ANIMAL HEALTH DELIVERY SERVICES -A STUDY IN KRISHNA DISTRICT

By
K.VIJAY PRAKASH
B.V.Sc & A.H.

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SRI VENKATESWARA VETERINARY UNIVERSITY
TIRUPATHI - 517502

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CERTIFICATE

Mr.K.Vijay Prakash has satisfactorily prosecuted the course of research and the thesis entitled **"ANIMAL HEALTH DELIVERY SERVICES – A STUDY IN KRISHNA DISTRICT"** submitted is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination. I also certify that the thesis or part there of has not been previously submitted by him for a degree of any university.

Date :

Place : **(B.SUDHAKAR RAO)**

Major advisor

CERTIFICATE

This is to certify that the thesis entitled **" ANIMAL HEALTH DELIVERY SERVICES – A STUDY IN KRISHNA DISTRICT OF ANDHRA PRADESH"** submitted in partial fulfillment of the requirement for the degree of **MASTER OF VETERINARY SCIENCE** for **SRI VENKATESWARA VETERINARY UNIVERSITY**, College of Veterinary Science, Rajendranagar, Hyderabad is record of the bonafide research work carried out by **K. VIJAY PRAKASH** under my guidance and supervision.

The subject of the thesis has been approved by the student's Advisory Committee. No part of the thesis has been submitted for any degree or diploma. The published part has been fully acknowledged. All assistance and help received during the course of the investigations have been acknowledged by the author of the thesis.

(B.SUDHAKAR RAO)
Chairman of the Advisory Committee

Thesis approved by the student's Advisory Committee

Chairman : **(Dr.B.SUDHAKAR RAO)**
Professor and University Head
Dept. of Veterinary&A.H Extension
College of Veterinary Science
Rajendranagar, Hyderabad
_____

Member : **(Dr.Sri.CH.SUBASH CHANDRA BOSE)**
Assistant Professor
Dept. of Veterinary&A.H Extension
College of Veterinary Science
Rajendranagar, Hyderabad
_____

Member : **(Dr.B.RAMESH GUPTA)**
AssociateProfessor and Head
Dept. of Animal Genetics& Breeding
College of Veterinary Science
Rajendranagar, Hyderabad
_____

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

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(SIGNATURE)

DECLARATION

I, **K.VIJAY PRAKASH**, hereby declare that the thesis entitled **"ANIMAL HEALTH DELIVERY SERVICES – A STUDY INKRISHNA DISTRICT OF ANDHRA PRADESH"** submitted to **SRI VENKATESWARA VETERINARY UNIVERSITY** for the degree of **MASTER OF VETERINARY SCIENCE**, is a result of the original research work done by me. I also declare that the thesis or part there of has not published elsewhere in any manner.

Date :
Place :

(K. VIJAY PRAKASH)

Name of the author : **K.VIJAY PRAKASH**

Title of the thesis : **ANIMAL HEALTH DELIVERY SERVICES - A STUDY IN KRISHNA DISTRICT**

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Major Advisor : **Dr. B. SUDHAKAR RAO**

University : **SRI VENKATESWARA VETERINARY UNIVERSITY**

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ABSTRACT

Since independence, in India, the veterinary services are funded managed and delivered by public sector. With the introduction of economic reforms in the country since 1992, public sector monopoly came under increasing threat as it started questioning the economic and efficiency of the veterinary services' providers. Inadequate financial resources and stringent measures have brought about the active participation of private and NGOs in this sector and there by limiting the role of the state in livestock extension services. Hence, animal health delivery services are considered as a strategy to improve the effectiveness and quality of veterinary services delivery. In this context, it is appropriate to ascertain the major service providers, what services they provide and the farmers awareness and perception towards the services provided by the various agencies.

The present study entitled "Animal Health Delivery Services- A Study in Krishna District" was employed in two stages i.e. in initial phase an exploratory research design to explore the various agencies providing services from a sample of 15 drawn from the various Government and semi –government agencies . An ex-post facto research was also adopted in the later phase i.e. awareness and perception involving 120 farmers in relation to the services selected through random sampling technique.

Krishna district in AP was purposively selected for the study, as this is one of the districts having highest livestock population and there is heavy demand for effective livestock health services. Data was elicited from 120 respondents drawn from 3 mandals. A

total of six villages were selected from the 3 mandals. From each village, 20 farmers, selected randomly were subjected for investigation through prestructutred interview schedule.

The results emerged from the study are as follows - The socio-economic profile of the respondents in the study area indicated that a majority of them are of middle age group, with low livestock experience , semi skilled in their vocation, had marginal land holdings, majority were from BC category caste community, functionally illiterate , not holding any official position in socio-political organizations, with low material possession , living in brick walled houses, possessed medium family and herd size and had moderate information seeking behaviour.

The findings on the various agencies providing AHDS revealed that government agencies mainly AH department, APLDA, SVVU were the major AH service providers followed by private agencies. To a small extent corporate and NGO are also undertaking AHDS to the farmers.

The key areas which emerged where a completed awareness was expressed by the farmers towards various AHDS provided by different agencies in the study were vaccination, deworming and deticking , disease diagnosis and treatment on medical and gynecological, surgical services supply of medicines and drugs, first-aid and attending disease out breaks where as disease surveillance and Animal Health Camps services to lesser extent of awareness among the farmers were observed.

The awareness on the extension services such as advisory services, training programmes, follow up services, minikit distribution of fodder rendered by different agencies were also expressed by the respondents to a satisfactory extent.

The results pertaining to the perception of the farmers towards various AHDS have brought out that a majority of them were satisfied with sanitation and disinfection of animals and sheds, vaccination , deworming and deticking ,medical diagnosis and treatment , first aid, extension services like advisory services and minikit distribution, PM inspection and issue of health certificates . A small percentage of respondents could not express their perception towards gynecological diagnosis, treatment and supply of medicines, drugs and attending disease outbreaks and issue of insurance certificates.

It was also revealed that a majority of the respondents indicated dissatisfaction towards the services like disease surveillance and AH camps, surgical diagnosis and treatment and conduct of training programmes, follow up of services and disaster management.

LIST OF ABBREVATIONS

%	:	Percentage
AHD	:	Animal Husbandry Department
AHDS	:	Animal Health Delivery Services
APDDCF	:	Andhra Pradesh Dairy Development Cooperative Federation
APLDA	:	Andhra Pradesh Livestock Development Agency
BC	:	Backward Class
F	:	Frequency
NGO	:	Non Governmental Organisation
OC	:	Open Category
SC	:	Schedule Caste
SES	:	Socio-economic status
ST	:	Schedule Tribe
SVVU	:	Sri Venkateswara Veterinary University
VDO	:	Village Development Officer

INTRODUCTION

CHAPTER I

INTRODUCTION

Livestock production and human population has significantly increased since independence in our country . The livestock wealth of India depicts a huge bovine population of 348162 lakh, 61469 lakh sheep,124358 lakh goats and 13518 lakh pigs, (FAO Bulletin of Statistics, 2002). It is known fact that livestock is an important component of agricultural sector in India, which accounts 5.51 percent Gross Domestic Product (GDP).

Livestock, besides providing products also contributes draught power, organic manure for agriculture and fuel for domestic purposes. Though India possess the vast animal wealth in the world providing food for the poorest of the poor, the productivity of the livestock sector is 40 % when the optimum is 70% (Sashidhar, 2002). The livestock production depends on good production, better nutrition and regular health care and extension services, which all constitutes to the overall livestock production. One of the most important components of the livestock production is the provision of quality animal health services to the livestock farmers.

Like all other services in the agricultural sector, veterinary services in most of the developing countries including ours have been traditionally funded, managed and delivered by the public sector through a vast network of veterinary dispensaries and hospitals which are undertaken by the graduate veterinary doctors and para veterinary staff. The services are delivered with significant subsidies or on a free basis and due to these efforts there has been a significant increase in livestock production.

With the introduction of economic reforms in the country since 1992, public sector monopoly came under increasing threat as it started questioning the economic and efficiency of the veterinary services providers. While the government budget has suffered with the main issue of lack of funds and hence of a broad ineffective service (Carney, 1998).

The reforms in animal health services in developing countries have received much attention in recent years. In many countries veterinary services have been provided almost exclusively by the state, but growing fiscal pressures have compelled in dilution of the availability and quality of these services to a low level. Inadequate financial resources and stringent measures have brought about the active participation of private and NGOs in this sector and there by limiting the role of the state in livestock extension services. The veterinary services consume about 60% of the budget allocated to the livestock services (Prabharan, 2000) which has resulted in the reduction of financial support by the government agencies.

In India, the performances of NGOs like BAIF, Sri Satya Sai Seva Samithi, Lions and Rotary clubs and Sri Ramakrishna Mission, etc which are also involved in providing the animal health services and have demonstrated to be an efficient animal health services provider. Of late, the government agencies like state departments of Agriculture and Animal Husbandry, Agricultural and Veterinary Universities and Cooperative sectors have introduced user charges for some of the agricultural and veterinary services in the country.

The livestock extension services in the country involve mainly Health and Production services. The health service caters the curative and preventive measures

where as the production services involves in undertaking technical services, input & supply and educational services to the clientele. Considering the mammoth livestock population in the country with inadequate man power to cater the animal health care at micro level, the government agencies are not able to meet the primary requirements of AHD services at grass root level in view of the extensive demands of the livestock farmers.

Animal Health Scenario in Andhra Pradesh State : A P State is endowed with rich livestock wealth, and its products like milk, eggs, meat and also stands in unique position in egg and milk production in the overall livestock production status of the country.

The animal health delivery services are mainly catered by the state department of Animal Husbandry through its vast network of veterinary institutions which are spread all over the state. The veterinary university, private sector cooperative sector and NGOs are also contributing to AHD services for livestock farmers to a large extent possible.

The present investigation is undertaken in Krishna district of Andhra Pradesh which is one of the rich district of coastal AP and has good livestock population (15.4 lakhs) (Basic Animal Husbandry Statistics 2004). The Veterinary Institutions operating in Krishna district are Veterinary polyclinic (1), Veterinary Hospitals (16), Veterinary Dispensary (90), Rural Livestock Units (206), visiting centers (3).The total number of veterinary institutions are in the order of 316. The farmers are enterprising and receptive to new technologies and mostly depend on the animal health delivery services provided by the state A H Department.

Research literature on the above topic indicated that a very few or negligible studies have been undertaken by the researchers both in India and abroad on livestock

extension services. Hence, an attempt was made to undertake a study 'Animal Health Delivery Services-A Study in Krishna district' with a view to elicit empirical evidence on the research findings with following objectives.

1.1 OBJECTIVES OF THE STUDY

1. To identify the various agencies involved in the Animal Health Delivery Services (AHDS).
2. To study the different Animal Health Delivery Services provided by the above agencies.
3. To study socio-economic profile of the selected farmers.
4. To study the perception of the selected farmers towards the Animal Health Delivery Services (AHDS).

1.2 SCOPE AND IMPORTANCE OF THE STUDY

Animal Health care is a cardinal element in the cycle of livestock production unless quality and assured animal health delivery services are made available to the livestock farmers by the various agencies involved, both the short and long term effects on livestock production and economic dimensions of the livestock farmers are greatly affected, as the livestock farmers are mostly dependent on this sector for their livelihood.

A study of this type has vast scope, since it can lead to the grey areas emerged from the findings of the study so that the agencies involved can attend to the deficiencies or shortcomings in the various dimensions of AHD and can take remedial measures which go long way in the provision of quality AHDS to the livestock farmers.

1.3 LIMITATIONS OF THE STUDY

1. The research designs used for present study may have certain limitations.
2. The study, being a student investigation had the usual limitations of time and resources.
3. The study was conducted in the selected areas and hence the findings are applicable to such similar situations only.
4. Most of the data collected were based on the expressed opinion of the respondents on animal health delivery services. Therefore the study may not be free from usual biases involved with the respondents in social research.

1.4 PRESENTATION OF THE THESIS

The investigation has been organized in six chapters. The first chapter covered the introduction including objectives, scope, importance and limitations of the study. The second chapter gave a brief review of literature. The third chapter describes the materials and methods used in the process of investigation. The fourth chapter infers the results of the investigation and discussion is presented in the fifth chapter. The sixth chapter brings out the summary with implications of the study. Literature cited and appendices are given at the end of all the chapter.

MATERIAL AND METHODS

CHAPTER III

MATERIAL AND METHODS

The present study was carried out with the main objective of "Animal Health Delivery Services" in Krishna district (A.P). This chapter deals with the methodology adopted for the investigation. For the purpose of clarity and understanding the chapter was presented under the following sub heads.

3.1 Research design

3.2 Locale of the study

3.3 Sample and Sampling procedure

3.4 Variable and their empirical measurement

3.5 Instruments and methods used for data collection

3.6 Statistical tools used for analysis of the data

3.1 RESEARCH DESIGN

Keeping in view the objectives of the study, type of variables under consideration, to have clarity and easy understanding; the present study was divided into two stages i.e., in intial phase exploratory research design to see the various agencies providing services (government and semi –government officials). An ex-post facto research was also adopted in the later phase i.e., awareness and perception of the farmers in relation to the animal health delivery services.

3.2 LOCALE OF THE STUDY

Andhra Pradesh state was purposively selected for the following reasons:

a) It is one of the important agricultural states in the country with highest livestock population.

b) Since, the researcher belongs to his native state i.e.(A.P), he is familiar with the local language and environment. Hence it has facilitated the investigator to develop a quick rapport with the respondents for undertaking the investigation.

3.3 SAMPLE AND SAMPLING PROCEDURE

3.3.1 Selection of the District

Krishna district was purposively selected for the study, as this district in AP is one of the districts having highest livestock population and there is heavy demand for effective Livestock Health Services.

3.3.2 Selection of Mandals

There are five revenue divisions in Krishna district *viz*; Gudlavalleru, Nandigama, Machilipatnam, Nuzivid and Kankipadu, Three division were selected randomly, from each revenue division, one mandal was selected, a total of three mandals namely Gudivada, Nandigama, and Gannavaram were finally selected for the investigation.

3.3.3 Selection of Villages

From each mandal two villages were selected randomly; A total of six villages from three mandals were selected for final investigation.

Table 1: Sampling design of Villages and Mandals

LIST OF SELECTED VILLAGE		
S.NO	**NAME OF THE VILLAGE**	**NAME OF THE MANDAL**
1	Moturu	Gudivada
2	Dondapadu	Gudivada
3	Magallu	Nandigama
4	Rudravaram	Nandigama
5	Musthabada	Gannavaram
6	Keserapalli	Gannavaram

3.3.4 Selection of the Respondents

A sample of 20 livestock farmers were randomly selected from each selected village such that a total sample of 120 livestock farmers from six villages in 3 mandals were finally considered for investigation.

3.4. VARIABLES AND THEIR EMPIRICAL MEASUREMENT

The present study aimed at collecting data from the officials and the farmers towards animal health delivery services and suitable variables needed for the study were selected accordingly and tools of measurement employed were present in Table 2.

Table 2: Variables and their Empirical Measurement

A) For Officials

1	Agencies	Schedule was developed for the study

B) For Farmers

S.No	VARIABLE	MEASUREMENT
I	Dependant Variables	
1	Awareness	Schedule was developed for the study
2	Perception	Schedule was developed for the study
II	Independent Variables	
1	Age	Chronological age of the respondents
2	Livestock Farming Experience	No. of years completed in farming
3	Socio-Economic Status [SES]	Scale developed by Venkataramaiah (1983) revised Venkataramaiah (2000) was used with suitable modifications
A	Occupation	-do-
B	Land Holding	-do-
C	Caste	-do-
D	Education	-do-
E	Socio-political Participation	-do-
F	Material possession	-do-
G	House	-do-
H	Family size	-do-
4	Herd Size	Scale developed by Bawajir and Nandapurkar (1985) with suitable modifications
5	Information Seeking Behaviour	Scale developed by Raju (1991) with suitable modifications

3.4.1 Identification of Agencies

This variable was operationalised as the various agencies identified under Govt, Private, Cooperative and NGOs which are providing animal health delivery services. A pre- structured schedule was developed for the purpose. The final schedule included eighteen statements under four heads with 2- point response categories i.e. Involved and Not involved with score of 1and 0 respectively, such that a minimum possible score of 0 and maximum score of 18 was arrived at for its measurement.

3.4.2 Awareness of AHD Services

It is a more cognitive behaviour Animal health delivery services of an individual and is operationalised as the respondents consciousness and sensitization on the objective of animal health delivery services (AHDS). This variable was measured by identifying the various types of animal health delivery services provided by the agencies through 2-point response categories for awareness *i.e.* Aware and Not aware with score of 1 and 0 were assigned .

3.4.3 Perception of farmers towards AHD Services

It is a more cognitive behaviour of an individual and is operationalized as the respondents consciousness and sensitization on the objective of animal health delivery services (AHDS).This variable was measured by identifying the types of AHD services provided by the agencies through responses obtained on 3-point continuum i.e. Satisfied, Undecided and Unsatisfied with assigned scores of 2, 1 and 0 respectively.

3.4.4 Personal and Socio-economic Characteristics of the Respondents

The personal and socio-economic variables included in the study were age, occupation, land holding, caste, education, socio-political participation, material possession, house, family size, herd size and information seeking behavior were included in the present study.

3.4.4.1. Age

It was operationalised as the number of completed years of a respondent at the time of interview. Each completed year was given a score of one and the total score was calculated for all the respondents. Categorisation was done as young, middle and old age groups based on the mean and half SD

S.No.	Group	Age Range

A)	Young age	Upto 30 years
B)	Middle age	31-55 years
C)	Old age	>55 years

3.4.4.2. Livestock Farming Experience

It was operationalised as the number of years in livestock farming experience of the respondent held at the time of investigation. Each year of experience was assigned a score of one so as to arrive at the total livestock farming experience score of a respondent.

The respondents were categorized into low, medium and high experience groups based on class interval (inclusive) method as follows:

Category	Score range
a) Low range	1-21
b) Medium range	21-41
c) High range	41-61

3.4.4.3. Socio-Economic Status [SES]

3.4.4.3.1Occupation

0ccupation was defined as the nature of vocation pursued by the respondent. It refers to the farmers occupation as status in terms of farming and other profession.

S.NO	Occupation
1.	Non-occupation
2.	Unskilled
3.	Semi-skilled

4. Farming/Business

5. Professional

3.4.4.3.2 Land Holding

The land holding was operationalised as the standard acres of land holding possessed by the respondents at the time of investigation.

S.No.	Land Holding
1.	Landless
2.	Marginal
3.	Small
4.	Large

3.4.4.3.3 Caste

It was operationalised as the status enjoyed by an individual in the society by virtue of particular caste. The caste of an individual is conceptualized as one, which is ascribed by birth.

S.No.	Caste
1.	SC
2.	ST
3.	BC
4.	Others general
5.	Minorities

3.4.4.3.4 Education

It was operationalised as the person's ability to read, write and amount of formal education received by him, scoring was done on the of formal education received

by him based on the socio-economic scale developed by venkataramiah (1983) scale later revised (2000). The respondents were categorized on the basis of literacy level.

S.No.	Education
1.	Illiterate
2.	Functionally literate
3.	Primary School
4.	Mid School
5.	High School
6.	College Education

3.4.4.3.5 Socio-Political Participation

It was conceptualised as the active participation of the respondent in a social institution either as a member or an office bearer.

S.No.	Socio-Political Participation
1.	Without any official position in socio-political Organisation
2.	Official position in any one Organisation
3.	Official in social and political Committee
4.	Financial Contribution
5.	Actual office bearer
6.	Involved in Community Work

3.4.4.3.6 Material Possession

It was operationally defined as the possession of different tools and implements used in agriculture and other fields. Thus the following materials were listed

S.No.	Material Possession
1.	Duster
2.	Sprayer
3.	Electric Motor
4.	Wooden Plough
5.	Cycle
6.	Motor Cycle
7.	Tractor
8.	Television
9.	Agricultural implements

3.4.4.3.7 House

It was operationalised as the respondents' living in a closed shelter/house as a means of accommodation.

S.No.	House
1.	Thatched House
2.	Mud Wall
3.	Brick Wall
4.	Concrete
5.	Concrete & Double Storied

3.4.4.3.8 Family Size

It was operationalised as the total number of members, which constituted the respondents family. The respondents were categorized based on the total number of members in the family.

S.No.	Family Size
1.	Small (1-3)
2.	Medium (4-6)
3.	Large (7-9)
4.	Very Large (>9)

3.4.4.4 Herd Size

This variable was operationalised as the total number of animals possessed by the respondent at the time of investigation such as indigenous cattle, crossbred cattle, buffaloes, bullock, sheep and goats.

S.NO	Category	Score
A	Cattle	
1.	Cows	1
2.	Bull/Bullocks (pair)	2
3.	Calves/Heifers	1
B	Crossbred Cattle	
1.	Cross bred cows	4
2.	Bull/Bullocks	2
3.	Calves/Heifers	3
C	Buffaloes	
1.	She Buffaloes	3
2.	He Buffaloes	1
3.	Calves/Heifers	2

D	Sheep (5 units)	3
1.	Male (1)	
2.	Females (4)	
E	Goat (5 units)	3
1.	Male (1)	
2.	Females (4)	

Total scores for each respondent were obtained for herd size and the respondents were categorized into small, medium and large herd size categories which are as follows;

Category	Score range
Small herd size (< 5animals)	Upto 15
Medium herd size (6 to 10 animals)	16-30
Large herd size	>30 animals

3.4.4.5 Information Seeking Behavior

It was operationally defined as the frequency of contact or exposure of a respondent to different sources for obtaining farm information. The methodology developed by Raju (1991) was adopted after necessary modifications that are found relevant for the study. The schedule on the information seeking behavior of the respondents, contained seventeen items under 3 sub heads viz., informal sources, formal sources and mass media. Four response categories namely Frequently, Occasionally, Rarely and Never were provided with weightages of 3, 2, 1 and 0 respectively.

Total scores for each respondent for information seeking behavior were obtained and the respondents were grouped into three categories according to class interval (inclusive) method as follows:

Category	Score range
i) Low information seeking behaviour	0-17
ii) Medium information seeking behaviour	17-34
iii) High information seeking behaviour	34-51

DEGREE OF CONTACT

S.No.	Information Source	Frequently	Occasionally	Rarely	Never
1.	Informal Sources				
	a. Family Members				
	b. Neighbours				
	c. Friends/Relatives				
	d. Progressive Farmers				
2.	Formal Sources				
	a. Veterinary Assistant Surgeon				
	b. Veterinary Assistant				
	c. Scientists of SVVU				
	d. Sarpanch				
	e. VDO				
	f. GopalaMitra Worker				
	g. Bank Officials				
	h. Milk Procurement Supervisor				
	i. Salesmen				
3.	Mass Media				
	a. Radio				
	b. Television				
	c. Newspapers				

d. Farm magazines

3.5 INSTRUMENTS AND METHODS USED FOR DATA COLLECTION

The relevant variables or items needed under Animal Health Delivery Services(AHDS) for officials and farmers were prepared after ascertaining the opinion of relevant items to be included under AHDS from 25 judges drawn from various veterinary colleges across the country, AH Department and field veterinary practitioners in the state. Based on the opinion given by 20 judges, which has a mean value of above 50 per cent the relevant items under AHDS were incorporated in the interview schedule for investigation.

The interview schedule for farmers was pre-tested in non sample area among 20 farmers. In the light of the experience gained in pre-testing, suitable modifications were made in the interview schedule before administering to the respondents in the main sample area.The final Interview schedule is given in the Appendix.

3.5.1 Administration of the Schedule

The Interview Schedule comprised of two parts, Part A dealt with the different agencies providing services through the Government and Semi-government officials. Part B included socio- economic profile of the farmers awareness and perception of the services provided by the various agencies.

3.5.2 Establishing Rapport with the Respondents

Necessary rapport with the respondents is very essential as it has an important role in eliciting the responses from respondents throughout the investigation. So, keeping this in view, prior to data collection, the investigator got acquainted with the respondents selected for the study. This helped the investigator in gaining the confidence and their cooperation

which has helped in conducting in smooth personal contact with respondents and facilitated investigation.

3.6 Statistical Tools used for Analysis of the Data

For the purpose of statistical analysis of data, the simple statistical tools were selected (Frequencies and Percentages).

MATERIAL AND METHODS

CHAPTER III

MATERIAL AND METHODS

The present study was carried out with the main objective of "Animal Health Delivery Services" in Krishna district (A.P). This chapter deals with the methodology adopted for the investigation. For the purpose of clarity and understanding the chapter was presented under the following sub heads.

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3.6 Statistical tools used for analysis of the data

3.1 RESEARCH DESIGN

Keeping in view the objectives of the study, type of variables under consideration, to have clarity and easy understanding; the present study was divided into two stages i.e., in intial phase exploratory research design to see the various agencies providing services (government and semi –government officials). An ex-post facto research was also adopted in the later phase i.e., awareness and perception of the farmers in relation to the animal health delivery services.

3.2 LOCALE OF THE STUDY

Andhra Pradesh state was purposively selected for the following reasons:

a) It is one of the important agricultural states in the country with highest livestock population.

b) Since, the researcher belongs to his native state i.e.(A.P), he is familiar with the local language and environment. Hence it has facilitated the investigator to develop a quick rapport with the respondents for undertaking the investigation.

3.3 SAMPLE AND SAMPLING PROCEDURE

3.3.1 Selection of the District

Krishna district was purposively selected for the study, as this district in AP is one of the districts having highest livestock population and there is heavy demand for effective Livestock Health Services.

3.3.2 Selection of Mandals

There are five revenue divisions in Krishna district *viz*; Gudlavalleru, Nandigama, Machilipatnam, Nuzivid and Kankipadu, Three division were selected randomly, from each revenue division, one mandal was selected, a total of three mandals namely Gudivada, Nandigama, and Gannavaram were finally selected for the investigation.

3.3.3 Selection of Villages

From each mandal two villages were selected randomly; A total of six villages from three mandals were selected for final investigation.

Table 1: Sampling design of Villages and Mandals

LIST OF SELECTED VILLAGE		
S.NO	**NAME OF THE VILLAGE**	**NAME OF THE MANDAL**
1	Moturu	Gudivada
2	Dondapadu	Gudivada
3	Magallu	Nandigama
4	Rudravaram	Nandigama
5	Musthabada	Gannavaram
6	Keserapalli	Gannavaram

3.3.4 Selection of the Respondents

A sample of 20 livestock farmers were randomly selected from each selected village such that a total sample of 120 livestock farmers from six villages in 3 mandals were finally considered for investigation.

3.4. VARIABLES AND THEIR EMPIRICAL MEASUREMENT

The present study aimed at collecting data from the officials and the farmers towards animal health delivery services and suitable variables needed for the study were selected accordingly and tools of measurement employed were present in Table 2.

Table 2: Variables and their Empirical Measurement

A) For Officials

1	Agencies	Schedule was developed for the study

B) For Farmers

S.No	VARIABLE	MEASUREMENT
I	Dependant Variables	
1	Awareness	Schedule was developed for the study
2	Perception	Schedule was developed for the study
II	Independent Variables	
1	Age	Chronological age of the respondents
2	Livestock Farming Experience	No. of years completed in farming
3	Socio-Economic Status [SES]	Scale developed by Venkataramaiah (1983) revised Venkataramaiah (2000) was used with suitable modifications
A	Occupation	-do-
B	Land Holding	-do-
C	Caste	-do-
D	Education	-do-
E	Socio-political Participation	-do-
F	Material possession	-do-
G	House	-do-
H	Family size	-do-
4	Herd Size	Scale developed by Bawajir and Nandapurkar (1985) with suitable modifications
5	Information Seeking Behaviour	Scale developed by Raju (1991) with suitable modifications

3.4.1 Identification of Agencies

This variable was operationalised as the various agencies identified under Govt, Private, Cooperative and NGOs which are providing animal health delivery services. A pre- structured schedule was developed for the purpose. The final schedule included eighteen statements under four heads with 2- point response categories i.e. Involved and Not involved with score of 1and 0 respectively, such that a minimum possible score of 0 and maximum score of 18 was arrived at for its measurement.

3.4.2 Awareness of AHD Services

It is a more cognitive behaviour Animal health delivery services of an individual and is operationalised as the respondents consciousness and sensitization on the objective of animal health delivery services (AHDS). This variable was measured by identifying the various types of animal health delivery services provided by the agencies through 2-point response categories for awareness *i.e.* Aware and Not aware with score of 1 and 0 were assigned .

3.4.3 Perception of farmers towards AHD Services

It is a more cognitive behaviour of an individual and is operationalized as the respondents consciousness and sensitization on the objective of animal health delivery services (AHDS).This variable was measured by identifying the types of AHD services provided by the agencies through responses obtained on 3-point continuum i.e. Satisfied, Undecided and Unsatisfied with assigned scores of 2, 1 and 0 respectively.

3.4.4 Personal and Socio-economic Characteristics of the Respondents

The personal and socio-economic variables included in the study were age, occupation, land holding, caste, education, socio-political participation, material possession, house, family size, herd size and information seeking behavior were included in the present study.

3.4.4.1. Age

It was operationalised as the number of completed years of a respondent at the time of interview. Each completed year was given a score of one and the total score was calculated for all the respondents. Categorisation was done as young, middle and old age groups based on the mean and half SD

S.No.	Group	Age Range

A)	Young age	Upto 30 years
B)	Middle age	31-55 years
C)	Old age	>55 years

3.4.4.2. Livestock Farming Experience

It was operationalised as the number of years in livestock farming experience of the respondent held at the time of investigation. Each year of experience was assigned a score of one so as to arrive at the total livestock farming experience score of a respondent.

The respondents were categorized into low, medium and high experience groups based on class interval (inclusive) method as follows:

Category	Score range
a) Low range	1-21
b) Medium range	21-41
c) High range	41-61

3.4.4.3. Socio-Economic Status [SES]

3.4.4.3.1Occupation

0ccupation was defined as the nature of vocation pursued by the respondent. It refers to the farmers occupation as status in terms of farming and other profession.

S.NO	Occupation
1.	Non-occupation

2. Unskilled

3. Semi-skilled

4. Farming/Business

5. Professional

3.4.4.3.2 Land Holding

The land holding was operationalised as the standard acres of land holding possessed by the respondents at the time of investigation.

S.No.	Land Holding
1.	Landless
2.	Marginal
3.	Small
4.	Large

3.4.4.3.3 Caste

It was operationalised as the status enjoyed by an individual in the society by virtue of particular caste. The caste of an individual is conceptualized as one, which is ascribed by birth.

S.No.	Caste
1.	SC
2.	ST
3.	BC
4.	Others general
5.	Minorities

3.4.4.3.4 Education

It was operationalised as the person's ability to read, write and amount of formal education received by him, scoring was done on the of formal education received by him based on the socio-economic scale developed by venkataramiah (1983) scale later revised (2000). The respondents were categorized on the basis of literacy level.

S.No.	Education
1.	Illiterate
2.	Functionally literate
3.	Primary School
4.	Mid School
5.	High School
6.	College Education

3.4.4.3.5 Socio-Political Participation

It was conceptualised as the active participation of the respondent in a social institution either as a member or an office bearer.

S.No.	Socio-Political Participation
1.	Without any official position in socio-political Organisation
2.	Official position in any one Organisation
3.	Official in social and political Committee
4.	Financial Contribution
5.	Actual office bearer
6.	Involved in Community Work

3.4.4.3.6 Material Possession

It was operationally defined as the possession of different tools and

implements used in agriculture and other fields. Thus the following materials were listed

S.No.	Material Possession
1.	Duster
2.	Sprayer
3.	Electric Motor
4.	Wooden Plough
5.	Cycle
6.	Motor Cycle
7.	Tractor
8.	Television
9.	Agricultural implements

3.4.4.3.7 House

It was operationalised as the respondents' living in a closed shelter/house as a means of accommodation.

S.No.	House
1.	Thatched House
2.	Mud Wall
3.	Brick Wall
4.	Concrete
5.	Concrete & Double Storied

3.4.4.3.8 Family Size

It was operationalised as the total number of members, which constituted

the respondents family. The respondents were categorized based on the total number of members in the family.

S.No.	Family Size
1.	Small (1-3)
2.	Medium (4-6)
3.	Large (7-9)
4.	Very Large (>9)

3.4.4.4 Herd Size

This variable was operationalised as the total number of animals possessed by the respondent at the time of investigation such as indigenous cattle, crossbred cattle, buffaloes, bullock, sheep and goats.

S.NO	Category	Score
A	Cattle	
1.	Cows	1
2.	Bull/Bullocks (pair)	2
3.	Calves/Heifers	1
B	Crossbred Cattle	
1.	Cross bred cows	4
2.	Bull/Bullocks	2
3.	Calves/Heifers	3
C	Buffaloes	
1.	She Buffaloes	3

2.	He Buffaloes	1
3.	Calves/Heifers	2
D	Sheep (5 units)	3
1.	Male (1)	
2.	Females (4)	
E	Goat (5 units)	3
1.	Male (1)	
2.	Females (4)	

Total scores for each respondent were obtained for herd size and the respondents were categorized into small, medium and large herd size categories which are as follows;

Category	Score range
Small herd size (< 5animals)	Upto 15
Medium herd size (6 to 10 animals)	16-30
Large herd size	>30 animals

3.4.4.5 Information Seeking Behavior

It was operationally defined as the frequency of contact or exposure of a respondent to different sources for obtaining farm information. The methodology developed by Raju (1991) was adopted after necessary modifications that are found relevant for the study. The schedule on the information seeking behavior of the respondents, contained seventeen items under 3 sub heads viz., informal sources, formal sources and mass media. Four response categories namely Frequently, Occasionally, Rarely and Never were provided with weightages of 3, 2, 1 and 0 respectively.

Total scores for each respondent for information seeking behavior were obtained and the respondents were grouped into three categories according to class interval (inclusive) method as follows:

Category	Score range
i) Low information seeking behaviour	0-17
ii) Medium information seeking behaviour	17-34
iii) High information seeking behaviour	34-51

DEGREE OF CONTACT

S.No.	Information Source	Frequently	Occasionally	Rarely	Never
1.	Informal Sources				
	a. Family Members				
	b. Neighbours				
	c. Friends/Relatives				
	d. Progressive Farmers				
2.	Formal Sources				
	a. Veterinary Assistant Surgeon				
	b. Veterinary Assistant				
	c. Scientists of SVVU				
	d. Sarpanch				
	e. VDO				
	f. GopalaMitra Worker				
	g. Bank Officials				
	h. Milk Procurement Supervisor				
	i. Salesmen				
3.	Mass Media				

a. Radio

b. Television

c. Newspapers

d. Farm magazines

3.5 INSTRUMENTS AND METHODS USED FOR DATA COLLECTION

The relevant variables or items needed under Animal Health Delivery Services(AHDS) for officials and farmers were prepared after ascertaining the opinion of relevant items to be included under AHDS from 25 judges drawn from various veterinary colleges across the country, AH Department and field veterinary practitioners in the state. Based on the opinion given by 20 judges, which has a mean value of above 50 per cent the relevant items under AHDS were incorporated in the interview schedule for investigation.

The interview schedule for farmers was pre-tested in non sample area among 20 farmers. In the light of the experience gained in pre-testing, suitable modifications were made in the interview schedule before administering to the respondents in the main sample area.The final Interview schedule is given in the Appendix.

3.5.1 Administration of the Schedule

The Interview Schedule comprised of two parts, Part A dealt with the different agencies providing services through the Government and Semi-government officials. Part B included socio- economic profile of the farmers awareness and perception of the services provided by the various agencies.

3.5.2 Establishing Rapport with the Respondents

Necessary rapport with the respondents is very essential as it has an important role in eliciting the responses from respondents throughout the investigation. So, keeping this in view, prior to data collection, the investigator got acquainted with the respondents selected for the study. This helped the investigator in gaining the confidence and their cooperation which has helped in conducting in smooth personal contact with respondents and facilitated investigation.

3.6 Statistical Tools used for Analysis of the Data

For the purpose of statistical analysis of data, the simple statistical tools were selected (Frequencies and Percentages).

DISCUSSION

CHAPTER V

DISCUSSION

In this chapter, the results were discussed and suitable conclusions were drawn based on the findings obtained from chapter IV. Discussion on the results of the study was presented under the following sub heads:

5.1 Personal, Socio-economic characteristics of the livestock farmers.

5.2 Identification of various agencies involved in Animal Health Delivery Services (AHDS) by Officials.

5.3 Awareness of the farmers on Animal Health Delivery Services (AHDS).

5.4 Perception of the farmers on Animal Health Delivery Services (AHDS).

5.1 PERSONAL, SOCIO-ECONOMIC CHARACTERISTICS OF THE LIVESTOCK FARMERS.

5.1.1 Age

It was evident from Table 3 the majority of farmers, 67.50 per cent belong to middle age followed by old age (23.34 %) and young age (9.16 %) .

5.1.2 Livestock Farming Experience

It was observed from Table 4 that majority of the young age (81.8%) and middle age (77.7%) were in low farming experience category where as half (50.0%) of the old age farmers possessed medium experience. The overall findings indicated that 69.16 per cent had low farming experience.

It is probably because majority of the small farmers had taken livestock farming as a temporary means only when it provides remunerative profits at a particular point of time. On the other hand, majority of the old farmers in the study area had livestock farming as a main occupation since they considered it as a source of profitable and assured income.

These findings are in agreement with Reddy (1996),Ravi Kumar (2001) and Ravi Kumar (2003) who observed that majority of the dairy farmers had low experience.

5.1.3 Occupation

From the Table 5 it was revealed that majority of young (81.8%) and middle age respondents (63%) were semiskilled in their occupation where as old age group (50%) were unskilled in occupation The overall findings indicated in the study area that 59.16 per cent were semiskilled in occupation

The findings probably denote that majority of the young farmers are semiskilled as they are educated and might have undergone training in some vocation hence this is the trend. While majority old of the farmers are found to be unskilled because as that they had no formal education or might have not got opportunity to undergo any skilled training.

5.1.4 Land Holding

Table 6 showed that majority of the young farmers (45.5%) were landless while majority of middle age (32.1%) and old age (46.4%) respondents belong to marginal and large land holdings respectively. The overall findings indicated that 31.67 per cent were large farmers.

This trend for such distribution of the majority of young age farmers indicated that agriculture is not a main business for them, while middle age and only old age farmers taken as a subsidiary occupation considering agriculture as their main livelihood.

5.1.5 Caste

Table 7 indicated that majority (72.7%) of young farmers, middle (33.3%) and old (46.4%) in the study area were mostly from BC community. The overall findings indicated that majority (35.83%) of the respondents categorized under BC group. It may be attributed that livestock farming is mostly covered by the community in the study area may be due to their traditional occupation and also due to rapid commercialization of livestock enterprise that this group have taken up livestock farming as a source of income or livelihood.

The findings were in concurrence with those of Sreelatha (1992), Aruna (1999), Rammurthy (2000) Ravikumar (2001) and Satyanarayana (2002) who stated that large percentage of the respondents were from backward caste communities.

5.1.6 Education

The results in the Table 8 explained that majority (27.3%) of young farmers were either in functionally illiterate, primary school or high in level of education, While 35.8% middle age group were functionally illiterate, Among the old age majority of (60.7%) were totally illiterate. Hence it was observed that a majority of the total respondents in study area were functionally illiterate.

From the above one can draw conclusions that the respondents in the young age group were functionally illeterate. Hence this trend where it was contrary in case of middle and old age farmers who could not afford to get educated for various reasons totally devoted to farming occupation

The findings probably denote that the young farmers high in level of education as their farmers could finance the children for higher studies. middle age and

old age farmers, in view of their poor financial resources could not afford money to study.

The results are in accordance with the findings of Ramchand et al., (1979) Rao (1986) Sharma (1995) and Ravi Kumar (2001) who reported that majority of the farmers were illiterate.

5.1.7 Socio-political Participation

From the Table 9, it was depicted that majority (45.5%) of young, and of the middle age group(59.3%) were without any official position in socio-political organization. Among the old age group majority of (35.7%) were holding office bearer positioning the organization. The overall findings indicated that the majority of the respondents in the study area were not holding any official position in socio-political organization

The probable reason for such distribution of majority of young and middle age farmers without any official position in socio-political organization even though they are young were not exposed to any organization. This may be due to lack of interest in them where as the reverse in the old age group respondents were more exposed in these organizations due to their interest and participation in it.

5.1.8 Material Possession

From Table 10, it could be observed that majority (63.6%) of young farmers had moderate material possession, while (67.9 %) of middle age group had low material possession, where as a high level of material possession was indicated among the majority (53.5%) of old age farmers.

From the overall trend of the total respondents indicated that more than

50 per cent were in low level of material possession.

Hence it could be inferred that the material possession by the different categories of the respondent may be due to their priorities given to important items required for farming activities and also for domestic requirements. As such, there seems to be not much affluence in high material possession and satisfied with simple trend of living.

Thus it can be inferred that the material possession of the different categories of farmers can be attributed to their successful livestock rearing business and realizing profitable income, which enabled them possess necessary materials required for their comfortable living.

The results are not in agreement with the findings of Reddy (1996) and Ravi Kumar (2003) who reported that the livestock farmers belong to medium possession category.

5.1.9 House

The results in the Table 11 revealed that majority (54.5%) of young farmers, followed by 65.4% and 78.3% of the middle and old were living in priced housing with brick wall construction. It was found that majority of the respondents in the study area i.e., about 68% had brick wall for their living which indicated that the farmers were reasonably sound.

The findings probably denote the farmers were average in financial status and capable of having a pucca house for their living.The above results were in consonance with the finding of Rao (1986) Kumar (1992) Badhulal (1999) Sharma (1995) etc.

5.1.10 Family Size

It was observed from the Table 12 that a large percentage of young farmers

i.e. about 46 per cent had Small family size, followed by 59 per cent and 75 per cent of middle age group and old age group respectively had medium family size. Among total farmers majority (60.00%) had medium family size which is the indication for good life and better living.

The above results were in accordance with the findings of various researchers viz., Sreelatha (1992), Prasuna (1996), Reddy (1998), Aruna (1999), Rammurthy (200o) and Satyanaryana(2002) found that majority of the livestock farmers possessed medium family size.

5.1.11 Herd Size

A glance on the Table 13 brings out that about 55% of the majority of young farmers, possessed medium herd size followed by large percentage(45.7%) of middle age farmers with medium herd size, while old age farmers i.e. 60.7 per cent had medium herd size.

The study area showed that 50 per cent of the total respondents had medium herdsize. It is a good trend where the farmers had medium range of herd size which includes rearing cross bred cows, graded buffaloes and small ruminants which indicates a healthy trend in rearing of livestock.

These observations were in accordance with that of earlier findings of Raju (1991), Kumar (1992) Badhulal (1999) and Satyanarayana (2002), Sri Haritha (2002), Ravi Kumar (2003) who stated that a majority of the respondents belong to medium herd size category.

5.1.12 Information Seeking Behaviour

From the Table 14 it reveals that all the farmers (young, middle and old age farmers) have medium information seeking behaviuor through informal, formal and mass media of young with 54.5 per cent and middle with 58 per cent, 37 per cent and 48 per cent and old 64 per cent,35 per cent, and 78.57 per cent respectively.

The findings probably denote that about 55 per cent of the young farmers had medium information seeking behaviour in acquiring information from different sources (informal,formal,mass media) It is a good trend where the farmers are of this type of medium information seeking behaviour for improving their livelihood by knowing the various aspects of AH Technologies.

The results are not in agreement with the findings of Reddy (1996) and Ravi Kumar (2003) who reported that the livestock farmers belong to medium information seeking behaviour category.

5.2 IDENTIFICATION OF VARIOUS AGENCIES INVOLVED IN ANIMAL HEALTH DELIVERY SERVICES (AHDS) BY OFFICIALS.

The Table 15 indicated that the agencies involved in animal health delivery services. The Government sector as a whole except municipal corporation providing services to the farmers to cent per cent extent. The private sector agencies is able to provide AHDS to the extent of 73 per cent. In Co-operative sector where in APDDCF is the only agency which is extending services to its clientele to cent per cent. Among the NGOs there are few agencies which provide service to full extent i.e. 100% while Rotary club to the extent of 46.7 per cent to the farmers.

By this we can draw conclusions the that the Government agencies such as AH Department, APLD Agency, Veterinary college (SVVUniversity) are rendering AHDS in various forms like A H camps, disease diagnosis and providing necessary

treatment for regular and critical ailments in livestock. The private and NGOs are also playing crucial part in the overall Animal Health Delivery Services and acting as supplement to the government agencies.

5.3 AWARENESS OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

The results in the Table 16 revealed that the respondents had high awareness levels in most of the services provided by different agencies.

1. Preventive health care services

A chronological discussion on the awareness of various preventive health care services in AH indicates that majority are not aware of disease surveillance, while a majority (65.83%) were aware of sanitation and disinfection. Similarly a large section of about 96% respondents were aware of vaccination and deworming provided by the agencies. The percentage of large majority of respondents who were aware of deticking and AH Camps conducted by the agencies is to the extent of about 94% in the study area.

2. Curative Service

The respondents of the study area had clear cut awareness on the disease diagnosis and treatment provided by the agencies in medical (93.33%), gynaecological (91.67%), surgical (89.17%),Supply of medicines and drugs (90.83%), first aid (83.33%) and attending disease out break (92.5%).

3. Extension

Extension service provided by the agencies revealed the percentage of the respondents were as follows Advisory services (91.67%), Training programmes (93.33%),Follow up services (65.83%),Mini- kit Distribution(83.33%).

4. Other Services

The other services include PM Inspection (50.83%), Issue of insurance certificates (88.33%), Health certificates (83.33%), and Disaster Management (13.33%) were aware of the services attributed by the respondents agencies.

The reasons for such high level of awareness in livestock farmers in study area is that being a sustainable enterprise and it is providing regular income to the farmer, the importance of Animal Health Care is on the utmost priority of the livestock farmer. Hence the respondents also were eager to get acquainted with the various services provided by different agencies and utilize the services efficiently.

The results showed that majority of the respondents had high level of awareness of different services provided by the agencies. The above findings are similar to that of Natikar et al (1996) which state that respondents were aware of various agricultural programmes and services provided by the different agencies.

5.4 PERCEPTION OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

The results in the Table 17 revealed the perception of farmers of various services are depicted on 3-point continuum i.e. satisfied, unable to decide and unsatisfied for some of the services provided by the agencies.

5.4.1 Preventive Health Care Services

A majority (39.17%) respondents expressed that they were unsatisfied with disease surveillance, while 60.83 per cent indicated as satisfied with sanitation and disinfection. Similarly 87.5 per cent of the respondents acknowledged their perception as satisfied with Vaccination and with Deworming. While (89.17%) mentioned as satisfied with Deticking, 48.33 per cent of them were unsatisfied with Animal Health Camps provided by the agencies.

2) Curative Services

Disease Diagnosis and treatment of different diseases showed that (54.17%) were satisfied with medical cases treated, while 55 per cent said they were unable to decide on Gynaecological cases, majority (45.83%) voiced their perception as unsatisfied with Surgical (Major& Minor) cases. Majority (45.83%) of the respondents were unable to decide with supply of medicines and drugs. A majority of about 54.17 per cent of the respondents were satisfied with first aid, while 53.33 per cent are unable to express with their perception on attending Disease Outbreak.

3. Extension

A majority of the respondents were satisfied with Advisory Services (50.83%), where as 53.33 per cent are unsatisfied with training programmes, about (46%) were unsatisfied with follow up services, following (61.67%) of the respondents were satisfied with Mini-kit Distribution.

4. Other Services

The service of PM Inspection has brought about 54 per cent of the majority respondents with satisfaction, while 80.83 per cent of the large respondents were unable to decide with the issue of insurance certificates. Similarly, 54.17 per cent of the respondents were satisfied with use of health certificates, while a large segment of (85%) of the respondents expressed dissatisfaction with disaster management.

DISCUSSION

CHAPTER V

DISCUSSION

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5.4 Perception of the farmers on Animal Health Delivery Services (AHDS).

5.1 PERSONAL, SOCIO-ECONOMIC CHARACTERISTICS OF THE LIVESTOCK FARMERS.

5.4.2 Age

It was evident from Table 3 the majority of farmers, 67.50 per cent belong to middle age followed by old age (23.34 %) and young age (9.16 %) .

5.1.2 Livestock Farming Experience

It was observed from Table 4 that majority of the young age (81.8%) and middle age (77.7%) were in low farming experience category where as half (50.0%) of the old age farmers possessed medium experience. The overall findings indicated that 69.16 per cent had low farming experience.

It is probably because majority of the small farmers had taken livestock farming as a temporary means only when it provides remunerative profits at a particular point of time. On the other hand, majority of the old farmers in the study area had livestock farming as a main occupation since they considered it as a source of profitable and assured income.

These findings are in agreement with Reddy (1996),Ravi Kumar (2001) and Ravi Kumar (2003) who observed that majority of the dairy farmers had low experience.

5.1.3 Occupation

From the Table 5 it was revealed that majority of young (81.8%) and middle age respondents (63%) were semiskilled in their occupation where as old age group (50%) were unskilled in occupation The overall findings indicated in the study area that 59.16 per cent were semiskilled in occupation

The findings probably denote that majority of the young farmers are semiskilled as they are educated and might have undergone training in some vocation hence this is the trend. While majority old of the farmers are found to be unskilled because as that they had no formal education or might have not got opportunity to undergo any skilled training.

5.1.6 Land Holding

Table 6 showed that majority of the young farmers (45.5%) were landless while majority of middle age (32.1%) and old age (46.4%) respondents belong to marginal and large land holdings respectively. The overall findings indicated that 31.67 per cent were large farmers.

This trend for such distribution of the majority of young age farmers indicated that agriculture is not a main business for them, while middle age and only old age farmers taken as a subsidiary occupation considering agriculture as their main livelihood.

5.1.7 Caste

Table 7 indicated that majority (72.7%) of young farmers, middle (33.3%) and old (46.4%) in the study area were mostly from BC community. The overall findings indicated that majority (35.83%) of the respondents categorized under BC group. It may be attributed that livestock farming is mostly covered by the community in the study area may be due to their traditional occupation and also due to rapid commercialization of livestock enterprise that this group have taken up livestock farming as a source of income or livelihood.

The findings were in concurrence with those of Sreelatha (1992), Aruna (1999), Rammurthy (2000) Ravikumar (2001) and Satyanarayana (2002) who stated that large percentage of the respondents were from backward caste communities.

5.1.6 Education

The results in the Table 8 explained that majority (27.3%) of young farmers were either in functionally illiterate, primary school or high in level of education, While 35.8% middle age group were functionally illiterate, Among the old age majority of (60.7%) were totally illiterate. Hence it was observed that a majority of the total respondents in study area were functionally illiterate.

From the above one can draw conclusions that the respondents in the young age group were functionally illeterate. Hence this trend where it was contrary in case of middle and old age farmers who could not afford to get educated for various reasons totally devoted to farming occupation

The findings probably denote that the young farmers high in level of education as their farmers could finance the children for higher studies. middle age and

old age farmers, in view of their poor financial resources could not afford money to study.

The results are in accordance with the findings of Ramchand et al., (1979) Rao (1986) Sharma (1995) and Ravi Kumar (2001) who reported that majority of the farmers were illiterate.

5.1.7 Socio-political Participation

From the Table 9, it was depicted that majority (45.5%) of young, and of the middle age group(59.3%) were without any official position in socio-political organization. Among the old age group majority of (35.7%) were holding office bearer positioning the organization. The overall findings indicated that the majority of the respondents in the study area were not holding any official position in socio-political organization

The probable reason for such distribution of majority of young and middle age farmers without any official position in socio-political organization even though they are young were not exposed to any organization. This may be due to lack of interest in them where as the reverse in the old age group respondents were more exposed in these organizations due to their interest and participation in it.

5.1.8 Material Possession

From Table 10, it could be observed that majority (63.6%) of young farmers had moderate material possession, while (67.9 %) of middle age group had low material possession, where as a high level of material possession was indicated among the majority (53.5%) of old age farmers.

From the overall trend of the total respondents indicated that more than

50 per cent were in low level of material possession.

Hence it could be inferred that the material possession by the different categories of the respondent may be due to their priorities given to important items required for farming activities and also for domestic requirements. As such, there seems to be not much affluence in high material possession and satisfied with simple trend of living.

Thus it can be inferred that the material possession of the different categories of farmers can be attributed to their successful livestock rearing business and realizing profitable income, which enabled them possess necessary materials required for their comfortable living.

The results are not in agreement with the findings of Reddy (1996) and Ravi Kumar (2003) who reported that the livestock farmers belong to medium possession category.

5.1.9 House

The results in the Table 11 revealed that majority (54.5%) of young farmers, followed by 65.4% and 78.3% of the middle and old were living in priced housing with brick wall construction. It was found that majority of the respondents in the study area i.e., about 68% had brick wall for their living which indicated that the farmers were reasonably sound.

The findings probably denote the farmers were average in financial status and capable of having a pucca house for their living.The above results were in consonance with the finding of Rao (1986) Kumar (1992) Badhulal (1999) Sharma (1995) etc.

5.1.10 Family Size

It was observed from the Table 12 that a large percentage of young farmers

i.e. about 46 per cent had Small family size, followed by 59 per cent and 75 per cent of middle age group and old age group respectively had medium family size. Among total farmers majority (60.00%) had medium family size which is the indication for good life and better living.

The above results were in accordance with the findings of various researchers viz., Sreelatha (1992), Prasuna (1996), Reddy (1998), Aruna (1999), Rammurthy (200o) and Satyanaryana(2002) found that majority of the livestock farmers possessed medium family size.

5.1.11 Herd Size

A glance on the Table 13 brings out that about 55% of the majority of young farmers, possessed medium herd size followed by large percentage(45.7%) of middle age farmers with medium herd size, while old age farmers i.e. 60.7 per cent had medium herd size.

The study area showed that 50 per cent of the total respondents had medium herdsize. It is a good trend where the farmers had medium range of herd size which includes rearing cross bred cows, graded buffaloes and small ruminants which indicates a healthy trend in rearing of livestock.

These observations were in accordance with that of earlier findings of Raju (1991), Kumar (1992) Badhulal (1999) and Satyanarayana (2002), Sri Haritha (2002), Ravi Kumar (2003) who stated that a majority of the respondents belong to medium herd size category.

5.1.13 Information Seeking Behaviour

From the Table 14 it reveals that all the farmers (young, middle and old age farmers) have medium information seeking behaviuor through informal, formal and mass media of young with 54.5 per cent and middle with 58 per cent, 37 per cent and 48 per cent and old 64 per cent,35 per cent, and 78.57 per cent respectively.

The findings probably denote that about 55 per cent of the young farmers had medium information seeking behaviour in acquiring information from different sources (informal,formal,mass media) It is a good trend where the farmers are of this type of medium information seeking behaviour for improving their livelihood by knowing the various aspects of AH Technologies.

The results are not in agreement with the findings of Reddy (1996) and Ravi Kumar (2003) who reported that the livestock farmers belong to medium information seeking behaviour category.

5.5 IDENTIFICATION OF VARIOUS AGENCIES INVOLVED IN ANIMAL HEALTH DELIVERY SERVICES (AHDS) BY OFFICIALS.

The Table 15 indicated that the agencies involved in animal health delivery services. The Government sector as a whole except municipal corporation providing services to the farmers to cent per cent extent. The private sector agencies is able to provide AHDS to the extent of 73 per cent. In Co-operative sector where in APDDCF is the only agency which is extending services to its clientele to cent per cent. Among the NGOs there are few agencies which provide service to full extent i.e. 100% while Rotary club to the extent of 46.7 per cent to the farmers.

By this we can draw conclusions the that the Government agencies such as AH Department, APLD Agency, Veterinary college (SVVUniversity) are rendering AHDS in various forms like A H camps, disease diagnosis and providing necessary

treatment for regular and critical ailments in livestock. The private and NGOs are also playing crucial part in the overall Animal Health Delivery Services and acting as supplement to the government agencies.

5.6 AWARENESS OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

The results in the Table 16 revealed that the respondents had high awareness levels in most of the services provided by different agencies.

1. Preventive health care services

A chronological discussion on the awareness of various preventive health care services in AH indicates that majority are not aware of disease surveillance, while a majority (65.83%) were aware of sanitation and disinfection. Similarly a large section of about 96% respondents were aware of vaccination and deworming provided by the agencies. The percentage of large majority of respondents who were aware of deticking and AH Camps conducted by the agencies is to the extent of about 94% in the study area.

2. Curative Service

The respondents of the study area had clear cut awareness on the disease diagnosis and treatment provided by the agencies in medical (93.33%), gynaecological (91.67%), surgical (89.17%),Supply of medicines and drugs (90.83%), first aid (83.33%) and attending disease out break (92.5%).

3. Extension

Extension service provided by the agencies revealed the percentage of the respondents were as follows Advisory services (91.67%), Training programmes (93.33%),Follow up services (65.83%),Mini- kit Distribution(83.33%).

4. Other Services

The other services include PM Inspection (50.83%), Issue of insurance certificates (88.33%), Health certificates (83.33%), and Disaster Management (13.33%) were aware of the services attributed by the respondents agencies.

The reasons for such high level of awareness in livestock farmers in study area is that being a sustainable enterprise and it is providing regular income to the farmer, the importance of Animal Health Care is on the utmost priority of the livestock farmer. Hence the respondents also were eager to get acquainted with the various services provided by different agencies and utilize the services efficiently.

The results showed that majority of the respondents had high level of awareness of different services provided by the agencies. The above findings are similar to that of Natikar et al (1996) which state that respondents were aware of various agricultural programmes and services provided by the different agencies.

5.7 PERCEPTION OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

The results in the Table 17 revealed the perception of farmers of various services are depicted on 3-point continuum i.e. satisfied, unable to decide and unsatisfied for some of the services provided by the agencies.

5.7.1 Preventive Health Care Services

A majority (39.17%) respondents expressed that they were unsatisfied with disease surveillance, while 60.83 per cent indicated as satisfied with sanitation and disinfection. Similarly 87.5 per cent of the respondents acknowledged their perception as satisfied with Vaccination and with Deworming. While (89.17%) mentioned as satisfied with Deticking, 48.33 per cent of them were unsatisfied with Animal Health Camps provided by the agencies.

2) Curative Services

Disease Diagnosis and treatment of different diseases showed that (54.17%) were satisfied with medical cases treated, while 55 per cent said they were unable to decide on Gynaecological cases, majority (45.83%) voiced their perception as unsatisfied with Surgical (Major& Minor) cases. Majority (45.83%) of the respondents were unable to decide with supply of medicines and drugs. A majority of about 54.17 per cent of the respondents were satisfied with first aid, while 53.33 per cent are unable to express with their perception on attending Disease Outbreak.

3. Extension

A majority of the respondents were satisfied with Advisory Services (50.83%), where as 53.33 per cent are unsatisfied with training programmes, about (46%) were unsatisfied with follow up services, following (61.67%) of the respondents were satisfied with Mini-kit Distribution.

4. Other Services

The service of PM Inspection has brought about 54 per cent of the majority respondents with satisfaction, while 80.83 per cent of the large respondents were unable to decide with the issue of insurance certificates. Similarly, 54.17 per cent of the respondents were satisfied with use of health certificates, while a large segment of (85%) of the respondents expressed dissatisfaction with disaster management.

SUMMARY

CHAPTER VI

SUMMARY

Livestock Production and human population has significantly increased since independence in our country . It is a known fact that livestock is an important component of agricultural sector in India, which accounts 5.51 percent Gross Domestic Product (GDP)

Livestock besides providing products contributes draught power, organic manure for agriculture and fuel for domestic purposes. The livestock production depends on the good production, better nutrition and regular health care and extension services. One of the most important components of the livestock production is the provision of quality animal health services to the livestock farmers.

With the introduction of economic reforms in the country since 1992, public sector monopoly came under increasing threat as it started questioning the efficiency of the veterinary service providers. While the government budgets have suffered with main issue of lack of funds it leads to ineffective service (Carney, 1998).

The reforms in animal health services in developing countries have received much attention in recent years. In many countries veterinary services have been provided almost exclusively by the state, but growing fiscal pressures have compelled in dilution of the availability and quality of these services to a low level. Inadequate financial resources and stringent measures have brought about the active participation of private and

NGOs in this sector and there by limiting the role of the state in livestock extension services. The veterinary services consume about 60% of the budget allocated to the livestock services (Prabharan, 2000) which has resulted in the reduction of financial support by the government agencies. Hence an attempt was made to undertake a study 'Animal Health Delivery Services-A Study in Krishna district' with a view to elicit empirical evidence on the research findings with following objectives.

6.1 OBJECTIVES OF THE STUDY

5. To identify the various agencies involved in the Animal Health Delivery Services (AHDS).
6. To study the different Animal Health Delivery Services provided by the above agencies.
7. To study Socio-economic profile of the selected farmers.
8. To study the perception of the selected farmers towards the Animal Health Delivery Services (AHDS).

6.2 RESEARCH METHODOLOGY

The present study entitled "Animal Health Delivery Services- A Study in Krishna District" was conducted in two stages i.e. in initial phase exploratory research design to explore the various agencies providing services by various government and semi – government officials which was investigated among 15 officials. The ex-post facto research was adopted in the later phase i.e. awareness and perception of the farmers in relation to the services among 120 respondents using random sampling technique.

The data were collected by using a pre-tested, structured interview schedule and the same was tabulated and analyzed with the help of simple

statistical analysis.

6.3 FINDINGS OF THE STUDY

6.3.1 Personal, Socio-economic Characteristics of the Livestock Farmers.

1. A majority of the respondents *i.e.*,67.5% were in middle age group, had low livestock experience (77.7%) , semiskilled in occupation(63.0%), marginal land holdings (32.1%) while 33.3 per cent belong to BC category , 35.8 per cent were functionally illiterate and 59.3 per cent did not hold any official position in socio-political organization. About 67.9 per cent of the farmers had low material possession and 65 per cent of the farmers were living in pucca brick walled constructed house, 59.2 per cent have medium family size and 45.7 per cent of the sample had medium herd size, with moderate information seeking behaviour.

2. The findings in the case of young age respondents who constitute 9.16 per cent about 46 per cent were landless farmers , majority of the respondents *i.e.*,72.7 per cent belong to BC community, 27.3 per cent of the sample had high school education, about 46 per cent of the respondents are not holding any official position in socio-political organization.63.3 per cent had medium level of material possession, 54.5 per cent were living in brick wall constructed houses, 45.4 per cent of them possessed small family size and 54.5 per cent had medium herd size

3. Majority of the old age farmers constituted 23.34 per cent of the total sample.50 per cent had medium livestock experience followed by 50 per cent who were unskilled in occupation,46.4 per cent of the sample had large land holdings. Most of them belong to BC category and were illiterate. 35.7 per cent of the respondents were holding actual office bearers in socio-political organizations, about 54 per cent possessed high material position and 75 per cent and 60.7 per cent had medium family size and herd size respectively.

6.3 IDENTIFICATION OF VARIOUS AGENCIES INVOLVED IN ANIMAL HEALTH DELIVERY SERVICES (AHDS) BY OFFICIALS

The findings related to the identification of various agencies involved in AHDS of the officials are as follows:

1.The various agencies under government sector which included AH department, AP livestock development agency, veterinary college(SVVU) and others like Agri market yards etc., were providing cent per cent AHDS services to the farmers.

2. Among private sector 40 per cent of AHDS were rendered by private veterinary clinicians followed by 20 per cent by feed manufacturers and 13.3 per cent by pharmaceutical companies.

3.APDDCF is the only agency under co-operative sector which is extending AHDS to farmers for cent percent.

4. In NGOs only two agencies like Lions club which caters AHDS to farmers for cent per cent followed by rotary club to an extent of 46.7%

6.3 AWARENESS OF FARMER TOWARDS ANIMAL HEALTH DELIVERY SERVICE

6.3.1 Preventive Health Care Services

The findings on the above variable depicts that 85.84 per cent of the majority farmers were not aware on disease surveillance where as 65.83 per cent of the respondents were conscious of sanitation and disinfection of animals while a large section of 95.83 per cent of the sample

were aware of vaccination and deworming services for animals, deticking and animal health camps services by a majority of about 94 per cent of the respondents.

6.3.2 Curative

A majority of more than 93 per cent of the respondents were aware of medical and gynaecological diagnosis (92%) and treatment followed by about 89 per cent of them were aware of surgical (major & minor) diagnosis and treatment. Awareness on supply of medicines and drugs , first aid and attending disease out break were 90.83, 83.34 and 92.5 per cent of the respondents respectively

6.3.3 Extension

About 92% of the farmers were aware of advisory services followed by 93, 65.83 and 83.34 per cent of the respondents who were aware of training programmes , follow up services and mini kit distribution.

6.3.4 Other Services

Other services which include PM inspection , issue of insurance and health certificates in which awareness was expressed by 50.83 and 88.33 of the respondents while 86.67 per cent of the same indicated non awareness on disaster management services of the agencies.

6.4 PERCEPTION OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

6.4.1 Preventive Health Care Services

The findings revealed that 39.17 per cent of the farmers expressed dissatisfaction on disease surveillance, while 60.83 per cent indicated satisfaction towards sanitation and disinfection,

87.5 per cent of the respondents satisfied with the services of vaccination and deworming and deticking (89.17%), but 48.33 per cent were not satisfied with the animal health camps organized by the agencies.

6.4.2 Curative

The perception of farmers towards medical diagnosis and treatment , first aid in terms of satisfaction was about 54 per cent, while 45.83 per cent of the same expressed dissatisfaction towards surgical (major & minor) diagnosis and treatment 55 ,45.83 and 53.33 per cent of the respondents were unable to decide on gynecological diagnosis treatment ,supply of drugs and disease outbreak control measures rendered by the agencies.

6.4.3 Extension

Majority of about 51 and 62 per cent of the respondents were satisfied with the advisory services and minikit distribution by the agencies, while 53 and 46 per cent of the respondents were dissatisfied with the conducting of training programmes and follow up services.

6.4.4 OTHER SERVICES

The perception towards the service of PM inspection , issue of health certificate indicated satisfaction of 54.17 per cent of the respondents, while a majority of 80.83 per cent of the respondents could not decide on the perception of service of issuing insurance certificates. Dissatisfaction of service of disaster management was expressed among 85 per cent of the respondents.

6.5 IMPLICATIONS OF THE STUDY

Based on the findings of the study and informal discussions held with the cross section of the respondents representing farmers the following recommendations are made for quality of services.

1. The findings of the study indicated that majority of the farmers had low to medium profile. Hence, efforts should be undertaken by the extension agencies so as to improve the personal and socio-economic status of the farmers.
2. The developmental agencies mainly government sector (AH Department ,APLD agency, Veterinary college (SVVU)) should make efforts in bringing about awareness of important animal health delivery services and look after the services rendered to the farmers.
3. Majority of the farmers expressed their view on the budget as low provided for veterinary services. So necessary action to be taken in this regard that cost efficient services should be rendered.
4. As most of the farmers observed that veterinary surgical diagnostic facilities in rural areas were inadequate , so necessary steps to be taken in setting up of diagnostic centers in the villages which in turn provide better animal health care.
5. The study brought out that there is lack of continuous supply of drugs and other gynaecological and surgical inputs and man power in the veterinary hospitals. Hence agencies have to take necessary measures to have year round supply of drugs and inputs in veterinary hospitals.
6. As it is observed in the study that existing veterinary staff is not sufficient for the entire livestock population, agencies should make efforts to increase needed veterinary man power.
7. Agencies are advised to give necessary training programmes to the educated farmers in preventive health care services.

Therefore the agencies have to organize training programmes on curative (surgical) and other important services rendered to the farmers and to officials to update their knowledge regarding new animal husbandry technologies

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APPENDIX

COLLEGE OF VETERINARY SCIENCE
DEPARTMENT OF VETERINARY & A.H EXTENSION
RAJENDRANAGAR

ANIMAL HEALTH DELIVERY SERVICES – A STUDY IN KRISHNA DISTRICT

INTERVIEW SCHEDULE

Name of the investigator : **K.vijay prakash** Date:

PART-A

[For Officials]

I.AGENCIES INVOLVED IN ANIMAL HEALTH DELIVERYSERVICES (AHDS).

		INVOLVED	NOT INVOLVED
A)	Agencies Under Government sector		
	1) Animal Husbandry Dept (AHD)		
	2) A.P Livestock Development Agency (APLDA)		
	3) Municipal Corporation		
	4) Vety. College - SVVU		
	5) Others		
B)	Agencies under Private sector		
	1) Private Vety Clinicians		
	2) Pharmaceutical Companies		
	3) Private Dairies		
	4) Feed Manufacturers		
	5) Others		
C)	Agencies under Co-operative sector		
	1) APDDCF		
	2) Sheep Breeders Co-operative federation		
	3)Others		
D)	Non- Government Organisations (NGOs)		
	1) Lions club		
	2) Rotary club		
	3) Satya sai seva samithi		
	4) Sri Rama Krishna mission		
	5)Any other		

PART –B

[For Farmers]

1. Name of the farmer :

2. Village :

3. Mandal :

4. Age :

5. Livestock farming experience :

6. Socio- economic status (SES) :

a) Occupation

1) Non- Occupation
2) Unskilled
3) Semiskilled
4) Farming/Business
5) Professional

b) Land Holding

1) Landless
2) Marginal
3) Small
4) Large

c) Caste

1) SC
2) ST
3) Others/General

4) Minorities

d) Education

1) Illiterate
2) Functionally Illiterate
3) Primary School
4) Mid School
5) High School
6) College Education

e) Socio- Political-Participation

1) Without Any Official Position in socio-political organization)
2) Official Position in any one organization
3) Official in Social & Political Committee
4) Financial Contribution/
5) Actual Office Bearer
6) Involved in Community Work

F) Material Possession

1) Duster
2) Sprayer
3) Electric Motor
4) Wooden Plough
5) Cycle
6) Motor cycle
7) Tractor

8) Television

9) Agricultural implements

G) House

1) Thatched House
2) Mudwall & Thatched
3) Brick Wall
4) Concrete
5) Concrete & Double Storied

H) Family Size

1) Small [1-3]
2) Medium [4-6]
3) Large [7-9]
4) Very Large [>9]

7) Herd Size :

1. Cattle No

a) Cows
b) Bulls/Bullocks
c) Calves/Heifers

2. Crossbred cattle No

a) Cross breed cows
b) Bulls/Bullocks
c) Calves/Heifers

3. Buffaloes No

b) She buffaloes
c) He buffaloes

d) Calves/Heifers

4. Sheep No

a) Males

b) Females

5. Goat No

a) Males

b) Females

7) Information seeking behaviour

		DEGREE OF CONTACT			
S.NO	**INFORMATION SOURCE**	**Frequently**	**Occasionally**	**Rarely**	**Never**
1.	Informal Sources				
	a) Family members				
	b) Neighbors				
	c) Friends/Relatives				
	d) Progressive farmers				
2.	Formal Sources				
	a) Veterinary Assistant Surgeon				
	b)Veterinary Assistant				
	c) Scientists of SVVU				
	d) Sarpanch				
	e)VDO				
	f) Gopala mitra worker				
	g) Salesmen				
	h)Bank Officials				
	i) Milk procurement Supervisor				
3.	Mass Media				
	a) Radio				
	b) Television				
	c) News papers				
	d) Farm magazines				
	e) Others				

9) AWARENESS & TYPES OF SERVICES PROVIDED BY THE VARIOUS AGENCIES

Following are some statements that represent types of services provided by the various agencies. Please indicate whether you are Aware or Not Aware and whether provision available as Provided or Not provided about each statement.

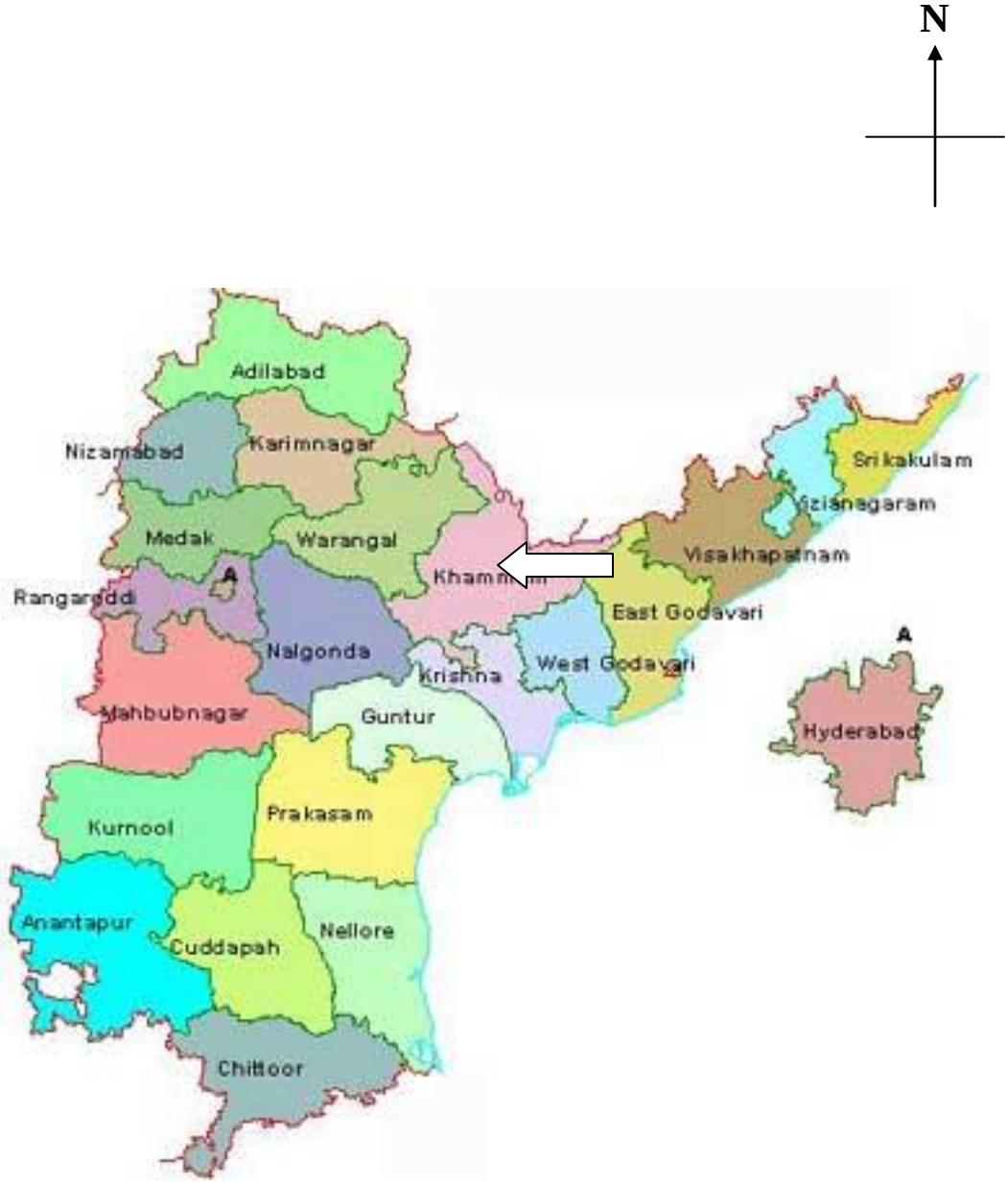
		Aware/Not Aware	Provided/Not provided
a)	Preventive health care services		
	1) Disease survivellance		
	2) Sanitation & Disinfection		
	3) Vaccination		
	4) Deworming		
	5) Deticking		
b)	Curative		
	1) Disease Diagnosis & Treatment		
	a) Medical		
	b) Gynecological		
	c) Surgical Major & Minor		
	2) Supply of medicines & drugs		
	3) First aid		
	4) Attending disease outbreak		
c)	Extension		
	1) Advisory services		
	2) Training programmes		
	3) Follow up services		
	4) Fodder kit Distribution		
d)	Other services		
	1) PM Inspection		
	2) Issue of Insurance certificates		
	3) Health certificates		
	4) Disaster management		
	5) Any other		

10) PERCEPTION OF THE FARMERS ON ANIMAL HEALTH DELIVERY SERVICES (AHDS)

A set statements given below this represents perception of the farmers on the animal health delivery services. Please state the degree of your 'Satisfied' or 'Unsatisfied' whether you are 'Undecided'.

		Satisfied	Unsatisfied	Undecided
a)	Preventive health care services			
	1) Disease survivellance			
	2) Sanitation & Disinfection			
	3) Vaccination			
	4) Deworming			
	5) Deticking			
b)	Curative			
	1) Disease Diagnosis & Treatment			
	a) Medical			
	b) Gynecological			
	c) Surgical			
	Major & Minor			
	2) Supply of medicines & drugs			
	3) First aid			
	4) Attending disease outbreak			
c)	Extension			
	1) Advisory services			
	2) Training programmes			
	3) Follow up services			
	4) Fodder kit Distribution			
d)	Other services			
	1) PM Inspection			
	2) Issue of Insurance certificates			
	3) Health certificates			
	4) Disaster management			
	5) Any other			

MAP OF ANDHRA PRADESH STATE SHOWING SELECTED DISTRICT



MAP OF KRISHNA DISTRICT SHOWING SELECTED MANDALS