

Criteria for Assessing AI Service Delivery of Para-Veterinary System: Evidence from the Functioning of Gopalamitras in Andhra Pradesh

SunithaP.¹, Sangameswaran R.2, K. Natchimuthu3, S.V.N. Rao⁴

¹ Dept. of Veterinary & Animal Husbandry Extension Education, NTR CVSc, Andhra Pradesh.

² Veterinary Dispensary, Sivaganga division, Tamil Nadu

^{3,4} Dept. of Veterinary & Animal Husbandry Extension Education, RIVER, Puducherry.

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Abstract

Livestock sector plays an important role in socio-economic development of rural households in India. Efficient and effective delivery of livestock services is vital for the improvement of livestock production. This led the need to establish a well-balanced livestock service delivery system through a combination of public and private actors and the efforts to equip them to deliver effective services to the farmers. The para-veterinarians can play an important role in the privatization process of livestock service delivery system in developing countries. With this an exploratory research study was conducted in East Godavari district of Andhra Pradesh to study the delivery of livestock services delivered by the Animal Health Worker, Gopalamitra who provides AI, PD and first aid services at the doorstep of the livestock owners on payment under the centrally sponsored scheme of National Project on Cattle and Buffalo Breeding (NPCBB). 100 Gopalamitras have been selected for the study with 50 good and 50 poor performers categorized based on the number of AIs done. The study revealed that Gopalamitras cover one-third (38%) of AIs in the district with each Gopalamitra covering livestock population on an average 1098 within 1-2villages by travelling about 28kms in a day. Gopalamitras were involved in unauthorized services attending 165 cases in a month with an average annual income of Rs. 95,421 which accounted for more than 75% of their total family income. This shows the need for suitable mechanism to be developed to see that the Gopalamitras get good income to sustain their livelihoods but at the same time preventing them to attend to unauthorized services which may lead to complications. The number of AIs done and number of calves born are the good indicators to assess the success of the Gopalamitras.

Keywords: Livestock, para-veterinarians, Gopalamitras, Cattle and Buffalo Breeding

Introduction

Livestock rearing forms an important livelihood activity and act as as cushion for agriculture farming during drought by providing nutritional security and sustainable income (Naidoo, 2001). Improvement in livestock production is, therefore, an important pathway for increasing the income of marginal and small farmers and landless labourers (Venkatasubramanian and Rao, 2011).

The growth in livestock production is more pro-poor than a similar growth in crop production as livestock

wealth is more equitably distributed than land (Venkataramaiah and Ahuja, 2008).

Delivery of livestock services

The delivery of services in animal health and production is considered as a main factor for successful livestock development (Kleeman, 1999). One of the serious constraints expressed by the livestock farmers was poor availability and accessibility of livestock services to them (Bardhan *et al.*, 2008). This poor delivery of livestock services was

Table 1: Average number of AIs done and calves born per year (2011-12)

Sl.No	Characteristic	Mean	Range
1	AI done / year	841	182 – 2108
2	Calves born / year	383	100 - 1300

attributed to inadequate man power in the State departments of Animal Husbandry, major stakeholders in providing livestock services to the livestock farmers.

Emergence of para-veterinary system

The need to establish a well-balanced livestock service delivery system through a combination of public and private actors and the efforts to equip them to deliver effective services to the farmers also deserve an enhanced attention (Rao *et al.*, 2008).

There is a need for strengthening the para-veterinary system and integrating the para-veterinarians into the department by creating stronger links with the veterinarians which enables a further reach by the Veterinary Assistant Surgeons (VAS) as well as enhances the quality of services provided by the para-veterinarians through strong technical support from

Table 2: Job related variables of Gopalmitras

S.No.	Variables	Mean	range	Intervals	Frequency
1	Number of villages covered	2.6	1 – 6	1 – 2	49
				3 – 4	46
				> 4	5
2	Livestock population covered	1098.21	300 – 5,500	Upto 1000	61
				1001 – 1500	30
				>1500	9
3	Distance travelled in a day to provide livestock services	27.99*	2 - 100	upto 10 km	23
				10.1 – 47 km	56
				> 47 km	21
4	Location of Residence	-	-	Same village	55
				Different village	45
5	Frequency of contact with the supervisors	3.33	1 – 10	<3 times	27
				3 – 5times	65
				>5 times	08
6	Average number of AIs done / month	67	30 – 175	upto 40	20
				41 – 95	66
				>95	14
7	Average number of cases attended per month	164.91*	66 – 750	Low (Upto 100)	14
				Medium (101 – 200)	63
				High (>200)	23
8	Annual family income	1,28,326.3*	42,000 – 3,29,160	Low (\leq 72,000)	14
				Medium (72,001 – 1,84,000)	73
				High (> 1,84,000)	13
9	Annual income of Gopalmitras through livestock services	95,421	42,000 – 2, 11,000	Low (Upto Rs.64,000)	11
				Medium (Rs.64,001 – Rs.1,28,000)	74
				High (> Rs.1,28,000)	15
10	Percentage contribution to total annual family income through Gopalmitra	80%	-	25% – 50%	7
				51% – 75%	39
				76% – 100%	54

Table 3: Average monthly income earned through authorized services by Gopalamitras

S.No.	Cases	Mean (Rs.)	Range
1	AI*	2010.90	900 – 5250
2	PD	857.40	150 – 3000
3	Wound dressing	996.40	500 – 2000
4	Calves born	798	208 – 2708
5	Animal insurance	53	12 – 168
6	Maintenance allowance	2000	-
	Total	6715.01	1770 – 13126

*Excluding semen straw cost

the VAS (Punjabi *et al.*, 2005). One of the responses that sought to remedy this situation led to the emergence of para-veterinary system particularly, Gopalamitra in Andhra Pradesh to make the livestock services available at the door step of these livestock farmers.

Under National Government has implemented National Project for Cattle & Buffalo Breeding (NPCBB) Project, the Andhra Pradesh Livestock development Agency (APLDA) has been established for restructuring breeding operations in bovines in the country and started functioning from April 2000. APLDA at state level, with 22 DLDAs at district level, is functioning to carry out the cattle and buffalo breeding activities in the state

Gopalamitras were appointed by the APLDA/ DLDAs to deliver livestock services especially in remote areas where the veterinary (dispensary / rural livestock units / key village unit) institutions are not located in the vicinity of 3 km. The operational area of Gopalamitra covers approximately one thousand female breedable bovine population. There were about 4,176 Gopalamitras working in A.P. as extended organ of SDAH to provide the breeding and first aid services. The number of Gopalamitras operating currently in all the three divisions of EG District was 251.

Materials & Methods

East Godavari district was selected for study due to the presence of highest number of households possessing livestock; the livestock contribution to Gross District Domestic Product is high and is one of

the districts where Gopalamitras are widely spread to deliver livestock services. Based on their performance with reference to AI achievement for the last two years i.e., 2010–2011 and 2011– 2012, a total of 100 Gopalamitras were selected proportionately from all the three divisions by taking both better achievers (50) and poor achievers (50) equally from the lists. The total sample consisted of 44, 22 and 34 Gopalamitras from Kakinada, Rajahmundry and Amalapuram divisions, respectively.

Functioning of Gopalamitras

Services provided by Gopalamitras in the delivery of livestock services

Following services are being rendered by Gopalamitra to the livestock farmers:

1. Door step AI services
2. First aid such as wound dressing
3. preventive services such as deworming and vaccination against contagious/infectious diseases
4. Facilitating for insuring of animals
5. Animal health camps – every year two infertility camps to be organised with the help of Personnels of DAH

Table 4: Service charges paid by livestock farmers to Gopalamitras

S. No.	Cases	Frequency	Av. amount paid by LS farmers (Rs.)
Authorised services			
1	AI	86	71.45
2	PD	51	50.78
3	Wound dressing	9	200
4	Deworming	20	5.00
5	Vaccination	56	8.85
Unauthorized services			
6	Fever	NA	198
7	Mastitis	NA	225
8	Diarrhoea	NA	100
9	Dystocia	NA	140
10	ROP	NA	200

Approved service charges charged for AI

Gopalamitras are partly self-employed and provide services on payment basis. They are authorized to collect an amount of Rs. 70 for AI service from the livestock farmers, of which Rs. 40 to be remitted to the DLDA towards semen straw cost and the balance of Rs. 30 goes to Gopalamitra as the service charge. Service charges for other services are not fixed and it is upto Gopalamitra and the livestock farmer who avails the services.

Modus operandi of Gopalamitra

Gopalamitras are self-employed but selected, monitored and supported by quasi government organization – APLDA. Gopalamitras generally operate in remote areas where there is no veterinary institution within 3km radius to provide the livestock services to the livestock farmers.

Gopalamitras start their day with scheduling of farmers calls or with the regular route they make to their respective village point and move on to the next call or to the next village point and deliver the livestock services. In the evening, Gopalamitra visit the villages on their own interest or again on call of the livestock farmer. On an average a Gopalamitra visits a village twice a day.

Average number of AIs done & calves born per year

The average number of AIs done by Gopalamitras in a year was about 841 and the mean number of calves born in a year was 383. The number of calves born due to AIs done by Gopalamitras ranged from 100 to 1300 in a year (Table 1).

Sources of income

The various sources of income for Gopalamitras are:

- Maintenance allowance of Rs. 2000 per month.
- AI service charge Rs. 30/- per AI (out of Rs. 70/-).
- Calf born incentives @ Rs. 50/- per each female calf at the end of the year.
- Promoter charges for animal insurance @ Rs. 15 – 20 per animal.
- Treatment of cases.

Table 5: Criteria for the success of Gopalamitras

Sl. No.	Attributes	Calculated value (chi-square)
With total no. of cases		
4	No. of AIs done	6.84**
5	No. of calves born	8.54**
With no. of AIs done		
6	No. of calves born	73.44**
With Gopalamitra income		
7	Total family income	10.8**
8	Total no. of cases	6.03*
9	No. of AIs done	45.31**
10	No. of calves born	36.82**
11	Livestock population	2.05

*significant at 5% level **significant at 1% level

Average monthly income earned through authorized services and incentives by Gopalamitras

The average monthly income earned through authorized services and incentives by Gopalamitra are given in the table 3.

Through authorized services the Gopalamitras were earning about Rs. 6715 per month and most of it was through the number of AIs done and maintenance allowance paid by the DLDA. There were few Gopalamitras who were earning less than Rs. 2000 per month.

The Gopalamitras cannot thrive only on the fee collected from the authorized services.. the main attraction for many Gopalamitras selecting this job is that they are delivering unauthorized services and also to get the social status as a doctor in the farming community. This could be one of the main reasons for Gopalamitras sticking to their jobs after joining in DLDA. It was noticed that there were only few Gopalamitras who left Gopalamitra job to join in government service.

Service charges paid by livestock farmers to Gopalamitras

Average charge collected by Gopalamitras with the range and frequency for the various services are mentioned below in the table 4.

Authorized services

Gopalamitras are authorized to charge only Rs. 70 for AI but they charged generally more than Rs. 70 per AI. Though the deworming and vaccination services to be provided free of cost, most of the Gopalamitras were found collecting fee for these services.

Unauthorized services

Some of the services provided by Gopalamitras are beyond their capacity and not authorized to practice. But they are interested to earn money through providing them. Unauthorized services provided by Gopalamitras were treatment of metabolic and gynecological cases. As these services are unauthorized accurate details could not be collected. Although, the livestock farmers had no choice but to invite Gopalamitras (highly accessible compared to VAS) to attend cases which are beyond their scope, there were instances where they did more harm to the animals than good. This due to severe shortage of VASs in the area, most of the livestock farmers were rather forced to depend upon Gopalamitras for treatment of cases.

Criteria for the success of Gopalamitras

It was attempted to find out the characteristic which differentiate more successful Gopalamitras from the less successful ones. The association between personal characteristics and success of Gopalamitras in terms of number of cases attended and income earned was established through chi-square test.

Gopalamitra income is taken into consideration as a success indicator as it presumed to be dependent upon the number of AIs done and number of calves born (Table 5). The chi-square analysis revealed that number of AIs done and number of calves born are positively and significantly related to Gopalamitra income. Similarly, the total number of cases which include both AIs and calves born is also positively and significantly associated with Gopalamitras income. It is also a good sign to notice positive association between number of AIs done and calves born.

Table: 8 Criteria for the success of Gopalamitras

On the basis of this analysis it could be inferred that number of AIs done and calves born will serve as good criteria to assess the success of Gopalamitras.

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