



Contribution of para-veterinary professionals in rendering livestock health services in Uttar Pradesh

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The productive potential of animals depends crucially on the prevalent animal health delivery system, besides other areas where unfortunately India has a poor record (Ahuja *et al.* 2008). The privatization of veterinary services in this regard has provided mixed results (Sikhakolanu 2007), with only a few states in India having undertaken the exercise to define the exact role of para-veterinary professionals in delivering these livestock services (Venkatramaiah and Ahuja 2008). The para-veterinary professional is a broad group and comprises any type of animal health worker without a university veterinary degree, who may have received training, varying from few weeks to few years duration (Catley *et al.* 2004). In view of above background, it was felt important to undertake a study to know the exact type and pattern of livestock services delivered by para-veterinary professionals, as there is absence of enough empirical data in this regard.

The present study carried out in Uttar Pradesh followed an ex-post facto and exploratory research designs. Five divisions were purposively selected out of 18, located in different directions among the 4 main regions of the state. From each of these selected divisions, one district namely, Bareilly in north of Paschim Pradesh, Chitrakoot in south from Bundelkhand, Basti in east from Purvanchal, Mathura in west from Paschim Pradesh and Faizabad in centre from Awadh Pradesh region of the state were randomly selected. Thirty para-veterinary professionals were selected randomly from each of these selected districts making 150 para-veterinary professionals who were personally interviewed through specifically developed questionnaire and the data were then coded, tabulated and analysed using suitable statistical tools.

Type and frequency of services provided by para-veterinary professionals: The productive services consisting

of artificial insemination (AI), pregnancy diagnosis (PD) and feed and feed additive distribution achieved highest average score (2.36), indicating the maximum delivery of such services as revealed by 55.33 % paraprofessionals that always deliver such services (Table 1). On the other hand, diagnostic services consisting of laboratory diagnosis, post mortem and radiography were provided by least number of paraprofessionals (10.67%). The findings indicated that barring few, most of the services provided by these para-veterinary professionals were as per their mandate including the productive and preventive services, where they have achieved much higher scores. Amongst the individual services, artificial insemination (AI) was provided by maximum number of paraprofessionals with highest individual service delivery score while none of them were issuing post mortem certificates having the lowest possible said score, as justified by their working mandate.

Results (Table 1) further revealed that large numbers of respondent were providing services of medicinal treatment to the animals' in spite of the fact that the same does not come under the purview of these para-veterinary professionals. The reasons given for such service delivery included the absence/non availability of public veterinary service delivery system especially in far flung areas, delay by established livestock service delivery system particularly in emergency and minor cases, doorstep availability of services, handling of common and easy cases and non availability of resources at public veterinary centre. The study found no clear cut jurisdiction of working of a para-veterinary professional as far as their service delivery as well as area of coverage was concerned. Further, it appeared that para-veterinary professionals had not been guided enough with regard to their exact role and mandate of service delivery as they could not appreciate the same. The services of these para-veterinary professionals if utilized in a more controlled coordinated and monitored way may help better in many ways especially considering their area of coverage for the services being delivered.

Timeliness or promptness in delivery of livestock services by para-veterinary professionals: The paraprofessionals showed better mobility (Table 2) in delivering the curative

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Table 1. Type and frequency of livestock services delivered by para-veterinary professionals (150)

S. No.	Type of services	Always (3)	Sometimes (2)	Never (1)	Average score
1.	Curative services				
i.	Medicinal treatment	86 (57.33)	48 (32.00)	16 (10.67)	2.47
ii.	Minor surgical treatment	58 (38.67)	63 (42.00)	29 (19.33)	2.19
iii.	Major surgical treatment	09 (6.00)	21 (14.00)	120 (80.00)	1.26
iv.	Gynaecological and obstetrical treatment	67 (44.67)	56 (37.33)	27 (18.00)	2.27
	<i>Average percentage of respondents (for curative services)</i>	36.67	31.33	32.00	2.05
2.	Productive services				
i.	Artificial insemination	102 (68.00)	36 (24.00)	12 (8.00)	2.60
ii.	Pregnancy diagnosis	98 (65.33)	42 (28.00)	10 (6.67)	2.59
iii.	Feed and feed additive distribution	49 (32.67)	38 (25.33)	63 (42.00)	1.91
	<i>Average percentage of respondents (for productive services)</i>	55.33	25.78	18.89	2.36
3.	Preventive services				
i.	Deworming	87 (58.00)	44 (29.33)	19 (12.67)	2.45
ii.	Vaccination	122 (81.33)	22 (14.67)	6 (4.00)	2.77
iii.	Quarantine measures	26 (17.33)	36 (24.00)	88 (58.67)	1.59
	<i>Average percentage of respondents (for preventive services)</i>	52.22	22.67	25.11	2.27
4.	Diagnostic services				
i.	Laboratory diagnosis	9 (6.00)	32 (21.33)	109 (72.67)	1.33
ii.	Post mortem	0 (0.00)	5 (3.33)	145 (96.67)	1.03
iii.	Radiography	0 (0.00)	2 (1.33)	148 (98.67)	1.01
	<i>Average percentage of respondents (for diagnostic services)</i>	2.00	8.67	89.33	1.13
5.	Miscellaneous services				
i.	Livestock advisory service	34 (22.67)	63 (42.00)	53 (35.33)	1.87
ii.	Distribution of fodder seedling	21 (14.00)	58 (38.67)	71 (47.33)	1.67
iii.	Supply of publications	17 (11.33)	43 (28.67)	90 (60.00)	1.51
iv.	Issuance of health certificates	0 (0.00)	2 (1.33)	148 (98.67)	1.01
v.	Issuance of PM certificates	0 (0.00)	0 (0.00)	150 (100.00)	1.00
vi.	Marketing information	29 (19.33)	38 (25.33)	83 (55.33)	1.64
vii.	Livestock and other census	12 (8.00)	49 (32.67)	89 (59.33)	1.49
	<i>Average percentage of respondents (for miscellaneous services)</i>	10.76	24.1	65.14	1.46
	<i>Average percentage of respondents (for all of the services)</i>	31.4	22.51	46.10	1.85

Figures in parenthesis indicate percentage.

and productive services with more promptness as compared to other services. One of the reasons for such results could be the presence of these paraprofessionals nearest to the clients with their ability to provide services at the doorstep. However, the paraprofessionals being ill equipped for diagnostic and miscellaneous services both in terms of skill and facilities along with their limited mandate, provided such services in a much delayed fashion.

The timeliness holds high value in livestock service delivery system especially in medicinal and obstetrical emergencies along with some productive services like artificial insemination that need to be attended at appropriate time. It is this key feature of timeliness that gives an advantage to the system of livestock service delivery by paraprofessionals under the existing situation as public service delivery system seemed unable to reach and fulfill

the needs of all of its clients especially with its limitation of lesser manpower for a wider area of coverage.

Average fee charged by para-veterinary professionals: The fee charged for service delivered by a para-veterinary professional depends on type of case, condition or severity, form and nature of emergency all of which decide the amount being charged by a paraprofessional. Despite all these lacunae, the results show that the service of major surgical treatment (though rarely performed by paraprofessionals) is the one that is highest charged (avg. fee ₹ 437.0) whereas vaccination of livestock was observed as least charged service (avg. fee ₹ 4.94) being delivered by paraprofessionals (Table 3). The above results are in line with the requirements of these services both in terms of technical expertise as well as inputs required to deliver them effectively. It was further observed that the service of

Table 2. Timeliness or promptness of para-veterinary professionals in providing the livestock services (N=150)

Type of service	Timeliness of the services			Average score
	Prompt (Upto 4 h) (3)	Intermediate (4-8 h) (2)	Delayed (>8 h) (1)	
Curative	109 (72.67)	31 (20.67)	10 (6.67)	2.66
Productive	101 (67.33)	43 (28.67)	6 (4.00)	2.63
Preventive	82 (54.67)	49 (32.67)	19 (12.67)	2.42
Diagnostic	53 (35.33)	35 (23.33)	62 (41.33)	1.94
Miscellaneous	40 (26.67)	56 (37.33)	54 (36.00)	1.91
<i>Average percentage of respondents (for all of the services)</i>	51.33	28.53	20.13	2.31

Figures in parenthesis indicate percentage.

gynaecological and obstetrical treatment had a maximum variability in its fee charge by the paraprofessional working in various districts. This could be explained on the basis of existence of a parallel variation seen in cases related to this sector. Besides, there were certain services that were either not provided at all or for a free of cost and hence could not be taken into account. The results insisted that there is quite a needful to be done by public service agencies to fix the rates of various services being delivered by para-veterinary professionals for a more transparent system with high faith among livestock owners for the services delivered.

Physical accessibility of para-veterinary professionals for delivering various livestock services: The results (Table 4) showed that the para-veterinary professionals have a high degree of physical access in terms of the distance covered (average 16.17 km) by them to deliver services which appears to be one of their basic strengths. The results indicate that the para-veterinary professionals were attending a fairly good no. of villages for delivery of their services under the varying prevailing conditions. Further, the overall average livestock population present in a working area of a paraprofessional (11,124.67 heads) is quite high in terms of coverage for delivering these services. These results are thought provoking with regard to both quality and quantity of services being delivered which need a much deliberation in future studies. Similarly, the overall average no. of cases handled by a paraprofessional per day (5.53) is a quite high when viewed on monthly or annual basis considering the adequacy of facilities available to these paraprofessionals.

As far as type of species dealt by the para-veterinary professional was concerned the bovines seemed to be the main working species being served as 100 % by para-

Table 3. Average fee (₹) charged by para-veterinary professionals for delivering the livestock services (N=150)

S. No.	Type of services provided	Average amount charged	S.D
1.	Curative services		
i.	Medicinal treatment	167.79	75.39
ii.	Minor surgical treatment	51.93	8.54
iii.	Major surgical treatment	437.00	125.88
iv.	Gynaecological and obstetrical treatment	392.61	285.6
	<i>Average amount charged (for curative services)</i>	262.33	118.46
2.	Productive services		
i.	Artificial insemination	105.92	16.11
ii.	Pregnancy diagnosis	48.68	7.42
iii.	Feed and feed additive distribution	81.37	5.66
	<i>Average amount charged (for productive service)</i>	78.66	8.66
3.	Preventive services		
i.	Deworming	66.47	29.06
ii.	Vaccination	4.94	0.61
iii.	Quarantine measures	0.00	0.00
	<i>Average amount charged (for preventive service)</i>	23.8	9.49
4.	Diagnostic services		
i.	Laboratory diagnosis	0.00	0.00
ii.	Post mortem	-	-
iii.	Radiography	-	-
	<i>Average amount charged (for diagnostic service)</i>	-	-
5.	Miscellaneous services		
i.	Livestock advisory service	0.00	0.00
ii.	Distribution of fodder seedling	121 / kg	-
iii.	Supply of publications	-	-
iv.	Issuance of health certificates	-	-
v.	Issuance of PM certificates	-	-
vi.	Marketing information	0.00	0.00
	<i>Average amount charged (for miscellaneous service)</i>	-	-

Figures 0.00 or (-) indicate either free or non available service.

professionals. This is probably in accordance with the pattern of livestock held by farmers of the study area as well as the expertise of the para-veterinary professionals delivering the services.

The study thus concluded that the para-veterinary professionals are mainly involved in delivery of productive and preventive livestock services, promptly with higher physical accessibility. Further the study raises some of the genuine concerns regarding the mandate, work area, fee structure and other related aspects of livestock service

Table 4. Physical accessibility of para-veterinary professionals for delivering various livestock services

Physical accessibility parameters	Para-veterinary professionals (N=150)		
	Frequency	Percentage	Mean±SD
Average distance covered (in km) by para-veterinary professional from its place of residing to deliver the livestock services			
Short (up to 10)	44	29.33	5.50±2.17
Medium (10–20)	60	40.00	14.57±3.52
Long (>30)	46	30.67	28.47±4.24
Overall (Total)	150	100.00	16.17±9.65
Average number of villages covered by para-veterinary professional to deliver livestock services			
Less (1–10)	42	28.00	6.90±2.69
Medium (11–20)	87	58.00	15.34±2.96
Large (>20)	21	14.00	23.33±1.96
Overall (Total)	150	100.00	14.10±5.92
Livestock population present in working area of para-veterinary professional			
Small (up to 10,000)	81	54.00	7333.33 ±2654.01
Medium (10,001 – 20,000)	57	38.00	14117.54 ±4332.85
Large (>20,000)	12	8.00	22500.00 ±1118.03
Overall (Total)	150	100.00	11124.67 ±5709.69
Average no. of cases handled per day by para-veterinary professional			
Less (1 - 4)	53	35.33	2.85±1.08
Medium (5 - 8)	78	52.00	6.17±1.07
Large (>8)	19	12.67	10.42±1.72
Overall (Total)	150	100.00	5.53±2.68
Type of animal species handled by para -veterinary professional for which the services are delivered			
Cattle and buffalo	150	100.00	-
Sheep and goat	83	55.33	-
Dog and cat	36	24.00	-
Others	19	12.67	-

delivery by para-veterinary professional, requiring a deep introspection and analysis by the policy makers for much efficient livestock service delivery system.

SUMMARY

The study was carried out in 5 districts of Uttar Pradesh to analyse the role dynamics of para-veterinary professionals in relation to delivery of livestock health services through the interview of 150 para-veterinary professionals. The major findings of the study revealed that majority of para-veterinary professionals were providing maximum service delivery for artificial insemination and pregnancy diagnosis. Majority of paraprofessionals (51.33%) delivered most of their services timely and promptly up to 4 h on an average from the time of their call by covering an average distance of 16.17 km in about 14 villages having an average livestock population of 7,333.33 with a mean handling of 5.33 cases / day, mainly for cattle and buffalo. Among the various livestock services provided the cases pertaining to curative services were comparatively higher charged in fee than that of preventive services by the paraprofessionals for their services delivered to livestock owners.

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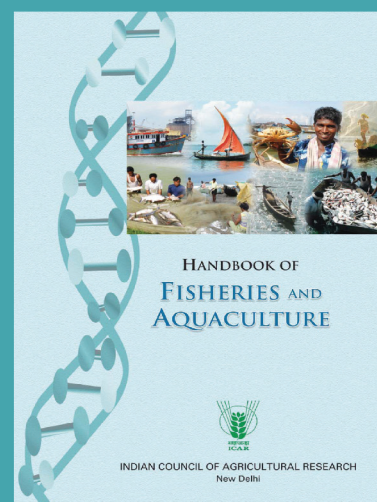
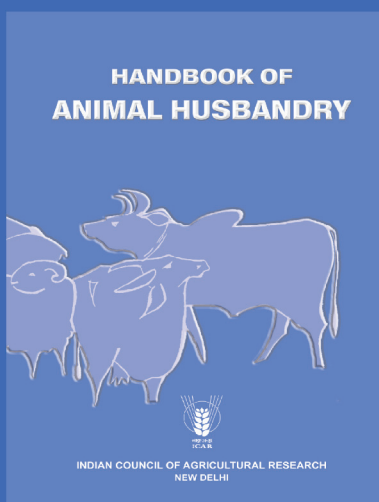
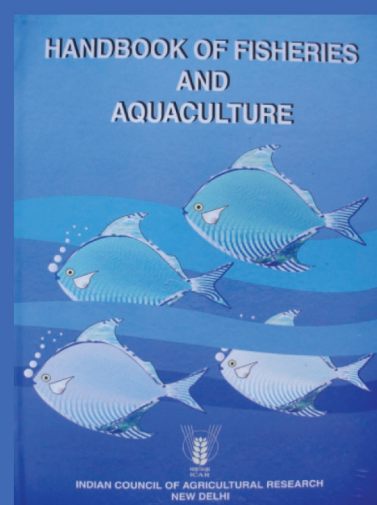
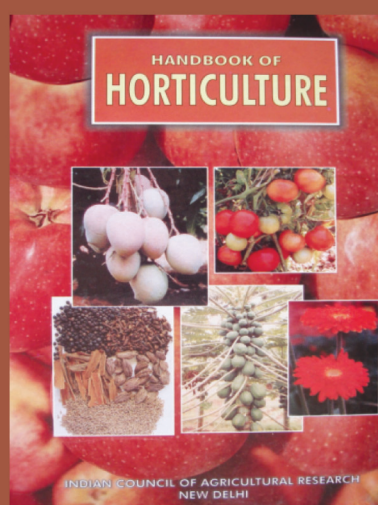
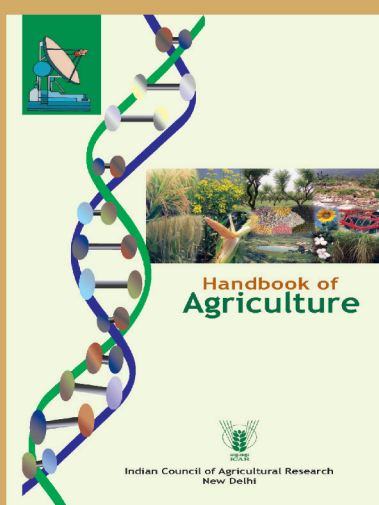
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