

800 Project Code

8001 Institute Project Code No. : EESE 8.14

8002 ICAR Project Code No.

801 Name of the Institute and Division8011 Name and address of the Institute : Central Institute for Research on Goats,
Makhdoom, P.O. Farah-281 122, Mathura
(U.P.),

8012 Name of Division/Section : Extension Education and Socio-Economics Section

8013 Location of the Project : CIRG, Makhdoom

**802 Project Title : Multi-Disciplinary Project on Transfer of
Technology for Sustainable Goat Production
system****803 Priority Area**8031 Applied Res./Basic Res./Process or./Transfer of Tech/Tech. Dev.
01 02 03 04**804 Specific Area****Transfer of improved goat production technology****805 Duration of the Project : July, 2005-March, 2009**

8051 Date of start : July, 2005

8052 Date of completion : March, 2009

8053 Total Cost/Expenditure Incurred : 80.00 lakhs**8054 Executive Summary
Please see Annexure-I****806 Key words****Multi-disciplinary, transfer of technology, sustainable goat production****PART-II : Investigator Profile****810 Principal Investigator** : Dr. R.L. Sagar, Principal Scientist, EE&SE Section,
CIRG, Makhdoom, P.O. Farah-281 122, Mathura, U.P.**811 Project Coordinator** : Dr. R.L. Sagar, Principal Scientist, EE&SE Section,
CIRG, Makhdoom, P.O. Farah-281 122, Mathura, UP.**812 Co-Investigator** : Dr. Braj Mohan, Senior Scientist, EE&SE Section,
CIRG, Makhdoom, P.O. Farah-281 122, Mathura, U.P.**813 Co-Investigator** : Dr. S.Kumar, Senior Scientist, EE&SE Section,
CIRG, Makhdoom, P.O. Farah-281 122, Mathura, U.P.**814 Co-Investigator** : Dr. Khushyal Singh, Scientist, EE&SE Section,
CIRG, Makhdoom, P.O. Farah-281 122, Mathura, U.P.

PART-III : Technical Details

820 Introduction and Objectives

8201 Introduction

The technology developed at the Institute would be transferred to increase the productivity, income, employment and improve the socio-economic condition of the farmers in general. The ultimate objective of the programme is to assess, refine and transfer of the improved goat production technologies to the farmers. This is a certain extent, depends upon the increase in the level of knowledge, change in the attitude and improvement in the skills of the farmers. This can be achieved when the farmers know, understand and act upon the production technologies developed by the Institute related to goat like curative and preventive health care, breeding, feeding, housing and management. In order to development of the goat farmers through the programme in the villages a scheme is being proposed where all the aspects of goat management, like goat improvement, reproduction, shelter management, goat health, goat nutrition and feed resource development, goat products technologies and extension education and socio- economic aspects will be involved.

8202 Project Objectives

- To conduct preliminary survey of villages.
- To conduct benchmark survey on socio-economic background of farmers in the selected villages.
- To introduce and demonstrate viable goat production technologies developed at CIRG.
- To organize training programmes for goat farmers and farm women in the adopted villages on different aspects of goat production technologies.
- To study the role of women in goat rearing.
- To get feedback for further refinement of goat production technologies, if needed.
- To study the socio-psycho-economic impact of the transfer of technology programme.

8203 Background information and importance of the project

Goat farmers are facing a lot of problems because of lack of dissemination of goat production technologies such as breeding, feeding, health care, housing and management of goat product technologies. These technologies will be suitably transferred and to the farmers in the adopted villages. By organizing technology transfer programme trained and educated goat farmers will meet the challenges of goat production. Productivity and income will be increased by adoption of goat production technology and will bring change in socio-economic status of goat farmers.

821 Project Technical Profile

8211 Technical Programme

(Indicate briefly plan of procedure, techniques, instruments and special materials, organisms, special environments etc.)

2005-06

1. Collection of secondary information and review of literature.
2. Conduction of preliminary survey using PRA techniques in the villages.
3. Selection of villages.
4. Selection of improved goat technologies.
5. Organizing on and off campus training programme.
6. Organizing extension education activities, like field days, farmer's day, meetings, group discussion, etc.

7. Development of schedule /questionnaires.
8. Conduction of benchmark survey.
9. Compilation and tabulation of data.
10. Interpretation and report writing.

2006-07

1. Conduction of demonstrations on improved goat technologies.
2. Organizing trainings on and off campus.
3. Organizing extension education activities, like field days, farmer's day, meetings, group discussion, etc.

2007-08

1. Conduction of demonstrations on improved goat technologies.
2. Organizing trainings on and off campus.
3. Organizing extension education activities, like field days, farmer's day, meetings, group discussion, etc.

2008-09

1. Conduction of demonstrations on improved goat technologies.
2. Organizing training on and off campus.
3. Organizing extension education activities, like field days, farmer's day, meetings, group discussions, etc.
4. Interpretation and final report waiting.

8212 Total man months per year involvement of component project workers

Dr. R.L. Sagar	33.75 Man Months
Dr. Braj Mohan	45 Man Months

822 Final Report on the Project

Please see Annexure-I

8221 Achievements in terms of targets fixed for each activity

Please see Annexure-I

8222 Questions-answered : Nil

8223 Process/Product/Technology/Developed : NA

8224 Practical Utility:

By organizing technology transfer programme, trained and educated goat farmers will meet the challenges of goat production. Productivity and income will be increased by adoption of goat production technology and will bring change in socio-economic status of goat farmers.

8225 Constraints, if any : Nil

823 Publications and material development

8231 Research Papers

1. Sagar, R.L., Mohan, B. and Singh, K. (2008). Factors Restraining and Helping in Adoption of Scientific Goat Farming. Submitted in Indian Research Journal of Extension Education for Publication.
2. Sagar, R.L., Singh, K. and Mohan, B. (2008). Utilization of Information Sources by the Goat Farmers in Adoption of Goat Production Technology. Submitted in Indian Research Journal of Extension Education for publication.
3. Mohan, B. and Sagar, R.L. (2008). Angikrat Ganvon Mein Bakari Suvasthaya Par EK Adhyayan (In Hindi). Hindi Shodh Patra Pratiyogita at CIRG, Makhdoom, Farah, Mathura, U.P., on 24.09.2008.
4. Singh, K. And Mohan, B. (2009). A Study on Goat Health Status in the Adopted Villages. National Seminar on Rural India Developmental Alternatives: Sectoral Convergence for Livelihood Security at CIRG, Makhdoom, Farah, Mathura, U.P., on January 16-18, 2009, PP: 37.

8232 Popular articles

1. Mohan, B., Yadav, U.C. and Singh, K. (2005). Bakari Palan Prashikshan Swarojgar ke Hit Mein. Khet Khalihan, Dainik Jagaran, Agra, Sombar, 11 April, 2005, PP: 3.
2. Sagar, R.L., Yadav, U.C. and Mohan, B. (2006). Berojgaron ke Liye Bakari Palan EK Uttam Vikalap. Dainik Jageran, 6 February, 2006, PP: 3 (Khet Khalihan).
3. Mohan, B., Sagar, R.L. and Singh, K. (2006). Bakari Palan Ujjaval Bhavishiya ki Oar, Ajamukh, Ank-Sodas, PP: 7.
4. Mohan, B., Sagar, R.L., Singh, K. and Bhusan, S. (2007). Bakariyon Mein Prajanan V Vyavsatha (Hindi). Pashu Dhan Patrika, 22 (2): 5-7.
5. Mohan, B. and Singh, K. (2007). Role of Information Communication Technologies (ICT) for Developing Better Management Skills in Agriculture & Allied Sectors. Agricultural Extension Review, January-June, 2007, Vol. XIX, No. 1, PP: 33-38.
6. Mohan, B., Sagar, R.L. and Singh, K. (2008). Grameen Anchal Mein Vaigyanik Dhang Se Bakari Palan Ke Liye Khanij Mishran Ki Upyogita ka Mahtva. Printed in Smarika in Hindi "Pashu Utpadakta, Badhane Mein Khanij Lavanon ka Yogdan" in connection with Vaigyanik-Krishak Parasparik Gosthi held at CIRG, Makhdoom on 26.04.2008, PP: 15-16.
7. Mohan, B., Sagar, R.L. and Singh, K. (2008). Bakari Palan ka Krishi ke Vikas Mein Bhi EK Adbhut Yogdan (In Hindi). Grameen Vikas Sameeksha. Published in the issue of January-June, 2008, Ank- 42, Sankhya-1, PP: 76-80.
8. Mohan, B., Sagar, R.L. and Singh, K. (2008). Bakari Ke Bachchon ko Uttam Vidhi Se Kaise Palen? Pashudhan Patrika, Sanskaran-23, Sangyukt-Ank: April-May, 2008, PP: 8-10.

9. Mohan, B., Sagar, R.L. and Singh, K. (2008). Suvayam Sahayata Samooh ke Madhayam Se Gareeb Gramin Bakari Palak Mahilaon ka Sashaktikaran. Bakari Esmarika Book (In Hindi), CIRG, Makhdoom, Farah, Mathura, U.P., PP: 87-89.
10. Mohan, B. (2008). Bakari Palan Vikas ke Liye Suvayam Sahayata Samooh Se Sambandhit Mahatavpuran Jankariyan. Folder in Hindi Published at CIRG, Makhdoom, Farah, Mathura, U.P.
11. Mohan, B. and Sagar, R.L. (2008). Vaigyanik Bakari Palan Hetu Pramukh Viksit Upayogi Pradhogikiyon ki Jankari. Folder in Hindi published at CIRG, Makhdoom, Farah, Mathura, U.P.
12. Sagar, R.L. and Mohan, B. (2008). Bakariyon Se Adhik Utapadan Ke Liye Aahar Sansadhan Evam Khanpan Viyavasatha. Folder in Hindi Published at CIRG, Makhdoom, Farah, Mathura, U.P.
13. Mohan, B. and Yadav, U.C. (2008). Unnat Bakari Palan Mein Samanay Evam Viyavaharik Samasyan Aur Unaka Samadhan. Unnat Krishi (In Hindi). January-June, 2008, Year-46, Ank-1, PP: 30-31.
14. Mohan, B., Sagar, R.L. and Singh, K. (2008). Bakari Palan Mein Sahakarita ka Upayog. Submitted for Hindi folder at CIRG, Makhdoom, Farah, Mathura, U.P.
15. Mohan, B., Sagar R.L. and Singh, K. (2008). Viyavasayik Bakari Palan Se Sambandhit Mukhay Jankariyan. Submitted for Hindi folder at CIRG, Makhdoom, Farah, Mathura, U.P.
16. Mohan, B., Sagar, R.L. and Singh, K. (2008). Bhed Bakari Ki Khalen. Submitted for Hindi folder at CIRG, Makhdoom, Farah, Mathura, U.P.
17. Singh, K., Prasad, H., Mohan, B. and Sharma, V.K. (2008). Bakari Palan Kyon?. Submitted for Hindi folder at CIRG, Makhdoom, Farah, Mathura, U.P.
18. Mohan, B., Sagar, R.L. and Singh, K. (2008). Unnat Bakari Palan. Krishi Gyan Ganga (In Hindi). Year-22, July-September, 2008, Ank- Tratiy, PP: 19-21.
19. Mohan, B. (2008). Vegayanik Tareeke Se Bakari Palan. Submitted for Hindi Book at CIRG, Makhdoom, Farah, Mathura, U.P.
20. Sagar, R.L., Mohan, B. and Singh, K. (2008). Bakari Palan Se Sambandhit Avasyak Pahloo (In Hindi), Krishi Vistar Sameeksha. Year-18, Ank-2, July-December, 2008, PP: 33-36 and 38.
21. Mohan, B. (2009). Sahakarita ke Madhayam Se Bakari Viyavsay ka Vikas. Viyavsayik Bakari Palan Book (In Hindi), Third Edition, CIRG, Makhdoom, Farah, Mathura, U.P., PP: 266-269.

8233 Reports : Nil
 8234 Seminars, Conferences and Workshop
 (relevant to the project in which scientists have participated) : Nil

824 Infrastructural facilities developed: Nil

825 Comments /suggestions of project leader regarding possible future line of work that may be taken up arising out of this project.

PART-IV: Project expenditure

Total Cost of the Project : 80.00 lakhs

ANNEXURE-I

Final Report on Project “Multi-Disciplinary Project on Transfer of Technology for Sustainable Goat Production system”

2005-2006

Collection of Secondary Data

The team visited on 13.07.2005, Farah Block of Mathura District to collect information of total villages and Panchayats of the Block. A list of villages/Panchayats were noted down with the help of A.D.O. Panchayat, Mr. Pachauri. The total panchayats in Farah Block were 48 and total number of villages were 84. The team also visited C.D.O. Office on 16.07.2005 to collect information regarding land, human population and goat population of Farah Block and Mathura District. The District Statistics Officer provided a printed statistical magazine of Mathura District-1979. The Chief Veterinary Officer provided goat population of Mant (19208), Chhata (13137) and Mathura (38699) Tehsils of the District and total population of goat in Mathura District 71044.

Visit of Villages

The team visited 14 villages namely, Nagla Chheetar, Shahjadpur Gujar, Kirarai, Nagla Mahadev, Judavai, Pauri Shahjadpur, Pohpa Burj, Raipura Jat, Mursadpur Piprauth, Nagla Banjara, Bhimnagar, Jalal and Barka Nagla and Rausu Gahri on 2nd, 3rd, 12th, 25th, 29th August, 2005 and 3rd September, 2005. The team assessed the number of families, goat keepers and number of goats, etc. in the villages.

Conduction of Preliminary Survey

Based on above visits, the preliminary survey was conducted in six villages namely, Pohpa Burj Nagla, Banjara, Pauri Shahjadpur, Bhimnagar, Jalal and Barka Nagla.

Final Selection of Villages

The four villages in Farah Block had been selected on the basis of goat population and Number of goat farmers. The selected villages were Pohpa Burja (144 goats and 32 goat farmers), Pauri Shahjadpur (196 goats and 45 goat farmers), Jalal (140 goats and 30 goat farmers) and Barka Nagla (215 goats and 24 goat farmers). In all 4 villages, the total goats and goat farmers were 695 and 131 respectively.

At the outset, a preliminary survey was conducted in four villages namely, Pohpa Burj, Pauri Shahjadpur, jalal and Barka Nagla of Farah Block in Mathura District of Uttar Pradesh during August and September, 2005. The survey was conducted to know some important background information of the selected villages. All the villages were nearer to the Institute in Farah Block. In addition to it, the benchmark survey was conducted in January-February, 2006. Coding, scoring compilation and tabulation of data were in progress.

Field day-cum off campus training programme

It was organized on 29 March, 2006 jointly in Jalal and Barka Nagla at Barka Nagla. On the occasion honourable Director, Dr. N.P. Singh was present. Besides all five Heads of

Divisions, 11 Scientists, 02 Veterinary Officers, 03 Technical Officers, 03 Technical Assistants, 35 Trainees of 27th National Training programme on “Commercial Goat Farming” 01 Stockman, Veterinary Hospital, Farah, 50 goat farmers and 20 farm women from Barka Nagla were present in Scientists –farmers interaction.

Health Camp

A health camp was also organized at Barka Nagla. In the health camp, 272 goats were treated of which 120 goats were dipped to control eco-parasites and 87 were drenched for controlling endo-parasites and 65 goats were treated against various diseases.

2006-2007

Conduction of off and on camps training programmes

- Conducted one day off-campus Training Programme on “Scientific Goat Rearing” at Pohpa Burj on April 25, 2006. In this programme, Honourable Director, 04 Heads of Divisions, 09 Scientists, 01 Veterinary Officer, 04 Technical Officers, 03 Technical Assistants, 01 Stockman, Veterinary Hospital, Farah and about 100 goat keepers/ farm women from Pohpa Burj and Pauri Shahjadpur presented in Scientists-farmers interaction. Also, arranged a “Field Day-cum- Health Camp” on 25 April, 2006 jointly in pauri Shahjadpur and Pohpa Burj at Pohpa Burj. In the health camp, about 200 goats were drenched/ treated against various diseases.
- Arranged one day visit of CIRG, Makhdoom and on-campus Training Programme on “Scientific Goat Rearing” on 02.05.2006. In this programme, 02 Heads of Divisions, 05 Scientists, 03 Technical Officers, 01 Technical Assistant, 11 Farmers and 13 farm women from Pohpa Burj and Pauri Shahjadpur were present.
- Arranged one day visit of CIRG, Makhdoom and on-campus Training Programme on “Scientific Goat Rearing” on 12.05.2006. In this programme, 04 Heads of Divisions, 04 Scientists , 01 Technical Officer, 01 Technical Assistant , 23 farmers and 01 farm women from Barka Nagla and Jalal were present.

Extension activities in adopted villages

- On 20.06.2006 visited the Pauri Shahjadpur and Pohpa Burj adopted villages. Personally contacted 06 goat rearers and provided advisory services to them for their animals. Also, informed to Shri. Anil S/O. Shri. Atar Singh (Pauri Shahjadpur) and Smt. Mohan Devi W/O. Shri. Mohavir (Pohpa Burj) to take Barbari buck from CIRG, Makhdoom. Smt. Mohan Devi W/O. Shri. Mahavir (Pohpa Burj) had taken a Barbari buck from CIRG, Makhdoom on 21.06.2006.
- On 27.06.2006 visited the Jalal and Barka Nagla adopted villages. Arranged 01 group discussion in each village. Total 02 Scientists, 02 Technical Officers and 32 farmers participated in 02 group discussions in both villages. Also, met to Shri. Shrinivas S/O. Shri. Goverdhan Singh (Barka Nagla) who had taken 01 Barbari buck from CIRG, Makhdoom on 26.06.2006.

Coding and scoring of collected data

- Coding and scoring of collected data in benchmark survey in adopted villages namely, Pauri Shahjadpur, Pohpa Burj, Jalal and Barka Nagla.

Compilation and tabulation of collected data

- Compilation and tabulation of collected data in benchmark survey in adopted village, namely, Pauri Shahjadpur, Pohpa Burj, Jalal and Barka Nagla.

Socio- Economics Study

In order to understand the goat production system, economics and marketing of goats in the adopted villages, an in-depth survey was conducted covering 41 goat farmers from the four villages namely, Jalal, Nagla Bar, Pohpa Burj and Pouri–Shahajadpur. The size of flock of breeding goats in different villages varied between 2 and 6 goats. However the distribution of breeding bucks was very skewed, even one of the villages had no buck. Only 52 % of the goat keepers had agricultural land and all of them were marginal and small farmers. Majority of the goat keepers (71 %) were aged between 30-50 years. The young generation had little interest in goat rearing. Interestingly about 23 % farmers had taken goat rearing very recently in the last 5 years. Most of the farmers were illiterate. Goat rearing was mainly a subsidiary occupation; only 26 % farmers had adopted it as their main occupation. Goat rearing was the responsibility mainly (on 87 % households) of women and children in the family. The goats were better equitably distributed among different social groups as 95 % of the goat keepers belonged to OBC and SC category.

The farmers have evolved a suitable feeding system using locally available resources. Among these practices, 84 % farmers sent their goats for grazing, 74 % used Saani (moist wheat straw + flour of wheat/ barley/ cake), 44 % used tree lopping and 48 % farmers fed their goats mustard oil and salt. The major capital investment was made on purchasing the breeding stock (Rs. 6432) followed by value of shed (Rs. 423) and equipments (Rs. 102). The total fixed cost per annum was worked out to be Rs. 1003/ farmer and Rs. 241 per goat. Moreover the mortality in adult goats was also considered as depreciation and was estimated to be Rs. 598/ farmer/ annum. Major component of the actual cost incurred by farmer was on feeding goats. That was worked out to be Rs. 1700/ farmer/ annum and Rs. 409/ goat. The total cost of rearing a goat was Rs. 794 per annum. The net returns/goat/annum were estimated to be Rs. 1009. However the net returns from a goat varied from Rs. 722 (in Jalal village) to Rs. 1217 (in Pouri) . Many farmers of Pouri village had higher awareness and followed the suggested marketing strategy. On our persuasion, 17 % farmers reared /fattened male kids for festive (Eid) sale and realized better prices. The net returns from goat rearing could be further increased simply by reducing mortality in goats, which caused losses to the tune of Rs. 1359/ annum. It was observed that most of the farmers sold their live goats in the village itself to the traders/ butchers and farmers. Though the farmers sold their animals as and when they need cash, however, majority of them sold their goats in winter season on account of better prices and feed scarcity. Fellow farmers and village traders were the major source of market information, however, the majority of goat keepers felt that lack of market information and distress sale are main reasons for low price of their goats. The reasons observed for sale of early age kids were risk of mortality, urgent cash needs and non-awareness of optimum age of sale. It was also observed that income from goats was mainly used to fulfill the family needs, replacing goats, etc. About 52 % goat farmers were interested to increase the flock size of goats to make it a self-sustaining unit. However they needed support in the form of easy access to credit at reasonable cost, preventive and control of diseases in goats, access to market information, etc.

Table 1: Flock Size of goats in adopted villages

Villages	Adult male	Adult female	Kids	Total flock size
Jalal	0.11	3.89	4.56	8.56
Nagla Bar	0.63	6.25	6.00	12.88
Pohpa Burj	0.00	2.33	2.33	4.66
Pouri -Shahajadpur	0.09	3.46	5.00	8.55

Pooled	0.23	4.16	4.87	9.26
Average market price	2057	1786		

Table 2: Experience in goat rearing

Experience in years	% farmers
0-5	22.58
5-10	6.45
10-15	38.71
15-20	22.58
>20	9.68

Table 3: Who is responsible for goat rearing

Family member	% farmers
Husband	25.81
Wife	51.61
Children	35.48
Old	3.23

Table 4: Feeding practices of goat farmers

S.No.	Feeding practices of goats	%Farmers
1.	Grazing of goats	84
2.	Saani in winter	74
3.	Use of tree lopping	44
4.	Use of mustard oil and salt	48
5.	Use of Jaggery	13

Table 5: Capital investment and depreciation in adopted villages (Rs./ Annum/ farmer)

Villages	Value of breeding stock	Depreciation	Value of shed	Depreciation	Value of equipment	Depreciation
Jalal	5200	130	589	147	78	31
Barka Nagla	9775	244	300	75	161	65
Pohpa Burj	3767	94	533	133	58	23
Pauri shahjadpur	5736	143	345	86	91	37
Overall	6432	161	423	106	102	41

Table 6: Fixed cost on goat rearing in adopted villages (Rs./Annum/ Farmers)

Villages	Total investment	Total depreciation	Interest on capital	Total fixed cost
Jalal	5867	308	587	895
Barka Nagla	10236	384	1024	1408
Pohpa Burj	4358	251	436	687
Pauri shahjadpur	6173	266	617	883
Pooled	6957	307	696	1003

Table 7: Cost of feeding goats (per farmer/ annum)

Villages	Quantity of feed and fodder, kg			Expenditure on feed and fodder, Rs.				Total expenditure Rs.
Jalal	--	210	155	--	420	1123	27	1570
Barka Nagla	75	156	156	30	313	1089	98	1530
Pohpa Burj	--	337	98.3	--	673	688	63	1424
Pauri shahjadpur	--	415	172	--	830	1224	54	2108
Overall	19	272	153	8	545	1085	62	1700

Table 8: Monetary losses due to mortality in goats (Rs./ farmers/ annum)

Villages	Value of adult goats died	Value of kids died	Total loss
Jalal	570	320	890
Barka Nagla	1578	2644	4222
Pohpa Burj	--	30	30
Pauri shahjadpur	383	325	708
Overall	598	761	1359

Table 9: Total cost of goat rearing (Rs./ farmers/ annum)

Villages	Total fixed cost	Value of adult goat died	Cost of feeding	Total cost
Jalal	895	570	1570	3035
Barka Nagla	1408	1578	1530	4516
Pohpa Burj	687	--	1424	2111
Pauri shahjadpur	883	383	2108	3374
Overall	1003	598	1700	3301

Table 10: Returns from goat rearing (Rs./ annum)

Villages	Value of sold/ added kids	Value of milk	Value of manure	Gross returns	Net returns/ flock	Net returns/ goat
Jalal	4722	884	238	5844	2809	722
Nagla Bar	6738	2284	581	9603	5087	812
Pohpa Burj	3433	893	167	4493	2382	1022
Pouri - Shahajadpur	6155	1102	327	7584	4210	1217
Overall	5636	1324	351	7499	4198	1009

Table 11: Farmers' perception on reserve price for goats sold

Particulars	%Farmers
Farmers having reserve of their selling stock	61.29
Basis of reserve price: Last year's price	58.06
Existing market price	58.06
General Price level	32.26

Table 12: Farmers' preference for timing of sale of goats

Preferred timing of sale	Reasons	%Farmers
Any time	Need of cash	38.71
Winter	Fodder scarcity/ better market price	38.71
Eid	Better price	9.68
Rainy season	Risk of disease	19.35
Whenever male attain age of 6-7 months	Economic age of sale	3.23

Table13 : Farmers' perception on reasons for low price of their goats

Reason	%Farmers
Poor health	22.58
Lack of market information	78.19
Distress sale	58.06

Table 14: Farmers' perception on marketing service support

Particulars	%Farmers
Need market information	25.81
Don't know	70.97
No idea	3.23

Table 15 Demand for farmers' goat milk

Source of demand	%Farmers
Local consumer	3.23
Patient	3.23
Milk vendor	35.48
Adulteration	12.90

Table 16: Reason for sale of goats

Reason	%Farmers
To restrict the flock size	51.61
Cull diseased / unproductive goats	54.84
Surplus males	83.87

Table 17 : Purpose of sale of goats

Reason	%Farmers
Fulfill family needs	80.65
Repayment of loan	12.90
Purchase of inputs for crop	6.45
Meet social obligations	61.29
Replacement of goats	80.65
Unforeseen expenses	41.94
Children education	45.16

Table 18: Reason for sale of early age kids

Reason	%Farmers
Risk of mortality through disease	35.48
Unaware of optimum age of sale	29.03
Pressure of money lender	9.68
Urgent cash need	54.84
Comparatively higher income in sale at early age	3.23
Lack of space	3.23
Scarcity of feed	3.23
Adult kids are difficult to manage	3.23

Table 19: Reason for selling in the village

Reason	%Farmers
Non availability of time	9.68
Uneconomic to carry small number to market	80.65
Time taking	12.90
Lack of shed in market	3.23
Forced sale in evening	12.90
Lack of transparency	35.48
Other	9.68

Table 20: Farmers' perceptions on prospects of commercial goat farming

Items	Particular	% Farmer
Adoption of commercial goat farming	Interested to increase the flock size	51.61
	Not interested	48.39
Support required	Easy access to credit at reasonable cost	48.39
	Prevention & control of diseases	19.35
	Market information and marketing	12.90
	Training on goat farming	9.68
	Superior breeding stock	6.45
Other constraints	Lack of space at proper place	3.23
	Social inhibitions	3.23
	Can not take high risk	3.23
	Present work of donkey rearing for draft purpose is more stable income source	3.23
	Satisfied as agricultural labour	3.23

Table 21: farmers who sold males on Eid festival

S.No.	Name	Village	No. sold	Price realized
1.	Goverdhan Singh	Jalal	1	3100
2.	Bhikki Ram	Nagla Bar	1	3000
3.	Jai Shiv Yadav	Pauri Shahjadpur	2	8000
4.	Ram Swarup Yadav	Pauri Shahjadpur	1	3100
5.	Udai Singh	Pauri Shahjadpur	2	6000
6.	Hariom	Pauri Shahjadpur	1	3000
7.	Bhuri	Pauri Shahjadpur	2	8000
Average price of a male				3420

2007-08**Coordination of TOT Programme**

- Coordinated the Transfer of Technology programme of the Institute.

Visits and advisory services

- In all 170 visits made by the scientists (Drs. R.L. Sagar, Braj Mohan and Khushyal Singh) and the technical staff (Mr. V.K. Sharma) of the EESE Section to 4 adopted villages namely, Pohpa Burj, Pauri Shahjadpur, Jalal and Barka Nagla and made individual contact with about 500 goat farmers/ farm women at their home during the period under report.

They were educated and motivated about the scientific/ commercial goat rearing and convinced them to take the services from the Barbari Breeding bucks which were distributed in the adopted villages under TOT programme for the purpose of breed improvement.

Organization of field day

- Organized a Field day cum Scientist- farmers Interaction in the adopted village Jalal on 21 July, 2007. In this programme Director, CIRG, Makhdoom was present. Besides all five Head of Divisions/ Section, 9 Scientists, Two Senior Veterinary Officers, three Technical Officers, two Technical Assistants, five other staff and about 150 goat farmers/ farmwomen from Jalal were present in Scientist- Farmers Interaction.

Organization of health camp

- A health camp was also organized at Jalal village on 21.07.2007. In the health camp in all 182 goats were examined by Veterinary Officers. Out of 182 goats, 132 were vaccinated against Foot and Mouth Diseases and 50 were treated against various ailments.

Organization of on-campus trainings

- An on-campus training programme was organized for the goat farmers/ farmwomen of Barka Nagla adopted village on 18.01.2008, in which 9 goat farmers and 13 farmwomen were present and arranged a visit of Jamunapari, Barbari and Experimental farms.

Organization of off-campus trainings

- Organized an off-campus training on goat reproduction in the adopted village Barka Nagla on 5.10.2007, in which 15 goat farmers were present.
- Organized an off-campus training programme on animal nutrition farmers interaction in the adopted villages Barka Nagla on 28.12.2007, in which 15 goat farmers were present.
- Organized an off-campus training on goat breeding in the adopted village of Pohpa Burj on 11 January, 2008 , in which 13 goat farmers and 2 farm women were present.
- Organized an off-campus training programme on goat health aspects in the adopted village Pauri Shahjadpur on 12.02.2008 , in which 11 goat farmers and 5 farm women were present.

Arranged Group Discussion

- Organized 8 group discussions on improved goat husbandry practices two in each four adopted villages namely Pohpa Burj, Pauri Shahjadpur, Jalal and Barka Nagla and about 100 goat farmers got benefited.

Leaflets preparation and distribution

- A leaflet entitled, “ Unnat Bakri Palan se Sambandhit September ke Mah Mein Dhyan Rakhne Yogya Mukhya Jankariyan was prepared and distributed to the 100 goat farmers/ farmwomen in the adopted villages.
- A leaflet entitled, “ Vaigyanik va Unnat Tarike se Bakri Palan ke Liye October ke Mah Mein Mukhya Sujhav” was prepared and printed by the Scientist of Section.
- A leaflet entitled Bakri palan: November mah mein kya Karen? were prepared and distributed to the goat farmers in adopted villages viz., Pauri Shahjadpur, Pohpa Burj, Jalal, and Barka Nagla of Farah Block of Mathura District, U.P.

Pilot survey of Baldeo and Goverdhan Blocks of Mathura

- A team of the scientists / collaborators of the TOT programme including Dr. R.L. Sagar, Principal Scientist (A.E.), Dr. Dharm Singh, Principal Scientist (LPM), Dr. B. Rai, Sr. Scientist (LPM), Dr. Ashok Kumar, Sr. Scientist (Vety. Med.), Dr. Braj Mohan, Sr. Scientist (A.E.) and Sh. V.K.Sharma. (Technical Assistant) surveyed the area under Baldeo Block of Mathura District, U.P. on dated 07.08.2007 in connection of establishing a TOT Centre of the Institute in the block. The villages namely, Chholi Meerpur (No. of goats 700), Khapparpur (No. of goats 200), Noorpur (No. of goats 700) and Nabipur (No. of goats 200) were visited. In addition to these villages, Nagla Khutia (No. of goats 300) and Hyatpur (No. of goats 1500) villages were also taken into notice.
- Another team of the scientists / collaborators of the TOT programme including Dr. R.L. Sagar, Principal Scientist (A.E.), Dr. Dharm Singh, Principal Scientist (LPM), Dr. Ashok Kumar, Sr. Scientist (Vety. Med.), Dr. Braj Mohan, Sr. Scientist (A.E.), Dr. Shalander Kumar, Sr. Scientist and Sh. V.K.Sharma. (Technical Assistant) surveyed the area under Goverdhan Block of Mathura District, U.P. on dated 10.08.2007 in connection of establishing a TOT Centre of the Institute in the block. The villages namely, Bhimnagar, Anyora and Jatipura, Neem Gaon and Saperon ka Nagla.were visited.

Other activities

- Helped in conducting vaccination, de-worming and treatment of goats in adopted villages.
- Helped in arranging demonstration on preparation of goat milk paneer.
- On 15.01.2008 coordinated video filming of TOT activities by the Doordarshan team in Jalal adopted village.
- On 22.02.2008 and 26.02.2008 engaged in publicity in Pauri Shahjadpur, Pohpa Burj, Seengna Burj, and Seengna villages for National Goat Fair held at CIRG, Makhdoom on 1-3 March, 2008.

Socio-Economics Component

A total of 44 visits were made to the adopted villages during the past one year. The major objective was to motivate farmers to adopt improved technologies and appropriate marketing strategies. Hence understanding existing production and marketing system and capacity building and training of farmers was the focus of the programme. In that order participated in 19 scientists-farmers group discussion and interaction meetings and made 308 individual contacts with the goat farmers to motivate them to integrate scientific goat rearing in the existing farming system and adopting innovative and efficient marketing strategies to sale their surplus goats. Accordingly for organizing the resource poor goat keepers, motivated and supported 11 of them to form a self help group (SHG) namely Shri Ganesh Bakari Palan Svyam Sahayata Samuh in the village Bar ka nagla. To promote TOT efforts, coordinated a video shooting of TOT activities in the adopted villages by Delhi Doordarshan being telecasted on its Krishi Darshan programme.

Majority of the goat keepers were illiterate (Figure 1) and resource poor with a small flock size of goats as subsidiary activity. One of the reasons for low income from goat rearing was identified as poor realization of market price by farmers for their surplus live goats. Due to lack of knowledge and certain constraints, farmers were not taking benefit of lucrative prices during Eid festival and for good quality pure breed animals (Table 1 and 2). Scarcity of feed during winter, paucity of housing space during rainy season, urgent cash needs, poor

health of animals and low level of awareness were the major factors for poor realization of price and distress sale.

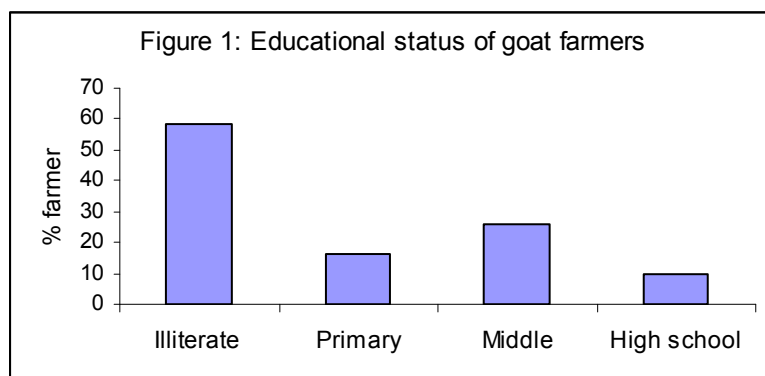


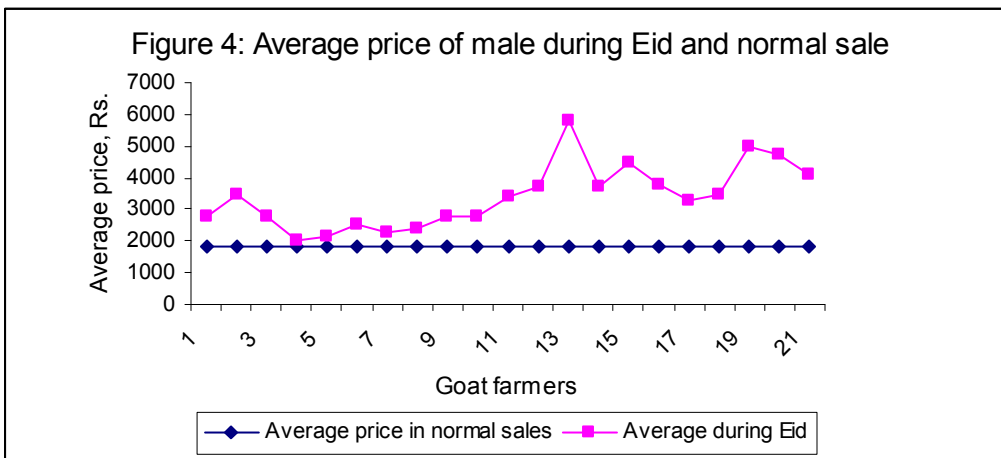
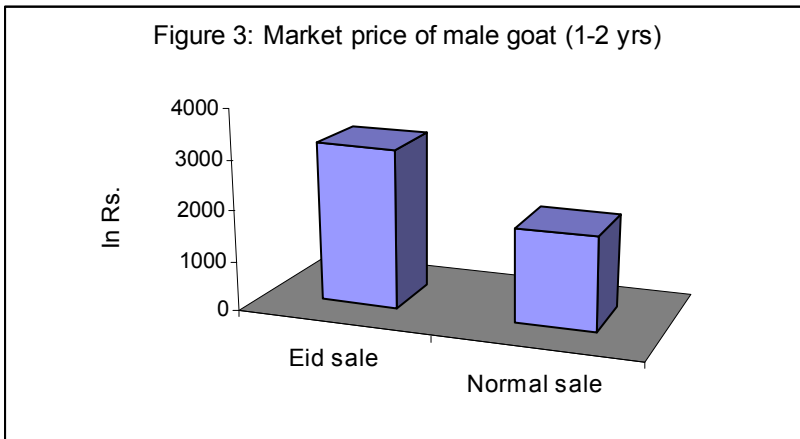
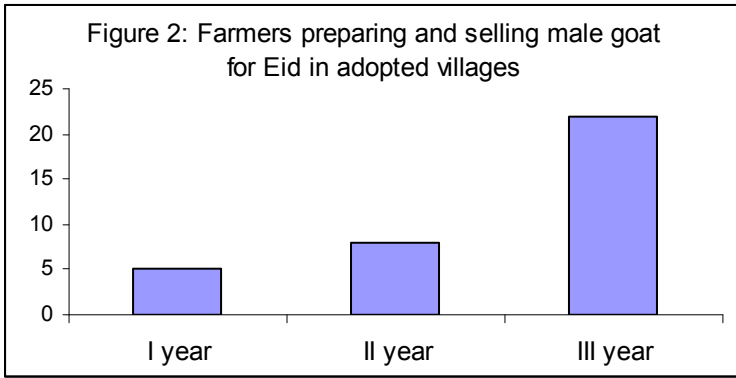
Table 1: Flock Size of goats in adopted villages

Villages	Adult male	Adult female	Kids	Total flock size
Jalal	0.11	3.89	4.56	8.56
Nagla Bar	0.63	6.25	6.00	12.88
Pohpa Burj	0.00	2.33	2.33	4.66
Pouri -Shahajadpur	0.09	3.46	5.00	8.55
Pooled	0.23	4.16	4.87	9.26

Table 2: Farmers' preference for timing of sale of goats

Preferred timing of sale	Reason	Farmer %
Any time	Need of cash	38.71
Winter	Fodder scarcity/ better price	38.71
Eid	Better price	9.68
Rainy season	Risk of disease	19.35

With our capacity building efforts, the goat farmers could learn about appropriate marketing strategy viz. the type of goats to be sold, place of sale, right time and age of sale and right method of sale of goats. There was a considerable change in the attitude of farmers. A number of farmers started preparing castrated male goats for selling them during the festival of Eid (Figure 2). The average price realization during Eid for a male of 1-2 years of age was about 70 per cent higher than the price realized during normal sale in the villages (Figure 3). This year farmers in the adopted villages sold 32 castrated males during Eid (Figure 4). During the normal sales the goats in the villages fetched a price of Rs. 60- 65 per kg of live body weight, while it fetched Rs. 100 – 150 per kg of live body weight during Eid festival. The farmers were also sensitized and made aware of the fact that the pure breed goats (Barbari in this area) sold to breeders/ rearers also attract much higher price as compared to goats sold for meat.



Benchmark survey report on project - Kindly see annexure -II

2008-2009

Coordination of TOT Programme

- Coordinated the Transfer of Technology programme of the Institute.

Visits and advisory services

- In all 156 visits made by the scientists (Drs. R.L. Sagar, Braj Mohan, S. Kumar and Khushyal Singh to 4 adopted villages namely, Pohpa Burj, Pauri Shahjadpur, Jalal and Barka Nagla and made individual contact with about 2845 goat farmers/ farm women at their home during the period under report. They were educated and motivated about the scientific/ commercial goat rearing and convinced them to take the services from the Barbari Breeding bucks which were distributed in the adopted villages under TOT programme for the purpose of breed improvement.

Organization of Kisan Goshthi

- On 13.05.2008 organized a kisan goshthi on “Importance of Goat Milk and Paneer Making Technology” in Pauri Shahjadpur adopted village. In which, 04 Scientists, 02 Technical Staff, 16 farmers and 05 farm women were present.

Organization of Off-Campus Trainings

- On 16.09.2008 organized an off-campus training programme on “Scientific Goat Rearing” in Pohpa Burj adopted village. In which , 03 Scientists, 01 Senior Veterinary Officer, 01 Technical Officer, 01 Technical Assistant and 23 farmers /farm women were present.
- On 07.10.2008 organized an off-campus training programme on “Scientific Goat Rearing” in Pohpa Burj adopted village. In which, 04 Scientists, 01 Senior Veterinary Officer, 01 Technical Officer, 02 Technical Assistants and 18 farmers /farm women were present.

To Facilitate the Vaccination /Deworming /Treatment

- Facilitated the ET, PPR and FMD Vaccination, deworming and treatment in goats of the adopted villages.

PRA in Jalal village

Coordinated a Participatory Rural Appraisal exercise conducted by a group of 30 scientists undergoing training at Center for Advanced Studies at Division of Agricultural Extension, IARI, New Delhi who visited the Institute for a exposure visit on 11th September 2008. Prof. M.C. Sharma, Director, CIRG, Makhdoom gave a brief of Research and Development activities undertaken by the Institute and he also delivered a lecture on ‘Entrepreneurial Opportunities in Livestock Sector’ on the occasion. The group was taken to Jalal village for PRA exercise.

Health Camp and Field Day

As part of the project we organized a Goat Health camp cum Field Day on 5th March 2009 in the



village Jalal of Farah Block, Mathura. During the programme a total of 112 goats were vaccinated against ET and 45 were treated for different ailments. On this occasion, Ms. S. Rawla, IAS, Joint Secretary (P&F), Govt. of India, DAHD&F, MOA, New Delhi and Dr. P.K.Shukla, Joint Commissioner, Poultry, GOI were present and had personal interaction with the women goat keepers about the TOT programme and prospects of goat farming. Dr. M.C. Sharma, Director, CIRG addressed the goat farmers and advised them to take full benefit of the institute's TOT programme for improved goat production. Dr. R.L. Sagar, Principal Scientist & Head, EE&SE Section, Dr(s) Braj Mohan, Sr. Scientist, S. Kumar, Sr. Scientist, A.K. Goel, Pr. Scientist, B. Rai, Pr. Scientist and M. K. Singh Sr. Scientist were also present as component worker of the project. Dr. Hari Prasad, Sr. T.O., Dr. Balraj Singh, T.O., Mr. V.P. Singh, T.O. Mr. V.K. Sharma, Sr.T A and mr. V.K. Gautam also helped in organizing the health camp in the adopted village.

Frontline Demonstration on Mustard

In all 8 frontline demonstrations on mustard of which 3 in Barka Nagla (Varieties Rohini, Luxmi and PCR-7), 2 in Jalal (varieties NRCDR-2 & PCR-), 2 in Salempur(Varieties NRCDR_2 & PCR-70 and 1 in Pauri Shahjadpur (Variety PCR-7) adopted villages were conducted. The details of the demonstrations are presented in following Table

S.No.	Village	Crop	Variety	No. of demonstrations	Area (ha)	Yield(Q/ha)
1	Barka Nagla	Mustard	Rohini	01	0.23	19.47
		„	Luxmi	01	0.23	21.05
		„	PJK	01	0.23	17.50
2.	Jalal	Mustard	NRCDR-2,	01	0.23	19.47
		„	PCR-7	01	0.23	17.50
3.	Salempur	Mustard	PCR-7	01	0.23	18.40
		„	NRCDR-2	01	0.23	19.47
4.	Pauri Shahjadpur	„	PCR-7	01	0.23	17.50
	Total	-	-	08	1.84	18.80 (Average yield)

Table indicates that the maximum yield 21.05 quintal per hectare was obtained from the variety Luxmi followed by NRCDR-2 (19.47 quintal/ ha), Rohini (19.47 quintal/ ha), PCR-7 (17.80 quintal per ha) and PJK(17.50 quintal / ha). An average yield of mustard 18.80 quintal per hectare) was obtained from these frontline demonstrations in the adopted villages under Transfer of Technology programme of the Institute. The yield performance of these demonstrated varieties was very good as reported by the farmers in comparison to the local varieties

Evaluation of changing socio-economic parameters related to goat production

Majority of the farmers kept small number of goats and were illiterate and resource poor with goat rearing as a subsidiary activity. One of the reasons for low income from goat rearing was identified as poor realization of market price by farmers for their surplus live goats. Due to lack of knowledge and certain constraints, farmers were not taking benefit of lucrative prices during Eid festival and for good quality pure breed animals. Scarcity of feed

during winter, paucity of housing space during rainy season, urgent cash needs, poor health of animals and low level of awareness were the major factors for poor realization of price and distress sale.

Table 1: Distribution and change in number of goats and goat-keepers in adopted villages

Village	Total number of goat farmers			Total number of goats		
	2005-06	2008-09	% change	2005-06	2008-09	% change
Jalal	30	38	26.67	140	179	27.86
Nagla Bar	24	27	12.50	215	216	0.50
Pohpa Burj	32	37	15.63	144	167	15.97
Pouri - Shahajadpur	45	42	-6.67	196	190	-3.06
Overall	131	144	9.92	695	752	8.20

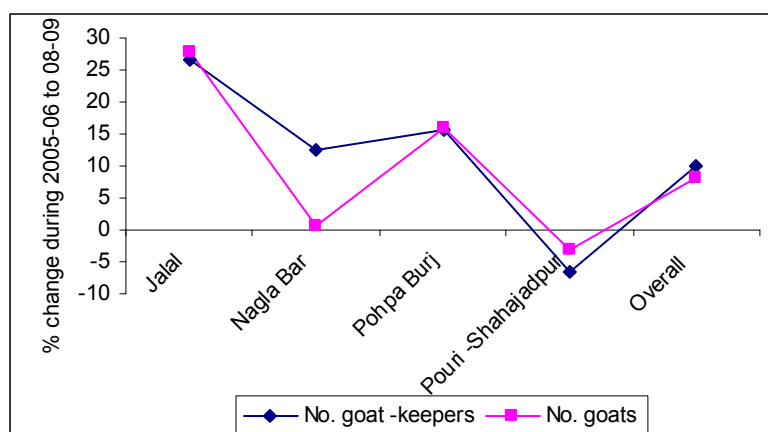


Figure 1: Magnitude of change in number of goats and goat keepers

As a result of TOT programme the more number of villagers got associated with goat rearing activity. The number of goat keepers in the adopted villages was increased by about 10 % over the period of past 3 years (Table 1). It increased in all the adopted villages except Pouri. Overall a good awareness about the benefits of improved goat production technologies, efficient marketing of goats and prospects of goats rearing was created among the people of the adopted villages. With our capacity building efforts, the goat farmers could learn about appropriate marketing strategy viz. the type of goats to be sold, place of sale, right time and age of sale and right method of sale of goats. There was a considerable change in the attitude of farmers. Though the most of the farmers sold their goats in the village itself to the traders, but with the increased awareness they were better able to bargain and negotiate with the traders. A number of farmers started preparing castrated male goats for selling them during the festival of Eid (Figure 2). The average price realization during Eid for a male of 1-2 years of age was about 70 per cent higher than the price realized during normal sale in the villages. This year farmers in the adopted villages sold 33 castrated and non-castrated males during Eid (Figure 3). During the normal sales the goats in the villages fetched a price of Rs. 65-75 per kg of live body weight, while it fetched Rs. 100–150 per kg of live body weight during Eid festival. The farmers were also sensitized and made aware of the fact that the pure breed goats (Barbari in this area) sold to breeders/ farmers also attract much higher price as compared to goats sold for meat.

Under the TOT programme though the recommended prophylaxis measures against various diseases and parasites of goats were taken up, but the number of goats of the farmers of the adopted villages still suffered with diseases and parasites and that caused significant losses to the goat keepers. The detail of the comparative losses due to diseases in goats over the past 3 years has been presented in Figure 4 & 5.

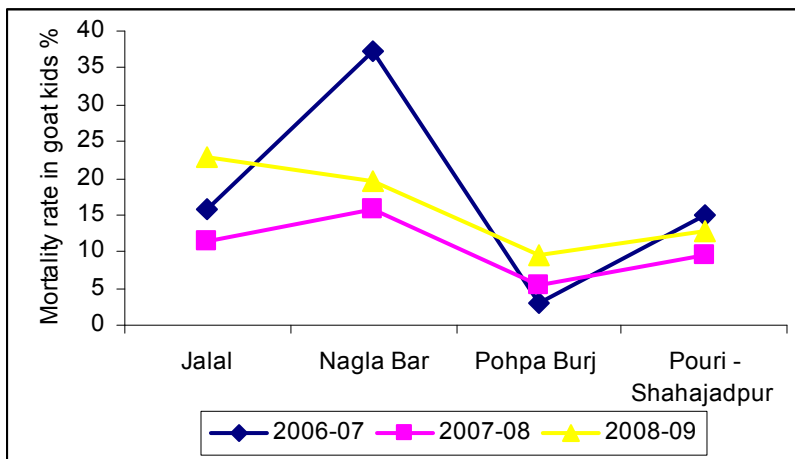
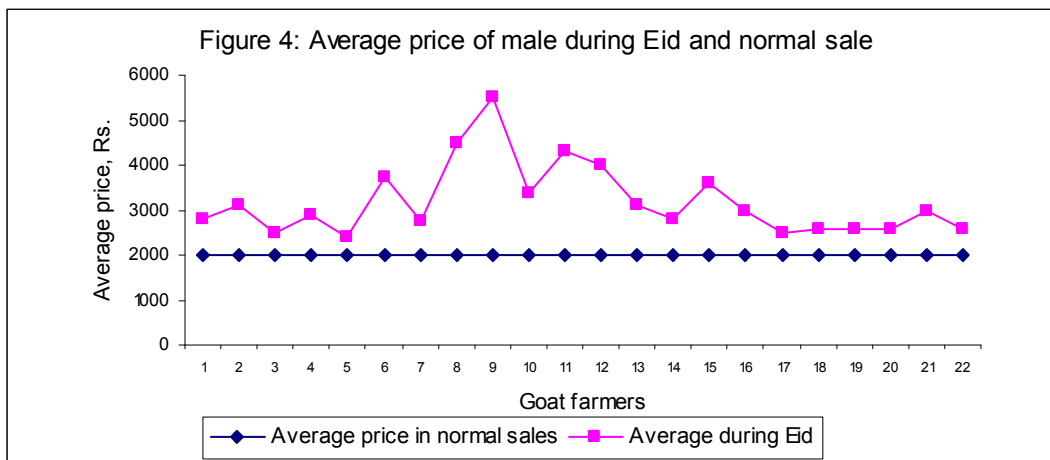
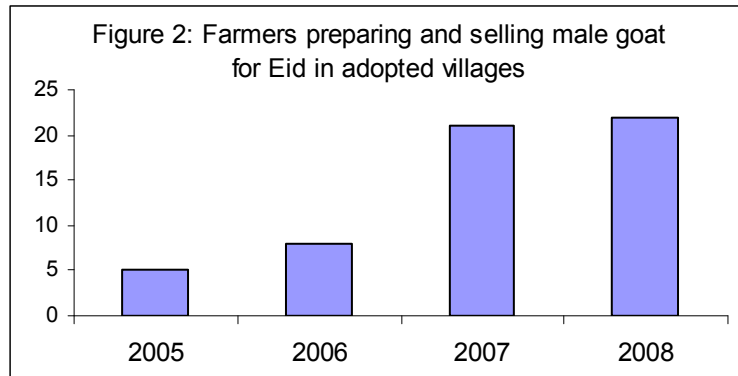


Figure 4: Mortality rate in goat kids in the adopted villages

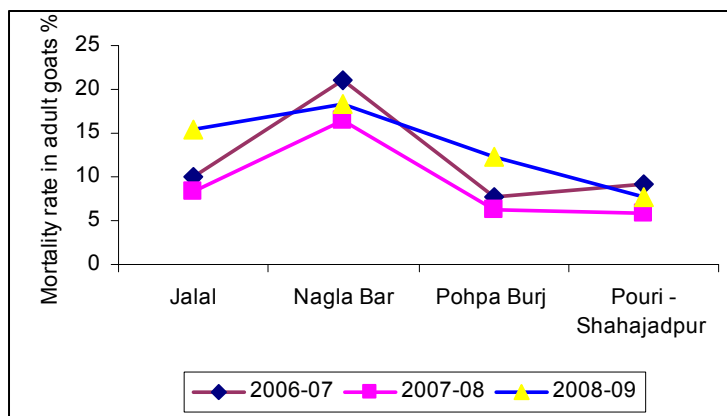


Figure 5: Mortality rate in adult goats in the adopted villages

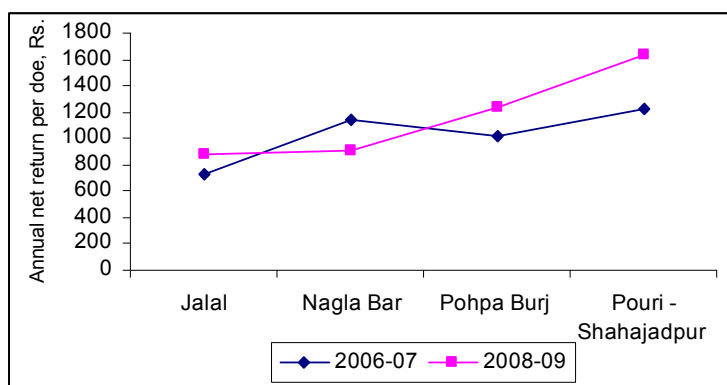


Figure 6: Annual net returns per doe in the adopted villages

During the past 3 years the annual net returns per doe increased significantly in the adopted villages except Bar ka Nagla. Hence it may be concluded that the programme had a positive impact on the economy of the goat keepers. However an effective prevention of diseases in goats would further enhance the economic prospects of goat production.