.60	7.04	36.79	67.57	138.97
Dairy Processing	51	28,586.44	1121	229	1,256	1,752	4,129	39.21	8.01	43.94	61.29	144.44
Purchase of Equipment	52	17,401.22	1693	424	1,715	914	4,322	97.29	24.37	98.56	52.53	248.37
Purchase of small ruminants	34	3,034.73	285	32	340	1,403	2,028	93.91	10.54	112.04	462.32	668.26
Other Livestock	16	5,170.26	139	44	148	142	429	26.88	8.51	28.63	27.46	82.97
Purchase of Fodder/Materials	5	464.81	65	18	51	29	145	139.84	38.73	109.72	62.39	311.96
All Regions	502	135,721.56	7,093	1,710	9,369	8,979	25,441	52.26	12.60	69.03	66.16	187.45

Source: author's estimation based on field data and the current study

The number of direct jobs created per 1 million USD investment is the highest in the small ruminants (meat production) sub-sector while the number of indirect jobs created per 1 million USD investment is the highest in the fisheries sub-sector, although the latter has very small sample size in the project. The number of jobs created for women per 1 million USD investment is the highest in animal feed production followed by dairy and meat processing, dairy production and finally meat production. The number of indirect jobs created per 1 million USD investment is the highest for poultry production. More direct jobs have been created in dairy production, poultry production and dairy and meat processing. The number of seasonal jobs created was the highest in dairy production.

Dairy production

Dairy production is the predominant sub-sector in the LSDP. It involved importation of pregnant heifers using sub-loans from financial institutions participating in the implementation of the LSDP. The LSDP financed a total of 310 sub-loans that facilitated the importation of 32,156 pregnant heifers with a total investment of US\$51.8 million. Of the total pregnant heifers imported, 804 died before calving and 80 per cent of which have been compensated by vendors and the other 20 percent died due to mismanagement at the farm level.

Through the sub-loans they received, credit line beneficiaries, in the dairy production subsector, were able to create a total of 10,324 jobs, including 4,783 seasonal jobs, 2,763 indirect jobs and 2,778 direct jobs. The total number of jobs created for women was 757. Considering the US\$ 51.82 million investment in the dairy subsector, the total number of jobs created per US\$ 1 million investment is 199, including 53.61 jobs that have been created directly in the beneficiaries' premises and 14.61 jobs were for women. Jobs created per US\$1 million investment is the highest for seasonal labour. Relatively, large number of jobs have been created in Namangan followed by Tashkent, Khorezm and Fergana. Jizzakh is the least in terms of jobs created and this is perhaps because of the relatively small number of credit line beneficiaries in the region (Table 3).

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Table 3. Beneficiaries, investment, and jobs created in the dairy sub-sector by region

Regions	No. beneficiaries	Project Investments. 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain) jobs	Total Jobs
Namangan	53	8,374.58	480	119	998	576	2,054	57.32	14.21	119.17	68.78	245.27
Samarqand	32	4,475.00	277	87	418	241	936	61.90	19.44	93.41	53.85	209.16
Tashkent region	36	17,067.71	484	110	675	390	1,549	28.36	6.44	39.55	22.85	90.76
Khorezm	52	4,058.31	276	84	521	302	1,099	68.01	20.70	128.38	74.42	270.80
Bukhara	29	2,927.00	183	47	315	182	680	62.52	16.06	107.62	62.18	232.32
Ferghana	29	4,225.72	295	59	508	293	1,096	69.81	13.96	120.22	69.34	259.36
Andijan	16	3,554.72	206	49	355	205	766	57.95	13.78	99.87	57.67	215.49
Kashkadarya	3	246.15	25	9	43	25	93	101.57	36.56	174.69	101.57	377.82
Surhandarya	22	2,410.17	201	67	346	200	747	83.40	27.80	143.56	82.98	309.94
Sirdarya	19	2,565.01	163	45	281	162	606	63.55	17.54	109.55	63.16	236.26
Jizzakh	1	60.00	3	0	5	3	11	50.00	-	83.33	50.00	183.33
Karakalpakstan	7	1,544.01	168	79	289	167	624	108.81	51.17	187.18	108.16	404.14
Navoiy	2	311.30	17	2	29	17	63	54.61	6.42	93.16	54.61	202.38
All Regions	301	51,819.66	2,778	757	4,783	2,763	10,324	53.61	14.61	92.30	53.32	199.23

Source: Authors' estimation based on data provided by interviewed beneficiaries.

The sub-loans, complemented by the technical assistance and trainings, have helped credit line beneficiaries increase dairy production and productivity. Beneficiaries were able to increase the productivity of milk on average from 5-6 litres/cow/day to 17-20 litres/cow/day. It is expected that the sub-loan beneficiaries will continue to expand their businesses, increase production and productivity, and create additional jobs as the businesses of the enterprises continue to expand.

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Cattle and Tractor "G'ULOMBOY IKROMBOY" Livestock Farm

The farm has 500 total heads of cattle, and 107 hectares of irrigated land. The farm received a sub-loan worth US\$126,800 and together with his own funds amounting to US\$140,000, it imported 33 heads of red and white Holstein Friesian heifers from Latvia. The heifers passed the acclimatization period very well. The farm also purchased two Belarus KPP-3,000 combine harvesters and one MTZ-80 tractor.

The Farm signed direct delivery contracts with the suppliers who also provided training in the farm territory. The training positively impacted five more neighbor farmers who expressed desire to sign import contracts with the same company. Besides harvesting forage, the Farm is getting yields of corn grains at the 35 tons/ha rate and wheat grains at the 6 tons/ha rate in the 107 hectares using machinery. The Farm also provides harvesting services to other farmers by charging 500,000 soums/hour. Before start of project, the Farm had seven permanent workers. As a result of the sub-loan, the Farm hired seven additional staff, all of them qualified specialists, including a veterinarian (young guy) technicians – four sales assistant women and two female cooks, two cattlemen and 7 male tractor drivers are members of permanent staff as well as 25 seasonal workers roughly half of which are women. These seasonal workers are hired during the harvest season. The farm's milk fat level is 4% and average milk production from one cow is around 26 liters per day. The Farm has a total of 500 heads of cattle, including 150 dairy cows which produce around 3,900 liters of milk every day. The internal daily use of milk in the farm is around 40 liters so the rest, 3,860 liters is sold for 3,200 soums/liter to a dairy plant, which is located 60 km away from the farm.

Salaries of the farm's permanent workers are individually fixed and range from one million to three million soums per month depending on the skill set and professional value of each worker. Staff benefits include one high pedigree calf a year for each worker and some forage from the farm stock. According to the Farm, staff have started to appreciate advantages of receiving a calf with higher pedigree in comparison to monetary rewards.

If there is decline in milk volume, The Farm manager talks first of all to milking ladies to find out if there is any problem with health or nutrition of cows.

The Farm's main focus in work environment is hands-on capacity building and providing workers with as much practical knowledge as possible while prioritizing retention and rewarding of those workers who demonstrate best efforts in learning applying the acquired knowledge.

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"CHORVA SANOAT INVEST" LLC

After successfully applying for the project loan in the amount of US\$236,600, the farm imported 64 heads of pregnant heifers, one milking parlor and one feed mixer without any delays or other problems in September 2019, - says the company general Manager. The heifers have acclimatized to local conditions quite well except loss of four heifers which were compensated by the exporting company. Thanks to the success of this sub-project the farm was awarded a status of a high-pedigree cattle breeding farm.

It is a new business for the entrepreneur and during the period of cooperation with the project the company hired six additional people permanently, including two women as well as employed 12 seasonal workers. Salaries for permanent staff range from one and a half million to three million soums. Staff benefits include additional bonuses for public holidays, hot meals in the enterprise premises and milk to carry home at the enterprise's expense.

However, in accordance with regulations for farms with a high pedigree cattle breeding status, the farm should have been 0.5 hectares of land per every head of the imported cattle (37 ha in total) but only 20 hectares were allocated.

The farm harvested 35 tons of corn silage per hectare, but they are buying a simple wheat grain husks at a very expensive price of 1,700 soums/kg from the Ohangaron District flour mill.

There are 40 dairy cows which produce 25 liters of milk daily in average. A nearby dairy processing plant procures the milk at 3,900 soums per liter. The milk price in the nearby market is similar but the farmer prefers to have long-term contract agreement with the plant because transportation of milk is carried out by the plant.

The farm management is happy to cooperate with the project, but they expressed their grievance upon the farm's relationship with the Xalq (People's) bank. The farm's application to the bank for 450 million soum loan for construction of a shed for cattle to be imported soon was rejected even when the farm management was ready for 18 per cent interest rate. They had to scrap up and use their own funds to construct a shed which is still ongoing, and the imported cattle had to stay for extended time in uncomfortable conditions.

Dairy processing

Credit line beneficiaries used sub-loans to procure dairy processing lines/equipment. The LSDP financed a total of 51 sub-loans for the procurement of dairy processing lines and equipment worth US\$28.6 million. While most of the dairy processors had their own dairy farms, some involved in collecting milk from surrounding farmers. Normally, there are two forms of collection of raw milk: collection of raw milk directly from farmers (and then transporting it to the processing point) and collection of raw milk at milk collection centers (and then transport to the processing point). The average distance of milk collection ranged from 5 to 40 km. Milk suppliers transported milk 30-80 km to a milk processor's facility and the supplier bore the transport cost.

Dairy processors generally tended to purchase raw milk at UZS3,000-4,000/liter. The price of milk also varied depending on the season and the region, for example, in Tashkent region the price of raw milk was 4,000 soums/ liter. Once raw milk is received, it is tested on the spot for fat content, acidity, and temperature (milk must be delivered at less than 5°C). Processors indicated that rejection rate is generally less than 5%.

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Through the sub-loans they received, dairy processors were able to create a total of 4,129 jobs, including 1,256 seasonal, 1,752 indirect and 1,121 direct jobs. The total number of jobs created for women was 229. Considering the US\$ 28.6 million investment, the total number of jobs created per US\$ 1 million investment is 144, including 39.21 jobs that have been created directly in the beneficiaries' premises and 8.01 jobs for women. Jobs created per US\$ 1 million investment is the highest for seasonal jobs. Relatively, large number of jobs have been created in Surkhandarya, followed by Tashkent, Syrdarya and Samarkand. Bukhara is the least in terms of jobs created even if it had more credit line beneficiaries compared to Navoiy (Table 4).

Table 4. Beneficiaries, investment, and type of jobs created in dairy processing by region

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain)	Total Jobs
Samarqand	10	4,515.39	131	31	196	273	600	29.01	6.87	43.41	60.46	132.88
Tashkent region	14	8,892.56	305	66	276	386	967	34.30	7.42	31.04	43.41	108.74
Khorezm	3	1,207.80	22	6	41	57	120	18.21	4.97	33.95	47.19	99.35
Bukhara	1	76.11	6	0	7	9	22	78.83	-	91.97	118.25	289.06
Ferghana	9	2,460.50	119	31	133	186	438	48.36	12.60	54.05	75.59	178.01
Kashkadarya	2	597.09	27	5	30	42	99	45.22	8.37	50.24	70.34	165.80
Surhandarya	7	5,569.99	247	34	277	386	910	44.34	6.10	49.73	69.30	163.38
Sirdarya	4	3,644.00	184	21	206	288	678	50.49	5.76	56.53	79.03	186.06
Navoiy	1	1,623.00	80	35	90	125	295	49.29	21.57	55.45	77.02	181.76
All Regions	51	28,586.44	1,121	229	1,256	1,752	4,129	39.21	8.01	43.94	61.29	144.44

Source: Authors' estimation based on questionnaire materials

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“BIO NATURAL FOOD” LLC

The company runs its business in the sub-sector of dairy processing mainly producing different types of cheese. The company received loan in the amount of US\$1,297,675 (for seven years). It used the loan, along with US\$ 436,428 of own investments, to construct a dairy processing plant with a daily capacity of 40-ton milk. The dairy processing equipment was delivered in June 2018. Right now, the plant is operating on a 30-ton daily capacity. 55 per cent of all processed milk is collected from farms of the Tashkent Province while the remaining 45 per cent is collected from the neighboring Syrdarya Province. The procurement price of the collected milk fluctuated at the range of 3,900-4,100 UZS per liter. In total, 17 farmers provide the plant with raw milk. Five of them are quite large ones capable of providing 4,200-8,400 liters daily and the remaining ones have the capacity around 1,000 liters every day. The distance between the plant and partner farms in the Sardoba District is 150 km and the milk are transported by 4,200 liter-capacity Isuzu milk truck. The revenue of the company in 2018 was 19 billion soums, and in 2019 it reached 21 billion and in nine months of 2020 the revenue already reached 25 billion. The net profit for the nine months of 2020 was 141 million soums but according to the chief accountant, in 2019, they suffered 1,616 million soums net foreign exchange loss. So, the estimated return of investment period from this project is seven years as indicated in the business plan.

Due to participation in the project, the number of permanent staff of the plant has reached 55, including 15 women. The salary of staff ranged from 1.2 million – 4 million soums/month while it was 630 thousand-2 million soums before participation in the Project-this.

The plant is producing 42 different types of dairy products, mainly of cheese as well as bio kefir. 80 per cent of goods distributed in Tashkent among 38 branches of Korzinka, 30 branches of Makro and 20 per cent are delivered to more than 100 smaller sized stores in neighboring areas.

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Poultry production

The LSDP financed a total of 43 sub-loans worth US\$29.2 million. Sub-loan beneficiaries used proceeds of the project for strengthening poultry i.e. egg (layer) and meat (broiler) as well as breeding (day-old chick production) farms, the latter being the least practiced. Evidently, only two of the LSDP beneficiaries were found to have been involved in breeding (production of day-old chicks) for marketing and distribution. Others that were involved in breeding did so mainly for internal use.

Through the sub-loans they received, poultry farms were able to create a total of 4,064 jobs, including 1,076 seasonal, 1,976 indirect and 1,012 direct jobs. The total number of jobs created for women was 206. Considering the US\$ 29.2 million investment, the total number of jobs created per US\$ 1 million investment is 138.9, including 34.6 jobs that have been created directly in the beneficiaries' premises and 7.04 jobs for women. Jobs created per US\$ 1 million investment is the highest for indirect (value chain) jobs. Relatively, large number of jobs have been created in Samarkand followed by Tashkent and Surkhandarya. Navoiy is the least in terms of jobs created even if it had more credit line beneficiaries compared to Andijan (Table 5).

Table 5. Beneficiaries, investment, and type of jobs created in the poultry sub-sector

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain) jobs	Total Jobs
Namangan	3	470.988	28	8	58	106	192	59.45	16.99	123.15	225.06	407.65
Samarqand	8	7608.03	214	46	225	419	858	28.13	6.05	29.57	55.07	112.78
Tashkent region	6	5100.102	186	78	174	326	686	36.47	15.29	34.12	63.92	134.51
Khorezm	6	1654.308	74	10	77	129	280	44.73	6.04	46.55	77.98	169.26
Bukhara	3	1,581.00	86	9	91	168	345	54.40	5.69	57.56	106.26	218.22
Ferghana	3	2,539.55	51	9	54	100	205	20.08	3.54	21.26	39.38	80.72
Andijan	1	256.00	21	0	22	41	84	82.03	-	85.94	160.16	328.13
Kashkadarya	2	1,298.99	54	17	57	105	216	41.57	13.09	43.88	80.83	166.28
Surhandarya	4	2,115.00	102	7	109	199	410	48.23	3.31	51.54	94.09	193.85
Sirdarya	1	1,685.19	50	0	53	98	201	29.67	-	31.45	58.15	119.27
Jizzakh	1	250.00	25	5	27	49	101	100.00	20.00	108.00	196.00	404.00
Karakalpakstan	2	1,800.09	105	10	112	205	422	58.33	5.56	62.22	113.88	234.43
Navoiy	3	2,885.20	16	7	17	31	64	5.55	2.43	5.89	10.74	22.18
All Regions	43	29,244.45	1,012	206	1,076	1,976	4,064	34.60	7.04	36.79	67.57	138.97

Source: Authors' estimation based on data provided by interviewed beneficiaries

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UMID LLC Poultry Production Complex

The farm received US\$977,000 loan from the Project. The loan amount, including US\$327,000 own funds was used to procure the following assets:

- i) Four pieces of refrigerators of 32-ton overall capacity with three modes of operation.
- ii) 5 sets of incubator equipment along with meat processing lines imported from Urumqi, China
- iii) 55,000 heads of high-pedigree day old chicks imported from Europe

While at the start of the sub-project the number of the farm staff was 537 people, by end of 2019 it reached 593 people with creation of 46 additional jobs. The number of seasonal workers of the farm has reached as many as 1,500 people, which is an increase of 300 from 1,200 employed before the start of the Project.

Egg production has been growing gradually and consistently. The total number of eggs produced in the farm in 2017 was 10.5 million, and in 2018 it increased to 12 million pieces and 12.3 million in 2019. For the first nine months of 2020, 11.4 million eggs were produced while as many as 14 million pieces expected to be produced by end of 2020.

Poultry meat production by the farm complex has been consistently increasing as well. In 2017, 3,495 tons of live-weight meat was produced. In 2018, the farm produced 5,769 tons and 5,917 tons in 2019. In 2020, the production has already reached the level of more than 5,562 tons of live-weight poultry meat.

Average salary of the staff increased by more than 70 per cent, the average salary increase ranging from 1,000,000 to 1,700,000 soums.

The farm is selling its commodities to 103 business entities throughout Uzbekistan. At the same time, however, due to negative consequences of COVID-19 pandemics, including restrictions for activities by restaurants and other public places 1,500 tons of poultry meat has been stored in the farm refrigerators for an extended period.

Lack of quality of fodder of local production, its relatively high price and obsolete specialized laboratory have triggered increase of dependency of the poultry sub-sector on imported fodder. The share of imported fodder in the farm's fodder procurement structure has reached unprecedented 90-95 per cent. 90 per cent of grains is imported from Kazakhstan, corn grains are mainly imported from Ukraine and soybeans are almost exclusively of a Russian import. Essential vaccines are procured in Austria while majority of feed additives is imported from Hungary and the Netherlands.

Based on preliminary agreements, the local government was supposed to subsidize 9,000 soums for every one of the 55,000 imported high-pedigree chicks, but no payment has been wired to the farm's account although four months have passed, says General Manager of the plant.

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Small ruminant production

The LSDP financed a total of 34 sub-loans worth US\$3 million. Sub-loan beneficiaries used proceeds of the project for the purchase of small ruminants (sheep and goat) that they used for meat production as well as breeding, the latter being the least practiced.

Through the sub-loans they received, small ruminant farms were able to create a total of 915 jobs, including 340 seasonal, 290 indirect and 285 direct jobs. The total number of jobs created for women was 32. Considering the US\$ 3 million investment, the total number of jobs created per US\$ 1 million investment was 301., including 94 jobs that have been created directly in the beneficiaries' premises and 10.5 jobs for women. Jobs created per US\$ 1 million investment is the highest for seasonal jobs. Relatively, large number of jobs have been created in Kashkadarya followed by Samarkand and Jizzakh. Surkhandarya is the least in terms of jobs created even if it had more credit line beneficiaries compared to Khorezm who had the least number of beneficiaries (Table 6).

Table 6. Beneficiaries, investment, and jobs created in the small ruminant's sub-sector by region

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs created	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain) jobs	Total Jobs
Namangan	2	170.00	13	0	7	6	26	76.47	-	41.18	35.29	152.94
Samarqand	10	886.94	83	2	97	83	263	93.58	2.25	109.36	93.58	296.53
Tashkent region	2	152.00	11	2	20	17	48	72.37	13.16	131.58	111.84	315.79
Khorezm	1	250.16	10	0	15	13	38	39.97	-	59.96	51.97	151.90
Kashkadarya	12	822.50	125	22	149	127	401	151.98	26.75	181.16	154.41	487.54
Surhandarya	1	60.00	8	0	10	8	26	133.33	-	166.67	133.33	433.33
Jizzakh	6	693.13	35	6	42	36	113	50.50	8.66	60.60	51.94	163.03
All Regions	34	3,034.73	285	32	340	290	915	93.91	10.54	112.04	95.56	301.51

Source: Authors' estimation based on questionnaire materials

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SHEEP BREEDING FARM "IBROXIM-FAZLIDDIN CHORVASI"

This farm is a Jizzakh-based beneficiary and Sirojiddin Ortiqboyev is the head of the farm. The farm was established in 2016 and it has 155 heads of cattle as well. The farmer has a six-year experience in professional sheep farming. Now the number of sheep has reached 1,800 heads but only 300 hectares of pasture is at the farm's disposal, when as per regulations the farm is eligible to use up to 1,000 hectares of pastures.

The farm received US\$72,000 loan in the framework of the Project and used the proceed to import 870 heads of Edirbay breed ewes from Kazakhstan. After start of cooperation with the project, five new jobs have been created as well as 8-10 seasonal workers are hired when needed.

Salaries of workers ranged from 1,500,000 soums to 4,000,000 soums per month depending on their job responsibilities. Besides, all workers are permitted to bring their own sheep to the herd for grazing and breeding purposes.

In the framework of the Governmental programme "Every family is an entrepreneur" the farm annually provides lower price meat to at least 60 economically challenged families through farmers' fair markets.

Restraints regarding land area for fodder production and recently introduced VAT are of main problems for the farm, - says the farmer.

The farmer intends to expand cooperation with the World Bank Project to procure 1,000 heads of karakul sheep to produce meat, astrakhan fur and wool.

Other types of livestock (fish, camels, horses, apiculture, deer, rabbit, and ostriches)

The number of credit line beneficiaries involved in these subsectors is small throughout country. Because of this, all the 16 beneficiaries were interviewed, including those located beyond territories of the four selected regions. The LSDP financed a total of 16 sub-loans worth US\$ 5.1 million. Sub-loan beneficiaries used proceeds of the project for the purchase of live animals e.g. camel, horses and fish (fingerlings) and equipment.

Through the sub-loans, beneficiaries were able to create a total of 429 jobs, including 148 seasonal, 142 indirect and 139 direct jobs. The total number of jobs created for women was 44. Considering the US\$ 5.1 million investment, the total number of jobs created per US\$ 1 million investment was 83, including 27 jobs that have been created directly in the beneficiaries' premises and 8.5 jobs for women. Jobs created per US\$ 1 million investment is the highest for seasonal jobs. Relatively, large number of jobs have been created in Jizzakh followed by Tashkent and Bukhara. Namangan is the least in terms of jobs created (Table 7).

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Table 7. Beneficiaries, investment, and jobs created in the sub-sectors by region

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs created	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain) jobs	Total Jobs
Namangan	1	120.00	5	0	3	4	12	41.67	-	25.00	33.33	100.00
Samarqand	1	56.00	6	1	10	11	27	107.14	17.86	178.57	196.43	482.14
Tashkent region	3	793.00	33	10	35	31	99	41.61	12.61	44.14	39.09	124.84
Bukhara	3	922.31	22	5	30	31	83	23.85	5.42	32.53	33.61	89.99
Ferghana	1	1,952.47	8	4	7	8	23	4.10	2.05	3.59	4.10	11.78
Jizzakh	5	606.49	35	15	39	35	109	57.71	24.73	64.30	57.71	179.72
Karakalpakstan	2	720.00	30	9	24	22	76	41.67	12.50	33.33	30.56	105.56
All Regions	16	5,170.26	139	44	148	142	429	26.88	8.51	28.63	27.46	82.97

Source: Authors' estimation based on data provided by interviewed beneficiaries

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Private Fish Farming Enterprise "Pulat Baliq Xavzasi"

The enterprise is in Pastdargom District of Samarqand Province. They received US\$56,000 loan from the LSDP to import a refrigerator equipment from Turkey.

"These activities created opportunity to hire additional 18 people, including four women", - says Tulqin Juramurodov, head of the enterprise. In 2020, the enterprise was awarded a status of fish-farming cluster which enables it to exempt all taxes for first three years. In total, the enterprise employs 60 full-time and 40 seasonal workers.

Permanent staff salaries range from one million to three million soums depending on their skill set and are provided with hot meals three times a day. Every worker gets a monetary bonus for public holidays and significant family events like weddings.

The enterprise has 35 ha of open fishponds, 1 ha of fish laboratory and fish nursery of 1.15 ha. In open ponds, the enterprise produces 7-8 tons of fish per ha and using intensive technologies the enterprise produces 200 tons of fish per 1 ha of closed greenhouse-type ponds. Besides traditional local fish breeds, we crossbred African catfish with local catfish and received beige colored hybrid which proved to be highly productive. In the ponds they use 23°C warm underground water which they pump from 360 meter deep.

Besides that the enterprise opened two public dining places. The enterprise has around 300 clients which buy fry from them. In total around 70 per cent of fry is sold within the territory of the Pastdargom District and the rest is delivered to neighboring districts.

The enterprise closely cooperates with Samarqand Veterinary Institute. As per regulation of a governmental program every young family willing to have a fish breeding farm is eligible to receive 30 million UZS to procure fry from fish breeding farms. So, the enterprise annually provides 20 young families with fry for total of 600 million UZS. Besides the genetic materials the starting fish farmers receive consultancy on fish breeding and feeding technologies. If the farm is located nearby the enterprise specialist goes to the farm and inspects the conditions and feeding routines of the farm. If a farm is located far, the specialists provide consultancy after receiving full information about the farm. Usual problems that young farmers frequently encounter are mold and algae on water, problems with temperature control etc.

The enterprise is cooperating with 64 other fish farming entities of the district. They are planning to participate in more projects initiated by the World Bank and receive 100,000 USD of loan to establish processing and fish cannery factory to produce commodities for export and for procurement by public educational institutions

Usmonjon Shamuradov in Bukhara Province received a project loan in the amount of 674,800 USD to develop his fish farming business. He has a 175 ha pond farm in Bukhara, with 50 ha fry-nursery ponds, 25 ha bloodstock ponds, 100 ha grow-out ponds, and produces 5t/ha, and 500t/year. He breeds fry in April, when water temperature is 18°C, then they have nursery time in ponds, and taken then indoors in winter, where he gets some growth. The fry is then restocked into ponds in the following March and harvested October–December, an 18-month cycle. He is attempting to reduce cycle length and improve pond efficiency and eliminate the need for fry pond, and increase grow-out potential capacity by 50% with no new ponds. This will be by breeding tropical fish (e.g. pangasius, sea bass etc) fry in winter in an indoor Recirculation Aquaculture System (RAS), introduce the fry into ponds in March, and harvest later in the same year. This will reduce the production cycle to less than 12 months. The development will require capital investment and a need investment to build the RAS facility. He trains university and college students and has developed strong relationships with industry in Vietnam and Thailand, and also has good relationship with fish association and fish institute and is always keen to help other farmers and develop the industry. The entrepreneur had problem to tell us exact number of families that he provides fry to. Besides he provides these families with consultancy on technologies of fish breeding, growing, pond management etc. Besides fish farming he has a 500-ton capacity fish storage premises. According to him he is planning to expand his business by taking over not only production cycles but also storing and marketing. Usmonjon informed us that he is cooperating with colleagues in Thailand.

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Private Farm "Camels cattle"

Farmer Otabek Omonov told us that in the framework of cooperation with the World Bank he received a 80,000 USD loan to import 20 heads of camels of a second or third pregnancy. Now, the total number of camels has reached 75 heads. Each milking camel is milked three times a day and total milk per day has reached 15 liters. Camel milk is mainly used for dietary treatment and medical purposes. The farm provides many sanatoria around the country. Sometimes people come from neighboring countries Kazakhstan, Kirgizstan and Tajikistan to take camel milk back home. The price of milk at the farm gate is 20,000 soums per liter. In Tashkent metropolitan area the same milk is sold at the price of up to 40,000 soums per liter.

Participation in the project provided the farm opportunity to open 5 more permanent jobs. Salaries in the farm range from 1,500,000 soums to 2,500,000 soums and staff benefits include free hot meals and leisure places near place of work.

By next year the farmer is planning to start a milk processing and packaging line. The farm itself is multi-purpose with production of 27 different types of commodities. Recently he started business of importing livestock from Kazakhstan and reselling to neighboring farmers and dehkans. The farmer had a plan of concluding a 3,000,000 USD contract with partners from Kirgizstan to import different types of livestock but the contract mandates payment of 450,000 USD in VAT which is beyond affordable for the farm. As an alternative the farmer attempted to establish a joint venture with Kirgiz and Kazakh partners, they have been reluctant citing that there is no VAT for such operations in their respective countries.

The farmer is doing a fine job helping his community as well. In the framework of the governmental program "Every family is entrepreneur" I sell at affordable prices different livestock including camel foals. The problem is that the is due 15% VAT with no incoming VAT to offset the outgoing VAT, besides, there is 16% Farmers Council fee plus a reasonable retail margin of 10% which equals over 41% of increase of costs for those families. In order to increase popularity of that programme the Government should provide some privileges to participants' – says the farmer.

Private Farm "Azizbek chavandoz"

The farmer is participating in the Project. He received a 200,000 USD loan in 2019 to purchase 80 heads of qorabayir horse breed. After successful loan contract and transport of the animals from Kazakhstan, there was no problem with acclimatization of the pregnant mares.

As result of the activities six additional full-time jobs have been created. They are working on improvement of the horses' genetic traits of young horses. By age of 4 or 5 they are ready to compete in sports competitions. Every foal is generating up to 5,000 USD of revenue as a demand for them is quite high. The farm management is intending to continue cooperation with the project to expand the business by adding more premises and animals. Besides, the farm is working on creating a genetic laboratory. Only one problem, that of limited pastures and their low output is hindering further development of the business.

Animal feed production

The LSDP financed a total of 5 sub-loans worth US\$465,000. Sub-loan beneficiaries used proceeds of the project for the purchase of feed ingrained and farm machineries. Through the sub-loans, animal feed producers were able to create a total of 145 jobs, including 51 seasonal, 29 indirect and 65 direct jobs. The total number of jobs created for women was 18. Considering the US\$ US\$465,000 investment, the

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total number of jobs created per US\$ 1 million investment was 312, including 140 jobs that have been created directly in the beneficiaries' premises and 39 jobs for women. Jobs created per US\$ 1 million investment is the highest for seasonal jobs. The number of jobs that has been created in the various regions did not differ significantly although Kashkadarya is the least in terms of jobs created (Table 8).

Table 8. Beneficiaries, investment, and Jobs created in the fodder production sub-sector by region

Regions	No. beneficiaries	Project Investments, 000 USD	Total direct jobs created	Total Women hired	Total Seasonal jobs created	Total Indirect jobs created	Total Jobs created	Jobs Created per 1 mln USD				
								Direct Jobs	Jobs for Women	Seasonal Jobs	Indirect (value chain) jobs	Total Jobs
Namangan	1	90.00	5	0	20	4	29	55.56	-	222.22	44.44	322.22
Tashkent	2	134.95	33	10	15	12	60	244.53	74.10	111.15	88.92	444.61
Khorezm	1	149.86	22	5	10	8	40	146.81	33.37	66.73	53.38	266.92
Kashkadarya	1	90	5	3	6	5	16	55.56	33.33	66.67	55.56	177.78
All Regions	5	464.81	65	18	51	29	145	139.84	38.73	109.72	62.39	311.96

Source: Authors estimation based on interview materials

ASL PARRANDA. Production of livestock feed.

The enterprise is producing livestock feed with capacity of 5 tons per hour. It employs 10 permanent workers including three women receiving a salary of 1-2.5 million soum per month, plus bonuses for every public holiday. According to the interviewee, the equipment is quite modern, compliant with today's environmental safety requirements saving up to 25 per cent of electric power in comparison with older Russian prototypes. The older analogue was mixing only 85 per cent of ingredients while this one mixes 99.5 per cent leading to 15 per cent improvement of the feed quality. They produce livestock feed using 20 different ingredients and 15 of the total feed produced is used in its own poultry farm and the rest is sold to other farmers and enterprises.

Honqa Omuhta Yem - Private Enterprise Ruslanbek

The compound feed producing equipment was delivered in June of 2019. The company lost almost five months due to bureaucratic procedures of the local government. Firstly, when he applied for permission to construct the facility the district hokim (governor) delayed the process several times citing his "being very busy with the cotton campaign". Then, the district electricity department rejected the enterprise a permission to install a power transformer although all the necessary prepayments had been made. Finally, all the problems were solved with direct help from Deputy of Regional governor on investment Shavkat Tulaganov. The company managed to create 10 new jobs, including three for women. The farm has 20 hectares of irrigated land, but the local government would not allow it to be used and instead they gave the farm 26 ha of low-fertility land area remotely from the farm. So, the farmer has struggled to meet the farm's demand to produce 6,000 tons of corn grains annually.

CHAPTER 4: JOBS OOUTLOOK OF THE LIVESTOCK SUBSECTOR BY 2030

In the livestock subsector, most jobs are created in beef and dairy production. Estimating job creation in the livestock subsector based on number of animals and labour requirement (man/year) shows that more than half a million workers are involved in livestock production in 2018 (Table 9). The most labour-intensive subsector is dairy production, which requires milking, feeding and animal caring. Livestock employment is likely larger, given that most of the rural population keeps between one and two cows and several ruminants. This employment is, however, often informal, and part-time, tailored for subsistence rather than commercial activities⁴.

Table 9⁵: Employment breakdown in livestock subsector of Uzbekistan in 2018

Livestock type	Number of animals ('000)	Labour requirement norms (man/year)	Estimated number of workers ('000)
Cattle	12,841	0.02	256.3
Dairy cows	4,626	0.05	231.3
Small ruminants	21,581	0.0012	25.9
Poultry	86,375	0.0005	43.2
TOTAL			556.7

The annual population growth rate in Uzbekistan is around 1.8 per cent and its demand for livestock commodities is growing accordingly. Diversification of agriculture in the country has triggered acceleration of development of the livestock sector. All these factors necessitate increase of jobs in the sector. As estimations of the dynamics of growth in the livestock subsector in the last decade show that by 2030, the number of permanent jobs in the sector will increase by 167 per cent or by 706 thousand.

Table 10. Job outlook in livestock subsector by 2030

	2019	The comparative coefficient of 2018 compared to 2008, %	2030	Labour requirement norms, man per year	2030
	Number of animals, '000		Estimated number of animals, '000		Estimated number of workers, '000
Cattle	8,215	155.38	12,764.7	0.02	255.29
Dairy cows	4,626,8	130.33	6,030.0	0.05	301.49
Small ruminants	21,576.1	152.63	32,931.4	0.0012	39.52
Poultry	86,393.6	253.75	219,226.9	0.0005	109.61
TOTAL					705.92

⁴WB Uzbekistan Agri-Food Job Diagnostic

⁵ Source: WB staff estimate based on the data from SSCU and MOA.

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Source: *author's estimation based on the current study*

Creation of additional jobs through increase in the livestock headcount directly depends on increase in the number of dehkan households. The reason is that the role of dehkans in the country's agricultural sector is growing day by day. According to statistics, in 2020, 4,981.5 thousand dehkan farms were registered, which led to the significant increase in share of dehkan farms in the production of agricultural products and the area under crops attached to them.

Table 11: Livestock distribution by form of management (2019)

Species	Forms of Management			Total	Dehkan % of Total
	Commercial farms	Dehkan	Others		
Cattle	591.2	11,732.7	160.5	12,484.4	94%
Cows	199.9	4,223.2	40.7	4,463.8	95%
Sheep and Goats	2,458.8	17,836.8	1239.7	21,535.3	83%
Poultry	11,191.8	45,076.2	24,262.2	80,530.2	56%

Source: *State Statistics Committee of the Republic of Uzbekistan, 2019*

With increase in the number of dehkans, the number of animals also increased, which in turn means an increase in the production of livestock products, as well as the regular provision of the population with vital products such as milk, meat, eggs. Evidence available shows that the number of livestock and poultry in the country has increased sharply. In 2020, compared to 2000, the number of cattle increased 2.65 times, cows 2.10 times, sheep, and goats 3.04 times, poultry 5.91 times, horses 1.89 times. This has implications to job creation in the sector as significantly large number of dehkans are involved and will continue to involve in livestock production.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The livestock subsector can be instrumental for Uzbekistan's job creation. More jobs in this subsector would be underpinned by the interdependence between primary production and downstream processing industries. The job outlook presented in the section above ascertains this. Livestock production would continue to be an integral part of the agriculture sector's employment. Future jobs in the livestock subsector could not only be larger in number but also better in quality. They are projected to be created in both primary (production) and downstream (processing) industries with market opportunities, which would help make these jobs more productive and sustainable. They will also be inclusive, being available to women and youth not only in cities but also in rural areas and secondary towns. And, they will be key to lift people out of poverty, helping the livestock subsector contribute to food security and spark economic growth. Realization of this promising job outlook requires support from the government even though the jobs are more likely and largely to be created by the private sector.

Recommendations

The jobs outlook in the livestock subsector is significantly dependent on the development of a vibrant and viable livestock industry. This in turn means that efforts must be made to address key challenges that constrain the development of the sub-sector. The challenges and recommended actions are described below:

Fragmentation of the livestock production system: The large proportion of Uzbekistan's livestock is kept by *dehkans* in a subsistence-oriented fragmented production system. These smallholders are small, fragmented, and low in productivity that have limited capacity to procure and apply modern technologies to be competitive and increase production. This kind of fragmented production system cannot attain scale benefit if it is not transformed and consolidated, either vertically or horizontally, along the livestock value chain hence farmer organizations.

Land tenure, Animal feed & nutrition and natural resource management: Land in Uzbekistan is owned by the government. The lack of private ownership of land and restrictions placed on producers and investors to reallocate land for different crops at their own hindered expansion of land for forage production, even if the producers want to do so. Insufficient animal feed resources to support the growing livestock population remained to be one of the main reasons for low animal production and productivity. Thus, allocation of sufficient land for forage production will help improve production and productivity and creation of jobs.

Gaps in veterinary and animal health services: The veterinary and animal health services in Uzbekistan has a limited capacity in terms of well qualified human resource, laboratories, surveillance system, to deliver adequate and efficient veterinary services. It is critical to put in place a well-funded, functioning veterinary services and National Laboratories Network in line with the OIE international standard to be able to reduce morbidity and mortality. Without adequate and efficient veterinary services, it is unthinkable to transform the sub-sector and be productive enough to meet the growing domestic demand in Animal Source Foods (ASF) and be competitive in the global export markets.

Low livestock breed and genetics: Livestock productivity in Uzbekistan in terms of yield per animal is low compared to countries in the region. Much of the reported growth in the livestock sector since the

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transition is largely derived from increases in herd sizes, not so much from the increase in productivity. This is not a sustainable path to follow in a country where land and water resources for animal feed production is continuously shrinking and allocated for other non-livestock uses. The way forward, therefore, is to invest in appropriate technologies that improve the productivity of the existing breeds and introducing new highly productive breeds.

Not well-developed livestock value chain: The livestock value chain in Uzbekistan is not well developed. The large proportion of the national livestock production, meat, milk, eggs, skin, and wool is produced by the *dehkan* farms and most of it is home consumed and the remaining small volume are sold for neighbours at village markets without much value addition and traceability mechanisms. Processing facilities for dairy, meat, and eggs, hides, and skin and karakul pelts and wool, as well as marketing infrastructure, including physical and information infrastructure, etc., need to expand to meet the growing demand for quality and healthy livestock products for the domestic and export markets. The low development of the livestock value chain hurts all the actors along the value chain, including job creation.

Limited capacity in livestock research, extension, knowledge management & communication: There is a lack of a well-functioning livestock knowledge and information system that can effectively link and coordinate research, education, training, and the provision of advisory services that address the needs and priorities of actors in the livestock value chain. Therefore, the existing livestock-related education, agricultural extension, and advisory services in Uzbekistan need to develop and organize further in terms of all-round capacity to provide livestock producers as well as actors in the whole livestock value chain a focused service.

Limited private investment in livestock development: The role of the private sector in Uzbekistan has been invisible in all economic spheres, but more so in the livestock sub-sector. For livestock to transform into a vibrant industry of major significance to the Uzbekistan national economy, and to enhance prosperity, the private sector and the public-private partnership must play a central role. The government, therefore, needs to support the emergence of a strong private sector that can drive the livestock industry to modernization.

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References

- State Statistics Committee of the Republic of Uzbekistan 2020
- State Statistics Committee of the Republic of Uzbekistan, 2019
- State Statistics Committee of the Republic of Uzbekistan, 2018
https://www.indexmundi.com/uzbekistan/age_structure.htm
- The State Committee on Veterinary and Livestock Production of the Republic of Uzbekistan
GOU (2017), National Development Strategy 2017-21
- The Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020–2030
- Asian Development Bank. Asian Development Outlook (ADO) 2020 Supplement (June 2020)
- World Bank (2020) World Development Indicators
- World Bank (2020) World Development Indicators
- World Bank (2019a) Country Economic Update Summer 2019 Macroeconomics, Trade & Investment
Global Practice Towards a New Economy
- World Bank (2019a) Country Economic Update Summer 2019 Macroeconomics, Trade & Investment
Global Practice Towards a New Economy
- FAO (2020) Food and Agricultural Office Statistical Office Country File for Uzbekistan accessed at
<http://www.fao.org/faostat/en/#country/235>
- FAO 2018
- IMF (2019) IMF Country Report No. 19/129 Republic Of Uzbekistan 2019 Article Iv Consultation —Press
Release And Staff Report, May 2019
- IMF Press Release NO. 20/220, IMF Executive Board Approves a US\$375 Million Disbursement to the
Republic of Uzbekistan to Address the Impact of the COVID-19 Crisis, accessed at
<https://www.imf.org/en/News/Articles/2020/05/18/pr20220-uzbekistan-imf-executive-board-approves-us-375m-disbursement-address-impact-covid19> on 17.07.2020
- ADB (2019) Country Partnership Strategy May 2019 Uzbekistan, 2019–2023 —Supporting Economic
Transformation, May 2019
- Resolution of the President of the Republic of Uzbekistan No. 4567 dated January 17, 2020
- Decree of the President of the RUz No. 6059 September 2, 2020
- Resolution of the President of the Republic of Uzbekistan No. 2939 dated May 1, 2017
- Resolution of the Cabinet of Ministers No. 124 dated March 7, 2017
- World Bank’ report on “Uzbekistan Livestock Sub-Sector Development Strategy and Five-year
Investment Plan “