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# CONSTRAINTS OF ATTAPPADI TRIBAL LIVESTOCK FARMERS: A RANK BASED QUOTIENT ANALYSIS

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**Abstract**

*The present study has featured various constraints perceived by tribal livestock farmers of Attappadi under different livestock management practices. The study was conducted purposively in Attappadi block of Mannarkkad taluk in Palakkad district of Kerala. A total of 120 tribal farmers were randomly selected from the three panchayats of Attappadi block viz., Agali, Pudur and Sholayoor. Quantitative and qualitative data were collected through interview schedule, focus group discussion, observation and secondary sources. A list of constraints consisting of four major domains viz., socio- psychological, technical, ecological and livestock management related constraints was prepared. The domain socio – psychological constraints were further divided in to two sub domains viz., socio – economic and psychological constraints. Livestock management related constraints were further divided in to five sub domains viz., managerial, constraints pertaining to veterinary aid, feeding, breeding and marketing constraints. The respondents were requested to express their consent to each of listed constraint based on their perceived degree of seriousness. On the basis of ranks assigned by the respondents Rank Based Quotient was calculated for to each constraint. Technical constraints were considered as the most serious major domain constraint with a mean RBQ value of 66.67. Problems related to livestock activities in forest buffer zone, high cost of treatment for diseased animal, high cost of inputs, non availability of green fodder throughout the year and lack of knowledge and skill in scientific animal husbandry practises were the major sub domain constraints reported by the respondents with RBQ values 93.92, 86.88, 72.50, 69.50 and 68.33 respectively.*

**Key words:** Tribal Livestock Farmers, Constraints, Rank Based Quotient (RBQ), Attappadi

## *Introduction*

Livestock keeping is the major occupational source for livelihood, and an essential part of the cultural heritage of the tribes of Attapadi. In recognition of the importance and potential, the livestock development was viewed as a key strategy for overall development of the tribal economy (Mazumder *et al.*, 2014). In line to this, Yadav *et al.*, (2014) has opined that the expanding demand for animal food products generates significant opportunities for the poor to escape poverty through diversifying and intensifying livestock production Livestock keeping generates a continuous stream of income and employment, makes it an inevitable component of tribal development. The increasing contribution of livestock is very well recognized whenever crop farming faced challenges. Thus livestock farming acts as the catalyst that transforms subsistence farming into income generating enterprises, allowing poor households to join the market economy. In Indian scenario, a large proportion of the tribes depend on agriculture, livestock and forest for their survival. In these days, more and more tribal individuals are deserting livestock husbandry owing to many hurdles including location specific and species specific constraints in livestock management practices. Hence, the present study was undertaken to identify the constraints in livestock farming of tribal farmers and to suggest suitable sustainable strategies to overcome the hurdles faced by tribal livestock farmers.

## *Methodology*

The present study was conducted purposively in Attappadi block of Palakkad district in Kerala as this is one among the largest tribal settlements with considerable livestock population. Attappadi block is comprised of three panchayats *viz.*, Agali, Pudur and Sholayoor. A total of 40 tribal livestock farmers from each of the three panchayats, thus a total of 120 tribal livestock farmers were selected randomly as the respondents for the study. Descriptive research design was adopted in the study. The data collection tool was developed keeping in view of the objectives and variables of study. Personal interviews and Participatory Rural Appraisal (PRA) approach were used to serve the purpose of data collection. Qualitative data were collected through observation, interactive discussions with key informants. Departmental documents, records, reports, books, newspaper reports and other

available literature were also consulted to collect secondary data on different parameters. The collected data were compiled, tabulated and analyzed using rank based quotient (RBQ) technique.

*RBQ-Rank Based Quotient:* Rank Based Quotient (RBQ) is a scientific method of finding out the relative importance of various constraints by an arbitrary scoring method.

For calculating RBQ value the following steps were followed

1. A list of constraints was prepared after consultation with subject matter experts, relevant literature, and in discussion with respondents.
2. Once the constraints were identified, respondents were asked to rank a constraint based on the perceived seriousness when compared to other constraints.
3. Rank Based Quotient (RBQ) was calculated on the basis of rank assigned by each respondent to each constraint.
4. The constraint having highest RBQ value was considered as the most serious constraint to the respondents. On the basis of ranks assigned by the respondents, Rank Based Quotient (RBQ) was calculated as follows,

$$RBQ = \frac{\sum_{i=1}^{n} fi(n + 1 - i) * 100}{Nn}$$

Where,

fi = the frequency of respondents for the i th rank of the problem

N = the total number of respondents

n = the number of ranks

## *Results and Discussion*

As Table 1 indicates, among the four major domains of constraints studied, technical constraints were the most serious constraints (Mean RBQ value = 66.67) for the Attappadi tribal farmers, which might be due to the lack of farmer oriented programmes on scientific animal husbandry practices in the study area. This was followed by ecological ((Mean RBQ value = 62.25), constraints related to livestock management ((Mean RBQ value = 59.95) and socio – psychological constraints ((Mean RBQ value = 57.13).

***Table 1: Constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Major domains of constraints* | *Mean RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Socio- Psychological | 57.13 | 4 |
| 2. | Technical | 66.67 | 1 |
| 3. | Ecological | 62.25 | 2 |
| 4. | Livestock management related constraints | 59.95 | 3 |

## Technical constraints

***Table 2: Technical constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Technical constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Lack of exposure to scientific practices. | 64.17 | 3 |
| 2. | Poor skills in using modern information technology gadgets | 67.50 | 2 |
| 3. | Lack of knowledge and skill in scientific animal husbandry practices. | 68.33 | 1 |

From the Table 2 it could be understood that more than a half of the respondents (68.33 %) revealed that lack of knowledge and skills in scientific animal husbandry practises as the most priority constraint. The similar results were given by Patel *et al.,* (2016). This might be due to lack of appropriate and relevant hands on training programmes regarding scientific animal husbandry practises for the tribal farmers. Poor skills in using modern information technology gadgets was the second serious constraint of 67.50 per cent of the respondents followed by lack of exposure to scientific practises (64.17 % ).

## Ecological constraints

The most important issue to be addressed with related to ecological condition of the area was the prevailing climatic extremes as revealed by 68.00 per cent of the respondents (Table 3). This could be due to the seasonal variations *viz.,* very hard summer and extreme winters in Attappadi region. Uneven monsoons including delayed onset and reduced rainfall than the expected level was the second serious constraint perceived by 67.00 per cent of the respondents which has led to severe water shortage for farming. Shrinkage of grazing area was the

***Table 3: Ecological constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Ecological constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Climatic extremes. | 68.00 | 1 |
| 2. | Uneven monsoons | 67.00 | 2 |
| 3. | Shrinkage of grazing area | 59.00 | 3 |
| 4. | Wild animal attack | 55.00 | 4 |

next serious constraint as reported by 59.00 per cent of the respondents. Since the tribal community had innate ability to understand and feel the forest, they could sense the changes there, and so wild animal attack was considered as a least important constraint as per 55.00 per cent of the respondents.

**Livestock management related constraints**

Constraints pertaining to livestock management included

**1. Managerial constraints**

***Table 4: Managerial constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Socioeconomic constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Poor production status of livestock | 55.33 | 2 |
| 2. | Lack of family labour. | 52.33 | 3 |
| 3. | Reluctance of younger generation to follow livestock farming | 48.92 | 5 |
| 4. | Incidence of rampant theft cases | 49.83 | 4 |
| 5. | Problems related to livestock activities in forest buffer zone | 93.92 | 1 |

Among the managerial constraints, Table 4 shows that the problems related to livestock activities in forest buffer zone were the primary constraint as reported by 93.92 per cent of the respondents. This might be due to the regulations of the authorities in imposing strict measures for allowing the animals to graze in the forest area. Similar findings were reported by Meganathan *et al.*, (2010) and Yadav *et al.*, (2014). Poor production status of livestock was the second serious constraint as reported by 55.33 per cent of the respondents, followed by lack of

family labour (52.33 %). Incidence of rampant theft cases (49.83 %) and reluctance of younger generation to follow livestock farming (48.92 %) were the least felt constraints in the study area.

## 2. Constraints pertaining to veterinary aid

***Table 5: Constraints pertaining to veterinary aid faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Constraints pertaining to veterinary aid* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Lack of easy access to veterinarians | 47.50 | 6 |
| 2. | High incidence of diseases among livestock | 63.55 | 2 |
| 3. | High cost of animal disease treatment | 86.88 | 1 |
| 4. | Lack of door step veterinary service | 52.78 | 3 |
| 5. | Frequent outbreak of diseases | 48.61 | 5 |
| 6. | Non availability of proper veterinary care | 50.00 | 4 |

High cost of animal disease treatment was the top most serious constraint as mentioned by 86.88 per cent of the respondents, followed by high incidence of diseases among livestock (63.55 %) that might be due to the lacunae of factors like nutrition, housing, management and climatic stress (Table 5.). About one – half of the respondents (52.78 %) has stated that lack of door step veterinary service as the third serious constraint, followed by non availability of proper veterinary care (50.00 %). The least important was the frequent outbreak of diseases in the study area (48.61 %) and lack of easy access to veterinarians (47.50 %).

## 3. Feeding constraints

***Table 6: Constraints in feeding faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Constraints in feeding* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Non availability of green fodder throughout the year | 69.50 | 1 |
| 2. | High cost of concentrate and dry fodder. | 68.67 | 2 |
| 3. | Lack of pasture land for grazing | 64.58 | 3 |
| 4. | Unavailability of water sources | 62.67 | 4 |
| 5. | Lack of proper storage facilities for feed and fodder | 34.58 | 5 |

As the Table 6 reveals the most serious constraint in feeding was the non availability of green fodder throughout the year which was encountered by 69.50 per cent of the respondents. These findings are in concordance with the reports of Tailor *et al.,* (2012). This was followed by high cost of concentrate and dry fodder by 68.67 per cent of the respondents. Lack of pasture land was the next important constraint reported by 64.58 per cent followed by unavailability of water sources (62.67 %) and lack of proper storage facilities for feed and fodder (34.58 %) was the least serious constraints.

## 4. Breeding constraints

***Table 7: Breeding constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Breeding constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Non availability of improved sire/breeding bull in village | 61.83 | 2 |
| 2. | High cost for natural service | 59.33 | 3 |
| 3. | Unavailability of timely Artificial Insemination at doorstep | 61.92 | 1 |
| 4. | Distant location of Artificial Insemination facilities | 59.25 | 4 |
| 5. | Incidence of reproductive disorders | 57.67 | 5 |

As it is evident from Table 7 the unavailability of timely Artificial Insemination at doorstep was the most serious constraint reported by 61.92 per cent of the respondents. This might be due to poor transportation facilities to the remote villages, hence at many times the service providers are not showing interest to attend the needs. The next serious constraint as mentioned by 61.83 per cent of the respondents was non availability of improved sire / breeding bull in village, followed by high cost for natural service (59.33 %). The least concerned constraints were distant location of A.I. facilities (59.25 %) and incidence of reproductive disorders (57.67 %).

## 5. Marketing constraints

As Table 8 indicates that the most serious marketing constraint was the lack of technical knowledge in preparing value added products as expressed by 66.00 per cent of the respondents. Poor transportation was the next serious constraint (63.00 %) that hindered the tribal farmers to perform marketing activities outside their locality. These results are in line with the findings of Yadav *et al.,* (2014). Lack of organized livestock

***Table 8: Marketing constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Marketing constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Lack of organized livestock markets in settlement areas. | 61.00 | 3 |
| 2. | Poor transportation facilities | 63.00 | 2 |
| 3. | Middle man exploitation | 59.00 | 4 |
| 4. | Lack of technical knowledge in preparing value added products | 66.00 | 1 |

markets in settlement areas was the next constraint as encountered by 61.00 per cent of the respondents. Middle man exploitation was the least serious constraint (59.00 %) which might be due to the practice of marketing livestock assets / products by the tribal farmers without much outsider's interference.

**Socio-psychological constraints**

Socio-psychological constraints included the following:

1. *Socio-economic constraints*
2. *Psychological constraints*

**1. Socio-economic constraints**

***Table 9: Socioeconomic constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Socioeconomic constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Low literacy level | 29.33 | 9 |
| 2. | Small size land holding | 28.42 | 10 |
| 3. | Non availability of credit facility. | 39.58 | 8 |
| 4. | Lack of rapport with extension agent | 60.63 | 6 |
| 5. | Social pressure | 47.04 | 7 |
| 6. | Lack of awareness about welfare schemes | 69.50 | 3 |
| 7. | Lack of subsidies/free schemes for all AH production programmes by the developmental agencies | 70.38 | 2 |
| 8. | High interest rate of credits. | 68.00 | 4 |
| 9. | High cost of inputs. | 72.50 | 1 |
| 10. | High labour cost | 63.38 | 5 |

It is discernible from the Table 9. that among the socio economic constraints, high cost of inputs was ranked as the top most serious constraint by 72.50 per cent of the tribal farmers. This might be due to the inflation in cost of all inputs including feed, utensils, transportation and services. The next serious constraint expressed by 70.38 per cent of the farmers was lack of subsidies / free schemes for all animal husbandry production programmes by the developmental agencies. This might be due to the fact that even though the schemes for the tribal farmers which demands minimum investment from their part are implemented by developmental agencies, the tribal livestock farmers they needed it at 100 per cent subsidy.

Majority of the farmers (69.50 %) stated that they were unaware about welfare schemes which were recorded as the third important constraint. Under these circumstances, farmers were forced to avail credit from sources with high interest rate which was ranked as the next serious constraint by 68.00 per cent of farmers. It was very tough for the farmers to arrange alternate labour for livestock activities when they have to go for other daily jobs due to high labour cost. This was marked as the fifth serious constraint among the selected ones by 63.38 per cent of the farmers. The better involvement of extension agencies in livestock related matters were suggested by 60.63 per cent which was the succeeding constraint. Social pressure was the next constraint faced by the 47.04 per cent of the respondents. This was followed by non availability of credit facility (39.58 %), low literacy level (29.33 %) and small size land holding (28.42 %) as the least important constraints. This might be due the fact that educational empowerment has started revolutionizing the tribal farmers and they were ready to do farming in any available small land pieces. These findings are in line with the reports of Patr *et al.*, (2014).

## 2. Psychological constraints

***Table 10: Psychological constraints faced by the tribal livestock farmers in the selected study area – Rank Based Quotient (RBQ) method***

***N=120***

| *Sl.no.* | *Psychological constraints* | *RBQ value* | *Rank* |
|---|---|---|---|
| 1. | Unfavourable attitude towards scientific practices | 62.00 | 2 |
| 2. | Less risk bearing capacity of the farmers | 61.00 | 3 |
| 3. | Lack of motivation and interest | 60.00 | 4 |
| 4. | Lack of information seeking behaviour | 68.00 | 1 |

As Table 10 explains that lack of information seeking behaviour was the top most psychological constraint faced by 68.00 per cent of the respondents. This might be due to the behaviour of respondents in gathering information from the closed network of the same hamlet that included relatives and friends. Unfavorable attitude towards scientific practises was the next serious constraint of 62.00 per cent of respondents which might be due to their traditional beliefs and practises. The succeeding constraints were less risk bearing capacity of farmers (61.00 %) followed by lack of motivation and interest as the least important constraint (60.00 %) since the act of livestock farming was imprinted in their blood for generations.

## *Conclusion*

As the study explains it can be concluded that the major constraints faced by tribal livestock owners were the problems related to livestock activities in forest buffer zone, high cost of treatment for diseased animal, high cost of inputs, non availability of green fodder throughout the year and lack of knowledge and skill in scientific animal husbandry practices in the study area. Suitable policy implications from the higher authorities in favour of tribal livestock farmers, provision for sufficient veterinary care in remote tribal hamlets, initiating animal husbandry programmes specially for the tribal community with sufficient financial support, programmes and facilities to encourage fodder development and training programmes for tribal farmers on scientific livestock farming would be helpful to overcome these bottlenecks in tribal livestock farming system.

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