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Economic and financial returns of livestock agribusiness in the
high mountains of Nepal

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Appendix**Table A1** Economic returns of mountain goat agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit (F=E-D)
2013	3.50	0.04	0.30	3.84	0.00	-3.84
2014	18.43	4.04	0.33	22.80	0.02	-22.78
2015	50.01	22.71	0.36	73.08	1.58	-71.50
2016	69.58	23.39	0.39	93.36	9.02	-84.34
2017	15.70	24.09	0.43	40.21	22.83	-17.38
2018	0.00	25.10	0.46	25.56	46.06	20.50
2019	0.00	26.25	0.51	26.76	55.27	28.51
2020	0.00	27.70	0.56	28.26	66.32	38.06
2021	0.00	29.36	0.62	29.98	79.58	49.61
2022	0.00	31.27	0.68	31.95	87.54	55.60
2023	0.00	31.27	0.68	31.95	87.54	55.60
2024	0.00	31.27	0.68	31.95	87.54	55.60
2025	0.00	31.27	0.68	31.95	87.54	55.60
2026	0.00	31.27	0.68	31.95	87.54	55.60
2027	0.00	31.27	0.68	31.95	87.54	55.60
2028	0.00	31.27	0.68	31.95	87.54	55.60
2029	0.00	31.27	0.68	31.95	87.54	55.60
2030	0.00	31.27	0.68	31.95	87.54	55.60
2031	0.00	31.27	0.68	31.95	87.54	55.60
2032	0.00	34.39	0.68	35.07	134.71	99.64
EIRR	15.77%					
NPV	\$44.21					
NPV labour	\$ 3.65					
B/C Ratio	1.16					

Table A2 : Economic returns of chyangra agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit F=E-D
2013	0.00	0.00	0.00	0.00	0.00	0.00
2014	3.27	0.41	0.33	4.01	0.00	-4.01
2015	13.89	3.19	2.39	19.48	1.37	-18.10
2016	8.90	6.05	2.87	17.81	2.58	-15.23
2017	0.03	4.26	3.92	8.21	1.92	-6.29
2018	0.00	4.77	3.92	8.70	5.77	-2.92
2019	0.00	8.11	3.92	12.04	10.39	-1.65
2020	0.00	14.60	3.92	18.53	25.97	7.44
2021	0.00	21.90	3.92	25.83	38.95	13.13
2022	0.00	23.66	3.92	27.58	40.90	13.32
2023	0.00	24.84	3.92	28.76	42.95	14.18
2024	0.00	24.84	3.92	28.76	42.95	14.18
2025	0.00	24.84	3.92	28.76	42.95	14.18
2026	0.00	24.84	3.92	28.76	42.95	14.18
2027	0.00	24.84	3.92	28.76	42.95	14.18
2028	0.00	24.84	3.92	28.76	42.95	14.18
2029	0.00	24.84	3.92	28.76	42.95	14.18
2030	0.00	24.84	3.92	28.76	42.95	14.18
2031	0.00	24.84	3.92	28.76	42.95	14.18
2032	0.00	24.84	3.92	28.76	50.77	22.01
EIRR	14%					
NPV	\$ 7.08					
NPV labour	\$21.18					
B/C Ratio	1.06					

Table A3: Economic returns of sheep agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit (F=E-D)
2013	2.48	0.05	0.15	2.67	0.00	-2.67
2014	13.34	1.78	0.17	15.28	0.29	-14.99
2015	37.21	10.86	0.18	48.25	4.45	-43.80
2016	32.14	11.17	0.19	43.51	32.75	-10.76
2017	7.20	11.55	0.21	18.96	32.45	13.49
2018	0.00	13.86	0.23	14.09	36.60	22.51
2019	0.00	18.02	0.25	18.27	40.26	21.99
2020	0.00	21.62	0.25	21.88	40.26	18.39
2021	0.00	22.92	0.25	23.17	40.26	17.09
2022	0.00	26.36	0.25	26.61	40.26	13.65
2023	0.00	26.36	0.25	26.61	40.26	13.65
2024	0.00	26.36	0.25	26.61	40.26	13.65
2025	0.00	26.36	0.25	26.61	40.26	13.65
2026	0.00	26.36	0.25	26.61	40.26	13.65
2027	0.00	26.36	0.25	26.61	40.26	13.65
2028	0.00	26.36	0.25	26.61	40.26	13.65
2029	0.00	26.36	0.25	26.61	40.26	13.65
2030	0.00	26.36	0.25	26.61	40.26	13.65
2031	0.00	26.36	0.25	26.61	40.26	13.65
2032	0.00	26.36	0.25	26.61	65.05	38.44
EIRR	18%					
NPV	\$ 22.05					
NPV labour	\$ 1.61					
B/C Ratio	1.12					

Table A4 : Economic returns of cattle agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit (F=E-D)
2013	3.82	0.78	0.13	4.73	0.00	-4.73
2014	10.41	3.27	1.80	15.48	2.79	-12.69
2015	9.79	8.17	4.54	22.50	3.78	-18.71
2016	11.42	15.87	6.43	33.73	11.62	-22.11
2017	2.80	16.66	6.63	26.09	17.00	-9.09
2018	0	17.49	6.96	24.45	22.44	-2.01
2019	0	18.37	7.52	25.88	26.93	1.05
2020	0	19.84	8.27	28.10	32.32	4.22
2021	0	21.82	9.26	31.08	48.48	17.40
2022	0	31.64	14.35	45.99	63.02	17.03
2023	0	31.64	15.07	46.71	66.17	19.47
2024	0	31.64	15.07	46.71	66.17	19.47
2025	0	31.64	15.07	46.71	66.17	19.47
2026	0	31.64	15.07	46.71	66.17	19.47
2027	0	31.64	15.07	46.71	66.17	19.47
2028	0	28.47	12.06	40.53	59.56	19.03
2029	0	28.47	12.06	40.53	59.56	19.03
2030	0	28.47	12.06	40.53	59.56	19.03
2031	0	28.47	12.06	40.53	59.56	19.03
2032	0	28.47	12.06	40.53	69.88	29.35
EIRR	13%					
NPV	\$2.25					
NPV labour	\$56.29					
B/C Ratio	1.01					

Table A5 : Economic returns of chauri agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit F=E-D
2013	2.86	0.02	0.03	2.91	0.00	-2.91
2014	13.80	2.23	1.41	17.44	1.88	-15.56
2015	27.35	17.11	12.78	57.24	7.53	-49.71
2016	22.64	28.36	18.19	69.19	32.66	-36.53
2017	1.24	30.71	19.10	51.05	39.19	-11.87
2018	0	32.25	20.06	52.31	47.02	-5.28
2019	0	33.86	21.66	55.52	61.13	5.61
2020	0	36.57	23.83	60.40	72.13	11.73
2021	0	40.23	23.83	64.06	88.00	23.95
2022	0	46.26	23.83	70.09	114.41	44.31
2023	0	46.26	23.83	70.09	120.13	50.03
2024	0	46.26	23.83	70.09	120.13	50.03
2025	0	46.26	23.83	70.09	120.13	50.03
2026	0	46.26	23.83	70.09	120.13	50.03
2027	0	46.26	23.83	70.09	120.13	50.03
2028	0	37.01	21.45	58.46	72.08	13.62
2029	0	37.01	21.45	58.46	72.08	13.62
2030	0	37.01	21.45	58.46	72.08	13.62
2031	0	37.01	21.45	58.46	72.08	13.62
2032	0	37.01	21.45	58.46	126.85	68.40
EIRR	15%					
NPV	\$19.89					
NPV labour	\$120.28					
B/C Ratio	1.05					

Table A6 : Economic returns of pig agribusiness (ten thousand USD)

Year	Investment (A)	Operation cost (B)	Labour cost (C)	Total cost (D=A+B+C)	Total revenue/benefit (E)	Net income/benefit (F=E-D)
2013	1.11	0.05	0.05	1.21	0.00	-1.21
2014	6.12	2.28	1.06	9.46	0.15	-9.31
2015	6.57	4.42	3.61	14.60	4.74	-9.85
2016	8.70	8.80	5.03	22.53	3.98	-18.55
2017	5.08	11.43	6.84	23.35	4.26	-19.08
2018	0	9.14	5.47	14.61	10.83	-3.78
2019	0	10.24	6.13	16.37	11.51	-4.86
2020	0	11.06	6.74	17.80	19.49	1.70
2021	0	12.16	7.55	19.71	29.24	9.53
2022	0	13.38	7.93	21.31	38.01	16.70
2023	0	14.05	8.32	22.37	39.91	17.54
2024	0	14.05	8.32	22.37	39.91	17.54
2025	0	14.05	8.32	22.37	39.91	17.54
2026	0	14.05	8.32	22.37	39.91	17.54
2027	0	14.05	8.32	22.37	39.91	17.54
2028	0	14.05	8.32	22.37	39.91	17.54
2029	0	14.05	8.32	22.37	39.91	17.54
2030	0	14.05	8.32	22.37	39.91	17.54
2031	0	14.05	8.32	22.37	39.91	17.54
2032	0	14.05	8.32	22.37	41.90	19.53
EIRR	12%					
NPV	-\$0.63					
NPV labour	\$39.21					
B/C Ratio	0.99					

Table A7 : Sensitivity analysis of economic returns of sheep agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		17.95%	220.51		
Adverse scenarios					
Investment cost increased	10%	15.91%	156.66	1.14	29.11%
Revenue reduced	10%	12.62%	21.56	2.97	11.16%
Operating cost increased	10%	15.06%	109.06	1.61	20.58%

Table A8 : Sensitivity analysis of economic returns of goat agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		15.77%	442.08		
Adverse scenarios					
Investment cost increased	10%	14.73%	335.54	0.66	36.12%
Revenue reduced	10%	13.13%	126.11	1.67	14.27%
Operating cost increased	10%	14.38%	280.50	0.88	27.16%

Table A9 : Sensitivity analysis of economic returns of chyangra agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		14.61%	73.16		
Adverse scenarios					
Investment cost increased	10%	13.79%	52.65	0.57	31.60%
Revenue reduced	10%	9.80%	-54.81	3.29	5.43%
Operating cost increased	10%	11.69%	-8.39	2.00	8.93%

Table A10 : Sensitivity analysis of economic returns of chauri agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		14.67%	198.87		
Adverse scenarios					
Investment cost increased	10%	13.95%	150.75	0.49	37.26%
Revenue reduced	10%	9.19%	-192.73	3.74	4.87%
Operating cost increased	10%	11.94%	-4.45	1.86	9.78%

Table A11 : Sensitivity analysis of economic returns of cattle agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		12.52%	22.51		
Adverse scenarios					
Investment cost increased	10%	11.91%	-3.94	0.48	8.56%
Revenue reduced	10%	7.14%	-190.91	4.30	0.96%
Operating cost increased	10%	9.54%	-104.85	2.37	1.74%

Table A12 : Sensitivity analysis of economic returns of pig agribusiness

Cases	Change	EIRR %	NPV @ 12% \$,000	S.I.	S.V. %
Base Case (Economic values)					
Whole Project		12.45%	15.19		
Adverse scenarios					
Investment cost increased	10%	11.95%	-1.59	0.39	9.08%
Revenue reduced	10%	8.61%	-107.41	3.08	1.16%
Operating cost increased	10%	10.54%	-49.78	1.53	2.34%