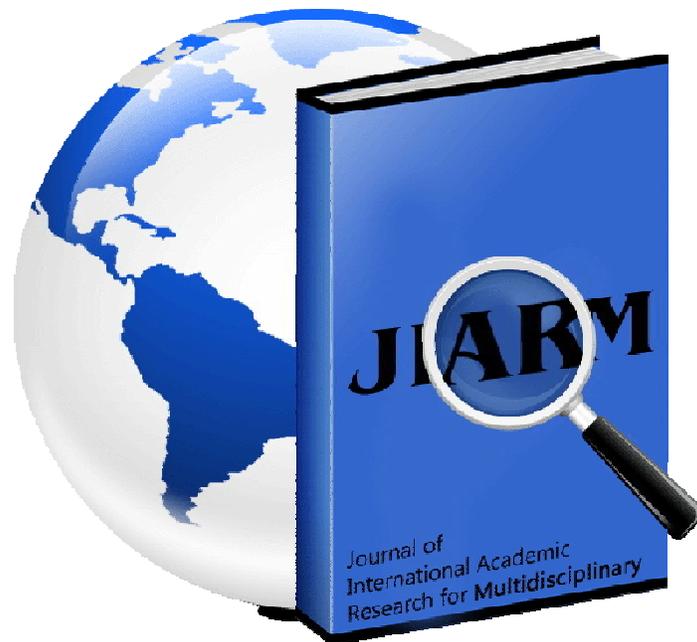


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SHEEP PRODUCTION AND MANAGEMENT IN TAMIL NADU – A CASE STUDY

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ABSTRACT

The scientific literature on Economics of Sheep Farming is many and had addressed on the efficiency of small, marginal and big farmers. But the documentation of sheep farming as a case study in the context of an agribusiness venture is not documented. Hence, a case approach is practiced to document the success story of sheep farming. The human resources are effectively utilized in the case farm and the resources are directed to achieve a vision based actions to make the farm a more specialty enterprise. The land resources are properly allocated to competing needs of food, shelter and revenue making by mitigating the land resource for repeated usage and the cropping intensity rose to the level of 135 per cent which is above the district and state average revealed that the private farms are efficient. The farm has a mixture of animals which are arrived at 213 in numbers. Out of which goat population alone is accounted for 5 per cent and the sheep population is arrived at 94 per cent. To protect these goat and sheep population from poaching and to safeguard from the wild animals, the Farmer-cum-Agripreneur has trained two dogs of Rajapalayam breed which guarded the sheep and goat herd and are serving the role of pilots as in human VIP escorts. The common grazing lands alone have permitted the sheep flocks to graze for 62 days mainly during the rainy season. The forest floor plus common grazing lands permitted the sheep to graze for 289 days per annum which is accounted for 37.31 per cent to the total amount paid per annum. The grazing in forest floor attracted a license amount of Rs. 2500 per annum. The total variable cost is found to be on the higher side in sheep rearing activity in which the imputed value of family labor is accounted to be the major cost. While examining the fixed investment, the cost of animals procured for rearing consumed higher cost. Besides these, the constraints faced by the Farmer-cum-Agripreneur and the needed strategies to overcome the constraints are also discussed in this paper.

KEYWORDS: Economics of Sheep Production, Cost of Production, Sheep Farming, Costs and Returns in Sheep Farming

INTRODUCTION

In India, about 64 per cent of the population is engaged in agriculture and rearing livestock, a subsidiary occupation to agriculture. The livestock plays an important role, specifically in the rural economy. It provides a stable and well-distributed income throughout the year. Sheep husbandry is an important part of the people of arid, semi-arid and hilly region of the country. The resource poor people in the lower strata of society rear the sheep. It is the most important species of livestock for utilization of available sparse vegetation and owing to their multifaceted utility (wool, meat, skin, milk and manure) constitute an important part of rural economy. The total population of sheep in India was 61.5million that was 6.0 per cent of the world's sheep (1024.0 million) population. India ranks fourth in global sheep production (Suresh et.al. 2008).

India possesses one of the largest livestock populations in the world. In 2004, the country had 61 million sheep, while the Tamil Nadu had 5.59 million sheep. The sheep population in the state had always registered a positive growth rate except during 1989–94 and 1994–97 periods. In 2006-07, sheep farming contributed to 45 million kg of wool and 2.3 million tonnes of meat (Economic Survey, 2007-08). The meat sector contributed about 73 per cent of total livestock exports from India during the year 2007. The huge expected increase in the demand for meat in developing countries especially in South-East Asia in the next 20 years presents an excellent opportunity for enhancing export of live goats and chevon from India (Selvakumar et.al.2012). Sheep farming provides regular employment and income to the rural farmers and is little influenced by the vagaries of nature. Hence, it becomes imperative to study the economics of sheep production from time to time to exploit this growing sector more efficiently (Prabhu et.al. 2009).

The Advantages of Sheep Farming

Sheep can use practically all types of available forage including crop residues and even the grass available in the polluted canals and banks. Abundance of forage is key to sheep production. The successful producer also must have a genuine interest in sheep farming, management of sheep farm efficiently, and the labor to care for the sheep health and hygiene. The main advantages of Sheep production are

- Sheep are easy to handle and generally require little input
- Sheep production does not require elaborate facilities and equipments
- Sheep consumes the available roughage as their primary feed

- Sheep help control weeds in the farm
- Sheep provide cash income from wool, mutton and pellets
- Sheep requires minimal amount of supplemental feeding
- Sheep feeds on roughages and gains weight and provides quick return on investment

Disadvantages of Sheep Production

- Sheep farming commands utmost care during severe drought and severe rain
- Sheep are subject to predation by Panther, Tiger, Lion, Bears, Wild and Domestic Dogs
- Sheep requires better fencing and care
- Parasitic attacks can create health problems when sheep grazed on irrigated pastures and the pastures raised using polluted waters
- Consumer preference towards sheep meat is low when compared to the goat meat

Although the economic contribution of sheep seems to be quite substantial in the agricultural economy as well as in the national economy, the sheep farmers are yet ignorant about scientific management practices. If their breeding, feeding and management aspects are effectively supervised, the country can become one of the leading wool producing nations of the world, therefore, improvement in existing sheep population is essential. Considering the vitality of above stated facts, the present case study was attempted to carry out with the specific objective of determining the management practices followed in sheep production for making it as a successful commercial agribusiness venture.

MATERIALS AND METHODS

Periyakulam Taluk of Theni District is in the foot hills of Kodaikanal attract the farmers for its rich vegetation, good climate and normal rainfall motivated them to practice higher area under fruits and vegetables. Because of rich vegetation, it has also attracted the owners of sheep herd from Ramanathapuram District which is mainly drought hit zone unable to do the grazing of sheep and hence many of the owners of sheep herd had migrated to the Kodaikanal foot hills and are guiding the sheep flocks for grazing. Many of the studies and feasibility reports advocated sheep rearing in pens by providing supplemental feeding with feed concentrate mix for gaining weight in a short span of time. Mathis and Tom Ross (2005) in their report also advised the producers' of sheep in knowing the nutritional requirements of animals during different phases of production viz., nutrient requirements during reproduction, gestation, lactation etc., But the farmers who are guiding the sheep flocks for grazing in common lands and in the forest floor are maintaining the sheep flock in good health and

commanding higher revenue on sale of major and minor products realized from sheep farming without providing any additional feed concentrate. The Owner-Manager of the case farm, Mr.Sakthivel is guiding the sheep flocks and rearing successfully in a vision based approach has motivated the author to take the students for a class purpose. This paper is the outcome of taking the students of Third year B.Sc.(Horticulture) of Horticultural College and Research Institute, Tamil Nadu Agricultural University, Periyakulam for the Course entitled “ Production Economics and Farm Management”. One would be appreciated on learning the treasure of outcome of this publication.

RESULTS AND DISCUSSION

Sheep has got special importance among all other livestock species due to their multifaceted utility. India possesses one of the largest livestock populations in the world. Since sheep farming provides regular employment and income to the rural farmers and is little influenced by the vagaries of nature, it becomes imperative to study the economics of sheep production from time to time to exploit this growing sector more efficiently. Being the course teacher, it is my duty to expose the Students to the successful agribusiness venture which are not exposed to them in the right sense and hence a detailed analysis of sheep farming is made as a case study and the findings are presented in the following different sub heads to ease the students, academicians, planners, bankers and the researchers as a guidance tool in entering into this small agribusiness venture.

1. General Characteristics of the Sheep Farm
2. Details of Animal Population in the Case Farm
3. Details of Grazing Land Available to the Case Farm
4. Costs and Returns in Sheep Rearing Venture
5. Constraints Faced by the Agribusiness Firm

1. GENERAL CHARACTERISTICS OF THE SHEEP FARM

The single enterprise formed the back bone of the study since it is considered as a successful venture in sheep rearing. Hence, the results under the general characteristics are analyzed and are discussed in detail under the following sub heads

- 1.1. Size of the Family of the Case Farm
- 1.2. Size of Holding Available with the Case Farm
- 1.3. Land Use Pattern Prevalent in the Case Farm

1.1. Size of the Family of the Case Farm

The discussion on the size of the family is very important in this context. Because, it provides the opportunities for utilizing the family labor and clearly spell out the possibilities of whether to hire the labor or to run the farm with the available labor. Hence, an analysis was made and the results are presented in Table 1.

Table 1: Size of the Family of the Case Sheep Farm

Sl. No	Particulars of Family	Number of Persons	Number of Years in Education	Percentage to Total
01	Earners	02	05	33.33
02	Dependent for Education	03	10	50.00
03	Dependent for Livelihood	01	00	16.67
04	Attached Farm Labor	01	05	00.00
	Size of the Family	06	05	100.00

Table 1 revealed that the size of the family with the case farm is found to be six in numbers. Out of the six members, two are earners whom accounted to be 33 per cent to the total. The number of earners are the family labours both husband and wife listening to the production and management activities of sheep farm. Three are the dependent children for education and are studying in eleventh, ninth and seventh standards in Government Schools of Periyakulam. The importance given towards highlighting the children’s education is the one who has completed the tenth standard has scored state first in Tenth standard examination and got the Chief Minister’ Award for scoring the highest mark in the Secondary School Examination conducted by the State Board of Secondary Education, Government of Tamil Nadu. The Owner Manager of the Case Farm revealed that the elder son is going to be given with Veterinary Education for running the enterprise in a scientific and technical way of managing the same to elevate the enterprise as number one in Tamil Nadu. Another dependent is the mother of the Owner Manager caring the agricultural crops to be grown in the vacant land with the support of one Attached Farm Servant

On examining the size of the family, the case farm utilizes every individual human resource in a proper direction with a vision to educate, guide and direct them to take the farm to new heights of achieving in the agribusiness.

1.2. Size of Holding Available with the Case Farm

Analyzing the details on size of holding is equally important to know how effectively the resources are being used and the products and bi-products are generated for various end uses. The details are analyzed and the results are presented in Table 2.

Table 2: Size of Holding Available with the Sheep Farm

Sl. No	Details of Land Use	Size of Holding (Acres)	Percentage to Total Holding
01	Crop Cultivation	02.00	88.89
02	Pen for Sheep Flocks	00.20	08.89
03	Residential Use	00.05	02.22
	Total Land Use	02.25	100.00

Table 2 revealed that the Owner Manager of the Case sheep farm is in possession of 2.25 acres. Out of which two acres is earmarked for crop cultivation exercise which is accounted for 89 per cent to the total size of holding with the farmer. For accommodating the sheep flocks, only 8.89 per cent of land is allotted and the pen was erected to protect the animals. During the rainy season, a temporary measure of providing plastic tarpaulin above the pen is given to protect the animals from the rain and the residential space for habitation of family of owner-manager is accounted to be at only 2.22 per cent of the total size of holding.

From the details of size of holding, one could understand that strict allocation of space for each entity and the output realization is carefully listened to have the planned output from each entity. However, the land use pattern delineates the details of what was grown and what was realized and the details are presented in Table 3

1.3. Land Use Pattern Prevalent in the Case Farm

Under the head of crop cultivation as delineated in Table 2, the area earmarked is only 2 acres. Out of which paddy and cotton are cultivated in 0.70 acres each under partly irrigated condition which are respectively accounted for 25.93 per cent to the total area under crops followed by Chillies raised in an area of 0.60 acres which is accounted for 22.22 per cent to the total area under crops. After harvesting the paddy crop, pulses and gingelly are raised in an area of 0.40 acres and 0.30 acres respectively which are accounted for 14.81 per cent and 11.11 per cent to the total area under crops.

Table 3: Land Use Pattern in Practice with the Sheep Farm

Sl. No	Details of Crops Cultivated	Area Under Crops (Acres)	Quantity of Output (Quintals)	Gross Return Realized (Rs)
01	Paddy	00.70 (25.93)	12.60	10080
02	Chillies	00.60 (22.22)	07.00	14000
03	Cotton	00.70 (25.93)	06.00	12000
04	Pulses*	00.40 (14.81)	03.00	06000
05	Gingelly*	00.30 (11.11)	01.20	04800
Total		02.70 (100.00)	29.80	46880
Cropping Intensity in Per Cent*		135.00*		

(Figures in Parentheses Indicate Percentage to Total)

On examining the cropping intensity practiced in the farm, it is found to be of 135 per cent which revealed that the resources are effectively utilized to reap the benefits out of scarce resources to sustain the livelihood through farming and the farming helps providing roughages to the sheep often it will serve as hideouts and act as emergency feed to sheep.

To sum up, under the head of general characteristics of the farm, the human resources are effectively utilized and the resources are directed to achieve a vision based actions to make the farm a more specialty enterprise. The land resources are properly allocated to competing needs of food, shelter and revenue making by mitigating the land resource for repeated usage and the cropping intensity raised to the level of 135 per cent which is above the district and the State average revealed that the private farms are efficient and the successful model should be emulated periodically by Government organizations to the emerging Agripreneur to make the farm enterprise a successful one which could contribute to the growth of Indian economy.

2. Details of Animal Population in the Case Farm

The first section dealt with crop cultivation and the general land use details in a fit – in – manner. The second part dealt with details of animal population raised in the farm and how these animals are managed effectively is analyzed and the results are presented in Table 4.

Table 4: Details of Animal Population in the Sheep Farm

Sl. No	Details of Animals	Numbers	Name of the Breed	Percentage
01	Male Goat	01	Thallasseri	00.47
02	Female Goat	10	Thallasseri	04.69
03	Male Sheep	05	Meacheri	02.35
04	Female Sheep	75	Meacheri	35.21
05	Female Sheep	120	Mylambadi	56.34
06	Pilot Dogs	02	Rajapalayam	00.94
	Total	213		100.00

Table 4 revealed that the farm has a mixture of animals which are arrived at 213 in numbers. Out of which goat population alone is accounted for 5 per cent and the sheep population is arrived at 94 per cent. To protect these goat and sheep population from poaching and to safeguard from the wild animals, the Farmer-cum-Agripreneur has trained two dogs of Rajapalayam breed which guarded the sheep and goat herd and are serving the role of pilots as in human VIP escorts. The Dog number one Proceeds to the target place for grazing and the other Dog shapes the herd to lead unidirectional. The Owner Manager and his wife are the followers on other side and back to escort the entire team of sheep herd. The pilot alone accounted for around one per cent to the total animal population raised in the case farm.

It is interesting to note that the role played by the pilot dogs is commendable as they are communicating differently to the animals and when they face threat due to wild animals or the transportation threats when they have to cross the roads which are not visible in human. The human folk have learnt violation on many events. But the animals have communication which shapes them and protects them from threats.

2.1. Birth and Death of Sheep Kids in the Case Farm

The section two dealt with number of animals available in the farm. In continuation of their active existence, how many animals produced on reproduction and added to the total population and how many deceased due to multifarious issues are analyzed and the details are presented in Table 5.

Table 5: Birth and Death of Sheep Kids in the Case Farm

Sl. No	Particulars of Birth / Death / Theft of Animals	Number of Animals	Percentage to Total
01	Sheep Kids Delivered	195	91.55
02	Goat Kids Delivered	018	08.45
	Total Animals Delivered	213	100.00
03	Died After Birth	011	05.16
04	Theft of Animals	005	02.35
05	Lifting of Sheep by Wild Animals	008	03.76
06	Died due to Disease Attack	009	04.23
	Total Number of Animals Lost	033	15.50

Table 5 revealed that the total animals delivered and added to the existing sheep flock are arrived at 213 in numbers. Out of which, the goat kids delivered are accounted to be of 8.45 per cent to the total kids. The number of sheep kids delivered in the case farm is arrived at 195 which is accounted for 91.55 per cent to the total kids delivered in the farm. Out of the delivered kids, 5.16 kids were died immediately after taking birth followed by lifting of sheep by wild animals is accounted for 3.76 per cent while grazing in the forest floor. While penning the goats, theft could also be observed out of careful watch and ward service extended which is also accounted for 2.35 per cent to the total number of animals lost.

During the rainy season, an outbreak of Blue tongue disease and foot and mouth disease also caused death of animals which is accounted for 4.23 per cent to the total number of animals lost. A brief on the Blue tongue disease is presented for better understanding which is wide spread during the rainy season particularly in the southern part of Tamil Nadu

2.2. Blue Tongue Disease

Blue tongue is an insect-borne, viral, non-contagious disease that occurs in many parts of Tamil Nadu. Mathis and Tim Ross (2005) has also reported that such disease is prevalent in

New Mexico. It is transmitted from infected animals to susceptible sheep by the bites of a small insect commonly referred to as a gnat. The disease normally occurs from midsummer until frost. Early symptoms usually include excessive salivation, reddening of the lips and mouth, and progressive darkening of the vascular areas of the mouth. Furthermore, the muzzle, lips, tongue, throat, and sometimes the ears and neck become swollen. Occasionally, sheep suffer from severe lameness as well. Not all signs of blue tongue appear in a single sheep or even in a single outbreak (Mathis and Tim Ross 2005)

Best control methods involve controlling the gnat. Since this insect breeds in the mud along the edges of slow-moving streams or water tank overflow, try to eliminate these breeding sites. Breeding sites also can be sprayed with insecticides. A modified live-virus type of vaccine is available, but it is estimated that six to seven different viruses cause blue tongue. Occasionally, the vaccine may cause a reaction that is nearly as bad as the disease itself. Pregnant ewes, particularly in the first 50 days of gestation, should not be vaccinated. No satisfactory medical treatment has been found for animals with blue tongue. Generally, with proper care, most animals recover naturally within 14 days, although severely affected animals may recover more slowly. Isolate affected animals in a shaded area with palatable feed and fresh water. Antibiotics are of no value in the treatment of blue tongue, but they are helpful in preventing secondary infections (Mathis and Tom Ross, 2005).

3. Details of Grazing Land Available for Grazing

Cage method of farming permits energy saving and fattening cycle becomes easier and the productivity per animal becomes increased. But it is not prevalent in grazing method by permitting the animals to graze in the open land. But the health of the animal could be maintained to certain extent. Hence, the details of resources available for open grazing is analyzed and the results are presented in Table 6.

Table 6: Details of Grazing Lands Available to Sheep Farm

Sl. No	Particulars of Grazing Land Available	Number of Days Per Annum	Amount Paid Per Annum	Percentage to Total
01	Private Patta Lands + Common Grazing Lands	014	4200.00	62.69
02	Common Grazing Lands alone	062	00.00	00.00
03	Forest Floor + Common Grazing Lands	289	2500.00	37.31
	Total	365	6700.00	100.00

Table 6 revealed that the Private patta lands plus the common grazing lands like foreshore area of the tank, ponds, streams etc. permitting the animals for grazing only to 14 days. For that, an amount of Rs 4200 is paid by the Owner Manager of the case farm which is accounted for 62.69 per cent to the total amount paid per annum for grazing of sheep flocks. The common grazing lands alone permitted the sheep flocks to graze for 62 days mainly during the rainy season. The forest floor plus common grazing lands permitted the sheep to graze for 289 days per annum which is accounted for 37.31 per cent to the total amount paid per annum. The grazing in forest floor attracted a license amount of Rs. 2500 per annum which is to be obtained from the Forest Range Officer of Periyakulam, Theni District. However, in recent days, the forest officials are not demanding any license or permits for grazing of sheep flocks but they deny any goats to graze the forest floor. Hence, careful segregation is needed while permitting the sheep to graze the forest floor. To sum up, for open grazing, the common lands and the forest floor alone contributed to the maximum number of days for grazing of sheep. Otherwise supply of additional roughages to the sheep flocks attracts costs that are always not possible from the side of Farmer-cum-Agripreneur.

4. Costs and Returns in Sheep Rearing

One has to assume here that every business firm has a certain state of Technology or know how. That is, how the firm is producing various levels of outputs with the given prices of inputs and outputs. With data on those variables, one can understand the relationships between costs and output levels. Basically we require data on output, fixed costs, variable costs and the prices of inputs and outputs. In Sheep and Goat rearing activity of the case farm, the costs are discussed under the head of fixed costs and variable costs separately and the details are analyzed and presented in Tables 7 and 8 respectively.

Table 7: Fixed Investment in Sheep Farming
(Investment for a unit of 200 Sheep Consists of 195 Female and 05 Male)

Sl. No	Details of Fixed Expenses	Life of the Asset (Years)	Amount Incurred (Rs)	Annual Fixed Cost (Rs)
01	Cost of 195 Female Sheep weighing 20 Kg per animal @ Rs 250 per Kg	07	975000	139286 (60.61)
02	Cost of 5 Male Sheep Weighing 20 Kg per animal @ Rs 250 per Kg	07	25000	3572 (01.55)
03	Cost of 5 Goats Weighing 20 Kg per Animal @ Rs 250 per Kg	07	25000	3572 (01.55)
04	Cost of Pen for 195 adult female Sheep + and 5 Adult Female Goats @ 10 Sq. feet per animal @ Rs 200 per Sq. Feet	10	400000	40000 (17.40)
05	Cost of Pen for 5 Adult Male Sheep + 1 Adult Male Goat @ 20 Sq. Feet per Animal @ Rs 200 per Sq. Feet	10	24000	2400 (01.04)
06	Pen for 200 Kids @ 5 Sq. Feet per Kid @ Rs 200 per Sq. Feet	10	200000	20000 (08.70)
07	Cost of Equipments like Pails, Buckets and Ropes 10 Numbers @ Rs 500 per unit	02	5000	2500 (01.09)
08	Erection of one Bore Well Unit @ Rs.75000	10	75000	7500 (03.26)
09	Erection of a Water Tank for Water arrangements for the 200 Animals	10	10000	1000 (00.44)
10	Miscellaneous Cost under Fixed Expenses	01	10000	10000 (04.36)
Total Fixed Cost (Rs.)			1749000	229830 (100.00)

Table 7 revealed that the Total Fixed Cost (TFC) incurred towards establishment of sheep farm is arrived at Rs 17.49 lakhs which included cost of animals, cost incurred towards erection of pen for the animals, one bore well unit and the overhead water tank. The Annual Fixed Cost (AFC) was worked out for incorporation in the cost analysis was arrived at Rs. 2.30 lakhs. Out of which, the cost of animals alone accounted for 60.61 per cent to the total annual fixed cost followed by cost of pen which is accounted for 17.40 per cent to the total annual fixed cost revealed that these two are the major investments under the head of fixed cost for establishing a sheep farm. The life term of the animal is fixed at seven years and the cost incurred towards purchase of sheep was arrived at 1.39 lakhs as annual fixed cost. The miscellaneous expenses under fixed onetime expenses towards consultation and other charges is arrived at Rs 10000 per annum which is accounted for 4.36 per cent to the total annual fixed cost followed by the erection of bore well for drinking and other farm management activities which is accounted for 3.26 per cent to the total annual fixed cost.

From that one could understand that the cost of sheep for sheep rearing alone is the major item of cost followed by pen making charges and the annual fixed cost per animal is arrived at Rs 1079 and let us analyze the variable expenses incurred towards maintenance of sheep farm which is presented in Table 8.

Table 8 revealed that the imputed value of family labour spent towards maintenance of sheep farm was arrived at Rs 1.82 lakhs per annum which is accounted for 69.60 per cent to the total variable expenses followed by insurance charges for the animals which is arrived at 15 per cent to the total variable expenses.

Table 8: Details of Variable Expenses in Sheep Rearing

Sl. No	Details of Variable Cost	Amount (Rs in Lakhs)	Percentage to Total
01	Grazing Charges for 10 Days Per Month @ 500 per day in Private Farm Lands	15000	05.72
02	License Charges for Grazing Permits in the Forest Floor for 250 Animals per Annum	2500	00.95
03	Feeding of Male and Female Goats for 3 Months @ 300 grams per day per Animal @ Rs 10 per Kg of Feed	1350	00.51
04	Feeding of Kids for 3 Months @ 100 grams per day per Animal @ Rs 10 per Kg of Feed	900	00.35
05	Cost of Veterinary Medicine and Health Care to Animals 10 Visits @ Rs. 1000 per visit including Medicines	10000	03.81
06	Insurance Premium Charges @ 4 per cent	40000	15.25
07	Imputed Value of Family Labor @ Rs 300 for Men and 200 for Women Days	182500	69.60
07	Miscellaneous Expenses under the Head of Variable Cost	10000	03.81
	Total Variable Cost	262250	100.00

Grazing charges incurred towards grazing of sheep in private farms is accounted for 5.72 per cent to the total variable expenses. The total variable cost (TVC) is arrived at Rs. 2.62 lakhs and the maintenance cost per animal is arrived at Rs 1231. Put together the total cost spent towards rearing of one sheep is arrived at Rs 2310 per annum and the returns realized from the sheep farm is analyzed and the results are presented in Table 9.

Table 9: Returns Realized From Sheep Production

Sl. No	Details of Revenue Earned	Amount (Rs in Lakhs)	Percentage to Total
01	Sale of Animal by Live Weight @ Rs. 300 per Kg @ 20 Kg per Animal (180 Numbers)	1080000	61.28
02	Sale of Animal by Live Weight @ Rs 300 per Kg @ 12 Kg per Animal (90 Numbers)	324000	18.38
03	Insurance Claim for 14 Animals @ Rs 2000 Per Animal	28000	01.59
04	Sale of Manure realized from Sheep and Goat Farm @ 1.50 Kg of Pellets per day per Animal for 213 Animals @ Rs 2 per Kg of Manure	233235	13.23
05	Sale of Manure realized from Sheep and Goat Farm @ 1.50 Kg of Pellets per day per Animal for 180 Animals @ Rs 2 per Kg of Manure	97200	05.52
06	Gross Return Realized from Sheep and Goat Rearing (213 Animals)	1762435	100.00
07	Total Variable Cost Incurred in Sheep and Goat Rearing	262250	53.29
08	Annual Fixed Cost incurred in Sheep and Goat Rearing	229830	46.71
09	Total Cost (Total Variable Cost + Annual Fixed Cost)	492080	100.00
10	Net Return Realized From Goat Farming	1270355	72.08
11	Cost of Production of Meat per Kg	105.15	
12	Output – Input Ratio	03.58	

Table 9 revealed that the gross return realized from a goat and sheep unit with the population of 213 animals was arrived at 17.62 lakhs per annum in that the net return realized was arrived at 72 per cent to the gross income generated by the sheep farm. Sale of meat from the animals alone accounted for 80 per cent of revenue and the manure drawn from those animals was accounted for 13 per cent of gross revenue after deducting the animals lost due to theft, lifting of sheep by wild animals etc. A study conducted by Prabhu et.al. during 2009 revealed that the total cost incurred in sheep farming per farm with imputed value of family labour per farm was the lowest in small farms and the highest in marginal farms. The overall picture showed that the gross income obtained per farm per annum from sheep flock was highest in marginal farms followed by landless farmers, small farmers and was the lowest in large farms. The total cost of production of 213 animals was arrived at 4.92 lakhs. Out of which the Total Variable Cost alone accounted for 53.29 per cent and the Annual Fixed Cost was accounted for 46.71 per cent to the Total Cost incurred in the sheep farm. The cost of production of meat per kg was arrived at Rs. 105 and the output – input ratio was arrived at 3.58 revealed that for a rupee of investment in the sheep farm, it could generate Rs 3.58 as

gross income which is highly profitable. To sum up, the Total variable cost is found to be on the higher side in sheep rearing activity in which the imputed value of family labor is accounted to be the major cost. While examining the fixed investment, the cost of animals procured for rearing consumed higher cost and the analysis revealed that the cost of production of meat per kg is only Rs 105 and the selling price is arrived at Rs 300 per kg live weight and hence there is good scope for establishing sheep farm in the arid and semi arid regions of Tamil Nadu which will yield profitability and hence the school drop outs and the unemployed can choose this agribusiness venture by availing the loan from the commercial bank for getting sustainable income.

5. Constraints Faced by the Agribusiness Firm

There are few constraints faced by the Owner-Manager of the case farm which are considered to be the vital factors in running the sheep farm. They are

- A general threat from the private land owners that the sheep would have entered into their farm and hence often they infuse restrictions that the goat should not come by this way causes problem in maintaining the grazing time for the animals
- Theft among the common public is more visible in this zone and hence the Owner-Manager of the case farm should infuse more vigil in caring the animals and hence it consumes much of his sleep and permits sleeplessness
- Timely availability of insurance and the formalities for availing is a big problem and hence the farmer has withdrawn the insurance policy and takes personal care of animals
- The Governmental intervention through developmental programs is not percolated to the sheep flock owners and hence the Department of Animal Husbandry should launch special schemes to protect their interest in establishing and maintenance of sheep flocks.

SUMMARY AND CONCLUSIONS

In the Case Farm, the human resources are effectively utilized and the resources are directed to achieve a vision based actions to make the farm a more specialty enterprise. The land resources are properly allocated to competing needs of food, shelter and revenue making by mitigating the land resource for repeated usage and the cropping intensity raised to the level of 135 per cent which is above the district average revealed that the private farms are efficient. It is also interesting to note that the role played by the pilot dogs is commendable as they are communicating differently to the animals and when they face threat due to wild animals or the transportation threats when they have to cross the roads. In respect of open grazing, the common lands and the forest floor alone contributed to the maximum number of days for grazing of sheep. Otherwise supply of additional roughages to the sheep flocks attracts costs that are always not possible from the side of Farmer-cum-Agripreneur. The total cost of production of 213 animals was arrived at 4.92 lakhs. Out of which the Total Variable Cost alone accounted for 53.29 per cent and the Annual Fixed Cost was accounted for 46.71 per cent to the Total Cost incurred in the sheep farm. The cost of production of meat per kg was arrived at Rs. 105 and the output – input ratio was arrived at 3.58 revealed that for a rupee of investment in the sheep farm, it could generate Rs 3.58 as gross income which is highly profitable and hence the young Agripreneur can take up this as their agribusiness venture for profit making.

Strategies and Recommendations

- The Governmental intervention through developmental programs are not percolated to the sheep flock owners and hence the Department of Animal Husbandry should launch special schemes to protect their interest in establishing and maintenance of sheep flocks
- The problem of availing insurance posed him not to invest in insurance related measures and a personal vigil is imposed on the herd to protect from theft, lifting of sheep by wild animals. Hence, a campaign can be arranged by the Department of Animal Husbandry along with the Insurance agencies so that the grievances of Sheep flock owners could be solved through need based amendments.
- One of the children of the case farm owner has got the state first rank in the Examinations conducted by Board of Secondary Education of Government of Tamil Nadu and got the appreciation certificate and medal from the Honorable Chief Minister of Tamil Nadu and hence the children's further education may be made more

professional as the father of the children is aiming to make him a veterinarian and hence an allocation of sheets to the children of sheep flock owners may be arranged on the lines of Farmers Quota. On fulfilling these recommendations, the sheep flock owners and their survival could be sustained.

- The successful model of the case farm dealing with agribusiness should be emulated periodically by Government organizations to the emerging Agripreneur to make the farm enterprise a successful one which could contribute to the growth of Indian economy.

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