

POLICY NOTE 2009-10
ANIMAL HUSBANDRY DEPARTMENT
DEMAND NO. 6

INTRODUCTION

Livestock plays a major role in the rural economy of the state. More than 70 % of rural people depend upon Animal Husbandry activity for their daily income and livestock rearing is the way of life in rural areas in the state. Hence, Animal Husbandry forms the backbone of rural economy especially when there is failure of monsoon.

The State Government gives top priority for poverty alleviation and creation of Self Employment opportunities to the rural masses. Both the goals are taken care of by the Animal Husbandry activities in villages. Moreover, growing human population, rapid urbanization, increasing domestic income and changing lifestyles of the people have led to high demand for livestock products.

With a vision of meeting out the increased demand of livestock products like milk, eggs, meat, wool and sustaining the human health, the Animal Husbandry Department has chalked out many programmes in the state. The development of Animal Husbandry sector includes Production by means of effective Animal breeding and Protection by means of Veterinary health. If the animals are healthy, the breeding and the consequent production will be steady.

For effective breeding, scientific breeding technique and "new breeding policy" are adopted in the department. Besides, the department manages livestock farms (cattle, buffaloes, sheep, goats, pigs and poultry) as models of "organised farming industry" while simultaneously providing the germplasm and seed for animal breeding in the field. The fodder development is another activity of animal husbandry sector, which is also undertaken parallel to the livestock breeding, in order to provide balanced nutrition to the livestock for increasing the production and reproduction.

In order to improve the quality of veterinary services, the department has taken steps to fill up all existing vacancies. The department has appointed 207 Veterinary Assistant Surgeons and 38 Research Assistants during this year (2008-09), thereby ensuring the availability of Veterinarians to provide better services to livestock and farmers. In addition, 20 Animal Diseases Intelligence Units spread over the state systematically monitor the prevalence of diseases, identify the pathogens and take immediate steps to control and contain them.

The efforts of Animal Husbandry Department are well known by its contribution to the general economy of our state in terms of livestock products. During 2007–08, the gross value of output of livestock in the state was Rs.11652.14 crores. The contribution of livestock sector to the Gross State Domestic Product is 2.88 % and to the agriculture and allied activities it is 25.70 %. The estimated milk and egg production in the state was 55.86 lakhs MT and 8,394 millions respectively. Likewise, the per capita availability of milk/day and eggs/annum was 233 gms and 128 nos. respectively. The value of leather and leather products exported from Tamil Nadu was Rs.5373.088 crores accounting for 38.38 % of the All India exports. The state contributes 5.3 % of total milk production, 15.7 % of total egg production and 15.5 % of total meat production and stands 9th in milk production, 2nd in egg and meat production in the country.

Livestock production has been steadily growing, faster than any other agricultural sub-sector, and it is foreseen by 2020, that livestock will account for more than half of total global agricultural output in economic terms. Further, to reach the growth rate of 4 % in the agriculture sector as envisaged in the XI plan, the growth in livestock sector becomes more essential.

AIMS OF THE DEPARTMENT

- ▶▶ Augmenting the production potentialities of livestock and poultry and thus increasing the production of milk, egg and meat.
- ▶▶ Providing necessary and timely modern veterinary assistance and health cover to the livestock and poultry.
- ▶▶ Implementing various central and state Government schemes for the upliftment of rural poor.
- ▶▶ Providing information and training on basic and latest animal husbandry practices.
- ▶▶ Protecting human health by preventing major zoonotic diseases of animals.

GENERAL ADMINISTRATION

The Animal Husbandry Department is functioning under the overall control of the Commissioner of Animal Husbandry and Veterinary Services. The Commissioner is assisted by 3 Additional Directors and one Joint Director. The state is divided into 25 regions, each headed by a Regional Joint Director and 65 administrative divisions, each headed by an Assistant Director.

An officer in the cadre of Additional Director is officiating as Director of the Institute of Veterinary Preventive Medicine (IVPM), Ranipet, which is engaged in the production of various kinds of livestock and poultry vaccines and other biologicals. One Central Referral

Laboratory for diagnosis, confirmation and monitoring Animal Diseases is functioning at Chennai. The Central Referral Laboratory also coordinates the work of 20 Animal Disease Intelligence Units headed by Assistant Directors functioning in various districts of the state. The Department also manages 8 Livestock Farms, 3 Sheep Farms, 1 Poultry Farm, 20 Cattle Breeding and Fodder Development Units and 2 Poultry Disease Diagnostic Laboratories.

During 2008-09, the following measures have been taken to improve the administration in the Department:

- To strengthen the functioning of the Animal Husbandry Department, 207 Veterinary Assistant Surgeons and 38 Research Assistants have been newly appointed.
- In the first phase, 444 Grade-I Veterinary Sub-centres have been converted into upgraded Veterinary Sub-centres. The Government have also created the posts of 444 Junior Veterinary Assistant Surgeons and they are being recruited through TNPSC. As soon as TNPSC gives the selection list, postings will be given to the newly recruited Junior Veterinary Assistant Surgeons in the upgraded Veterinary Sub-centres.
- For appointment of 1,317 Animal Husbandry Assistants, 705 have been appointed through Employment exchange and 38 have been appointed on compassionate grounds. 121 casual labourers were brought under regular establishment as Animal Husbandry Assistants. Further, 20 Animal Husbandry Assistants will be appointed on compassionate grounds. The remaining will be appointed subsequently.
- A total of 25 technical staff including 15 Assistant Directors, 9 Deputy Directors and 1 Joint Director were promoted. In addition to this, 20 para technical staff, 34 ministerial staff and 9 other staff were also promoted.
- A total of 32 personnel including 4 Junior Assistants, 2 Record clerks, 14 Laboratory Attenders, 10 Drivers and 2 Electricians have been newly appointed.
- Government have permitted to recruit and train 425 individuals and post them as Livestock Inspectors Grade-II and so far 106 individuals have been posted. Training for 222 individuals is under progress in sheep farm at Mukuntharayapuram (116) and Orathanad District Livestock Farm (106).
- 783 Technical/Veterinary officials have been provided capacity building training at various institutions.

FEED AND FODDER

Adequate feed and fodder without denaturing its nutritive value is the main factor for increasing the performance of milch animals. The economic viability livestock farming depends upon the feed and fodder cost which accounts for 65-70 % of the production cost. Dry fodder, green fodder and feed concentrates are the three important categories of feed items, of which dry fodder forms the largest single share. The total area available for

permanent pasture is 1.10 lakhs hectares. Traditionally, the villagers were grazing the local animals in tank lands and available grazing lands. For an indigenous dairy cow producing a very limited quantity of milk, this method of providing green fodder was found to be adequate and economical. However, with the production of large number of crossbred cows and graded she buffaloes capable of high milk yield, the available fodder will be inadequate and feeding of dairy animals exclusively with concentrate feed will be uneconomical. Hence, cultivation of fodder is imperative.

**FODDER STATUS IN THE STATE
DURING 2008- 09**

	Dry fodder (Lakhs MT)	Green fodder (lakhs MT)
Requirement	166.80	500.52
Availability	171.159	394.151
Short fall	Sufficient during normal season	106.369
%age Shortfall	Nil	21.25

Based on 2004 livestock census, the deficit of green fodder in the year 2008-09 has been worked out as 21.25 % to total demand. Keeping this in view, the Department of Animal Husbandry has been carrying out fodder development work under various schemes.

To avoid degradation and depletion of grazing land by using it indiscriminately for other purposes, the Government have ordered not to transfer the grazing land for other purposes unless alternate land of the same extent is developed as grazing land in the same district or nearby districts.

To enable the landless families and poor farmers to take up animal husbandry activities, establishment of community feed and fodder banks with the help of Self-Help Groups is being encouraged.

Cultivation of perennial high yielding fodder grass varieties like Cumbu-Napier, Co3, Co4, Kolukkattai grass, Para grass and Guinea grass etc., are being encouraged. Cultivation of Cowpea, Stylosanthus and Cumbu-Napier grass in coconut field as inter crop is also being encouraged.

Distribution of fodder seed minikits at free of cost is also undertaken. During Kharif and Rabi 2008-09, 10,000 and 7,855 minikits of fodder seeds of different crops respectively have been distributed to farmers.

Distribution of fodder seed minikits:

Year	Khariff	Rabi	Total
2006-07	11,000	21,400	32,400
2007-08	8,546	10,500	19,046
2008-09	10,000	7,855	17,855

The department has fodder seed, slips and tree seedling production units in Padappai seed Farm and District Livestock Farms, Hosur, Chettinadu, Abishekapatti, Eachenkottai, Chinnasalem and Udhagamandalam. Fodder slips are supplied to the interested farmers from these Departmental Farms for augmenting fodder production. During 2008-09, 63.55 lakhs of fodder slips, 0.224 MT of fodder seeds and 0.035 lakh of tree seedlings were distributed to farmers.

Green fodder should be fed throughout the year not only to maintain milk production but also for improving the conception rate. To meet out this green fodder shortage, during 2008-09, 1898 hectares of land under Tamil Nadu Irrigated Agricultural Modernisation and Water-bodies Restoration and Management project (TN IAMWARM) have been developed with fodder crops in 9 sub-basins (I phase) and 15 sub-basins (II phase) and for 2009-10, 2,400 hectares of private land to be brought under fodder cultivation by providing fodder inputs in 14 sub-basins (III phase) . Besides, in the year 2008-09, 60 demos on Azolla cultivation has been conducted and Azolla inputs has been provided to 600 farmers. During 2009-10, it is planned to conduct 50 demos on Azolla cultivation besides providing Azolla inputs to 500 farmers at free of cost.

Under National Agricultural Development Project (NADP), it is proposed to take up fodder crop cultivation in the District Livestock Farms in an area of 2709 acres and 2540 acres of farmers' land by which it is expected that 2.11 lakhs MT of the fodder and 2470 lakhs number of fodder slips will be produced and distributed to farmers.

LIVESTOCK DEVELOPMENT

Livestock and poultry population

Livestock census is conducted once in five years throughout India by Government of India to assess total number of Livestock, Poultry, Fisheries and Agricultural Equipments. Tamil Nadu is endowed with adequate number of livestock and poultry. The state accounts for about 5.07 % and 18 % of livestock and poultry population of the country respectively.

Of the total livestock, the livestock owned by scheduled castes, scheduled tribes and others are 65.53 lakhs, 8.93 lakhs and 174.95 lakhs respectively. Likewise, the poultry

owned by scheduled castes, scheduled tribes and others are 345.40 lakhs, 7.23 lakhs and 513.28 lakhs respectively.

LIVESTOCK FARMS

There are 11 livestock farms, out of which 3 are sheep farms. In addition, there is one farm exclusively meant for breeding poultry. The farms are maintained for selective scientific breeding of specific species of livestock and serve as demonstration farms and training centres for farmers. Moreover, they function as a source for quality livestock to the farmers.

NEW FARM POLICY

The Government of Tamil Nadu has evolved a new farm policy for maintaining breeds of livestock at the 11 District Livestock Farms, land development and fodder cultivation on wider areas in the farms. For this, it is proposed to propagate the livestock breeds at their native tracts, restricting the number of breeds to one or maximum of two in each farm depending on its location so as to avoid genetic mismatch and to maintain the purity of the germplasm.

The local and growing demand in the livestock market will be considered for the purpose and emphasis will be given to produce and sell as many animals as possible for breeding especially the males to the farmers through the State Livestock Farms. It is also proposed to take up land development by utilizing the area available in the farms for fodder cultivation to demonstrate the technology, convince farmers on such alternate crop patterns for their land to augment profitability, supply the required slips and seeds to improve the quality and quantity of fodder supply in the state.

According to new farm policy, the following are the livestock breeds that will be maintained in the department farms.

Sl. No	Name of the Farm	Species to be maintained
1	Exotic Cattle Breeding Farm, Eachenkottai (Thanjavur district)	Cattle - Jersey, Cross bred Jersey, Umbalachery, & Murrah
2	District Livestock Farm, Hosur (Krishnagiri district)	Cattle - Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Red Sindhi, Kangeyam Sheep - Mecheri, Trichy Black, Goat - Kodi aadu, Tellicheri Pig - Large White Yorkshire Poultry - Giriraja, Aseel, White leghorn, Turkey Horse - Kathiawar, Thorough bred

Sl. No	Name of the Farm	Species to be maintained
3	District Livestock Farm, Abishekapatti (Tirunelveli district)	Cattle - Cross bred Jersey, Sahiwal Sheep - Kilakaraisal Pigs - Large White Yorkshire, Landrace, Landrace Cross Poultry - Nandanam Colour broiler
4	District Livestock Farm, Udthagamandalam (The Nilgiris district)	Cattle - Jersey, Cross bred Jersey, Holstein Friesian, Holstein Friesian Cross
5	District Livestock Farm, Pudukottai (Pudukottai district)	Cattle - Jersey Cross, Sheep - Ramnad White, Goat - Jamunapari, Pig - Landrace
6	District Livestock Farm, Orathanad (Thanjavur district)	Buffalo - Murrah Pig - Large White Yorkshire
7	District Livestock Farm, Chettinad (Sivagangai district)	Cattle - Jersey Cross, Tharparkar, Sheep - Ramnad White Goat - Jamunapari Pig - Large White Yorkshire
8	Livestock Farm, Korukkai (Thiruvavarur district)	Cattle - Umbalachery
9	Sheep Farm, Chinnasalem (Villupuram district)	Sheep - Mecheri, Madras Red, Goat - Tellicheri, Salem Black,
10	Sheep Farm, Mukundarayapuram (Vellore district)	Sheep - Madras Red
11	Sheep Farm, Sathur (Virudhunagar district)	Sheep - Vembur Goat - Kanni
12	Poultry Farm, Kattupakkam, (Kancheepuram district)	Poultry - Nandanam colour chicken / CARI Nirbheek, Nandanam Turkey - I

CATTLE DEVELOPMENT

The total cattle population of 91.41 lakhs accounts for 36.65 % of total livestock in the state. Cattle comprise 84.64 % of the total bovines reared in the state. The exotic, crossbred, indigenous and native pure accounts for 0.44 %, 55.79 %, 6.01 % and 37.76 % respectively.

Non-descript animals have a higher age at first calving, low lactation period, low milk yield, lengthy dry and inter-calving periods, but they are highly disease resistant and heat tolerant. The exotic breeds have early maturity, lengthy lactation period, high milk yield, short dry and inter-calving periods but they are less disease resistant and heat tolerant. To improve the economic traits of the local animals and also to preserve the desirable traits like disease resistance and heat tolerance of indigenous animals in a short time at an affordable cost, cross breeding is an effective solution. Native pure breeds like, Kangeyam and Umbalachery germplasm have inherent capacity to withstand tropical environmental stress and diseases, have genes for better feed conversion efficiency and are well adapted to local environment.

NEW BREEDING POLICY

The Department is following the revised breeding policy for cattle to improve the milk production in livestock and to sustain financial growth in the dairy sector:

District wise frozen semen straws used for Artificial Insemination are as follows:

S. No	Districts	Breeds	S. No	Districts	Breeds
1	Chennai	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,	6	Erode	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Holstein Friesian,
2	Coimbatore	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, ,Holstein Friesian,	7	Kancheepuram	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
3	Cuddalore	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,	8	Kanyakumari	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Holstein Friesian
4	Dharmapuri	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Holstein Friesian	9	Karur	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Holstein Friesian
5	Dindigul	Cross bred Jersey, Crossbred Holstein Friesian, Jersey, Holstein Friesian,	10	Krishnagiri	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
11	Madurai	Cross bred Jersey, Crossbred Holstein Friesian, Jersey	21	Theni	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
12	Nagapattinam	Cross bred Jersey, Crossbred Holstein Friesian, Jersey , Umbalachery	22	Tiruchirapalli	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
13	Namakkal	Cross bred Jersey, Crossbred Holstein Friesian, Jersey	23	Tirunelveli	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
14	Perambalur	Cross bred Jersey, Crossbred Holstein Friesian, Jersey	24	Thiruvallur	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
15	Pudukottai	Cross bred Jersey, Crossbred Holstein Friesian, Jersey	25	Thiruvannamalai	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,
16	Ramanathapuram	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,	26	Thiruvarur	Cross bred Jersey, Crossbred Holstein Friesian, Jersey , Umbalachery
17	Salem	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,	27	Thoothukudi	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
18	Sivagangai	Cross bred Jersey, Crossbred Holstein Friesian, Jersey ,	28	Vellore	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
19	Thanjavur	Cross bred Jersey, Crossbred Holstein Friesian, Jersey , Umbalachery	29	Villupuram	Cross bred Jersey, Crossbred Holstein Friesian, Jersey
20	The Nilgiris	Cross bred Jersey, Crossbred Holstein Friesian, Jersey , Holstein Friesian	30	Virudhunagar	Cross bred Jersey, Crossbred Holstein Friesian, Jersey

- ❖ Selective breeding of native breeds is to be followed in Erode, Coimbatore, Karur and Dindigul districts for Kangeyam and in Nagapattinam, Thiruvarur and Thanjavur for Umbalachery and for lesser known breeds like Pulikulam, Bargur, Alambadi and Malaimadu in their respective breeding tracts.
- ❖ Crossing of low yielding non- descript cows with Jersey or Holstein Friesian depending on the agro-climatic conditions. In addition to the use of purebred Jersey, high pedigreed Indian milch breeds Red Sindhi and Tharparkar may also be used. Likewise, Sahiwal breeds may be used in place of Holstein Friesian.
- ❖ Jersey crosses are to be bred with bulls of 50 % Jersey inheritance and Holstein Friesian crosses are to be bred with bulls of 50 % Holstein Friesian inheritance by *inter se* mating.

BUFFALO DEVELOPMENT

Buffalo comprises 15.36 % of the total bovine population and 7 % of the total livestock in the state. The department is following the revised new breeding policy for buffalo with the following recommendations:

- Upgrading of Non-descript and Graded buffaloes with Murrah.
- Pure breeding of Toda buffaloes in the high ranges of the Nilgiris.

Artificial Insemination

Dissemination of superior milk production traits is the key for productive enhancement of the dairy animal. For this, artificial insemination is a proven technology, since this can horizontally disseminate superior genetic resources.

Animal Husbandry Department is now procuring high quality Frozen Semen straws with high yielding germplasm through Tamil Nadu Livestock Development Agency (TNLDA) to improve the milk production potential of breedable animals and for faster multiplication of genetically superior milk production traits in the state. During this year, to improve the milk production in low milk yielding districts, for the first time, the department procured A1 grade and ISO certified improved 12.30 lakhs high yielding straws and they are being distributed to low milk yielding districts namely Villupuram, Ariyalur, Perambalur, Nagapattinam, Thanjavur, Thiruvarur, Pudukottai, Ramanathapuram, Sivagangai, Virudhunagar, Tirunelveli and Thoothukudi.

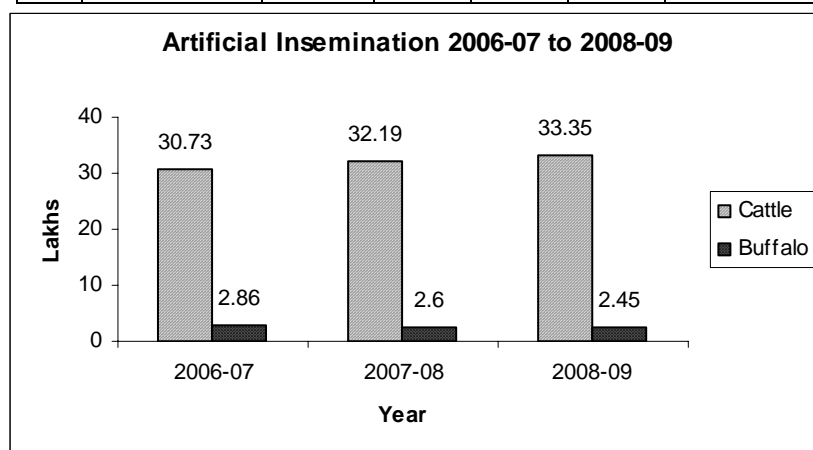
Artificial insemination is being carried out at 3,258 Artificial Insemination centres functioning in the state. Apart from the above institutions, this work is also being carried out in the camps organized for this purpose, " Kalnadai Padhukappu Thittam " camps and in

remote villages, through mobile veterinary units and by private artificial insemination workers trained by Tamil Nadu Livestock Development Agency.

During 2008-09, 35.80 lakhs of artificial inseminations were done and it is proposed to carry out 37.15 lakhs artificial insemination during 2009-10.

Year wise Artificial Insemination particulars are as follows:

S. No	Workdone	Breed	(In lakhs)			
			2006-07	2007-08	2008-09	2009-10 Proposed Target
1	Artificial Insemination	Cattle	30.73	32.19	33.35	34.25
		Buffalo	2.86	2.60	2.45	2.90
		Total	33.59	34.79	35.80	37.15



Frozen Semen Production

Three frozen semen production stations are functioning in the following places to cater to the needs of the 3,258 artificial insemination centres located throughout the state.

- ➔ Exotic Cattle Breeding Farm, Eachenkottai in Thanjavur District.
- ➔ District Livestock Farm, Hosur in Krishnagiri District.
- ➔ District Livestock Farm, Udagamandalam in The Nilgiris District.

A total number of 152 breeding bulls of Jersey, Holstein Friesian, Sindhi, Crossbred, Kangeyam and Murrah are stationed in these Farms. Mini straws are produced in all the frozen semen production stations. During 2008-09, 34 bulls were purchased and 424 breeding bulls which were not upto the minimum standard protocol were culled to improve the quality of the frozen semen straws produced in the above farms. Action is being taken to upgrade these farms to ISO standards.

**Breeding Bulls maintained in the
Frozen Semen Stations**

SI No.	Name of the Farm	Jersey	HF	Jersey Cross	HF Cross	Red Sindhi	Kangayam	Murrah	Total
1	Exotic Cattle Breeding Farm, Eachenkottai	0	0	22	0	0	0	48	70
2	District Livestock Farm, Hosur	0	0	15	8	12	9	0	44
3	District Livestock Farm, Udhagamandalam	20	8	4	6	0	0	0	38
	Total	20	8	41	14	12	9	48	152

During 2008-09, 28.32 lakhs frozen semen straws were produced in the above frozen semen production stations.

**Frozen Semen Production
Centrewise Semen Production During
2008-09 and Target for 2009-10**

(In lakhs)

SI. No	Frozen Semen Station	Production 2008-09	Proposed target 2009-10
1	Exotic Cattle Breeding Farm, Eachenkottai	11.43	11.30
2	District Livestock Farm, Hosur	10.01	9.40
3	District Livestock Farm, Udhagamandalam	6.88	7.70
	Total	28.32	28.40

LIQUID NITROGEN PRODUCTION AND SUPPLY

To freeze and store the frozen semen straws, liquid nitrogen is essential. Liquid nitrogen production plants are functioning at Eachenkottai, Tirunelveli, Hosur, Udhagamandalam, Saidapet and Thiruparankundram. 12 Frozen Semen Banks are functioning one each at Vellore, Coimbatore, Madurai, Tiruchirapalli, Dharmapuri, Tirunelveli, Thanjavur, Cuddalore, Sivagangai, Chennai, Dindigul and Salem to store and distribute liquid nitrogen and frozen semen straws to various veterinary institutions and sub centres involved in artificial insemination.

In order to regulate the artificial insemination work, 10 numbers of Silo tanks (3,000 to 3,500 Lit. capacity) and 3,880 numbers of Liquid Nitrogen containers of various capacities were purchased through TNLDA during 2008-09.

During 2008-09, 1.59 lakhs litres of liquid nitrogen was produced in the above plants.

**Plantwise Liquid Nitrogen Production
During 2008-09 and target for 2009-10**

(In lakhs)

Sl. No	Liquid Nitrogen Plants	No. of Plants	Production 2008-09	Proposed target 2009-10
1	Exotic Cattle Breeding Farm, Eachenkottai	2	0.68	0.85
2	District Livestock Farm, Hosur	1	0.64	0.85
3	District Livestock Farm, Udhagamandalam	1	0.05	0.30
4	Saidapet	1	0.16	0.30
5	Thiruparankundram	1	0.06	0.30
	Total	6	1.59	2.60

CONSERVATION OF NATIVE BREEDS

Kangayam



Pulikulam



Burgur



Umblachery



Toda



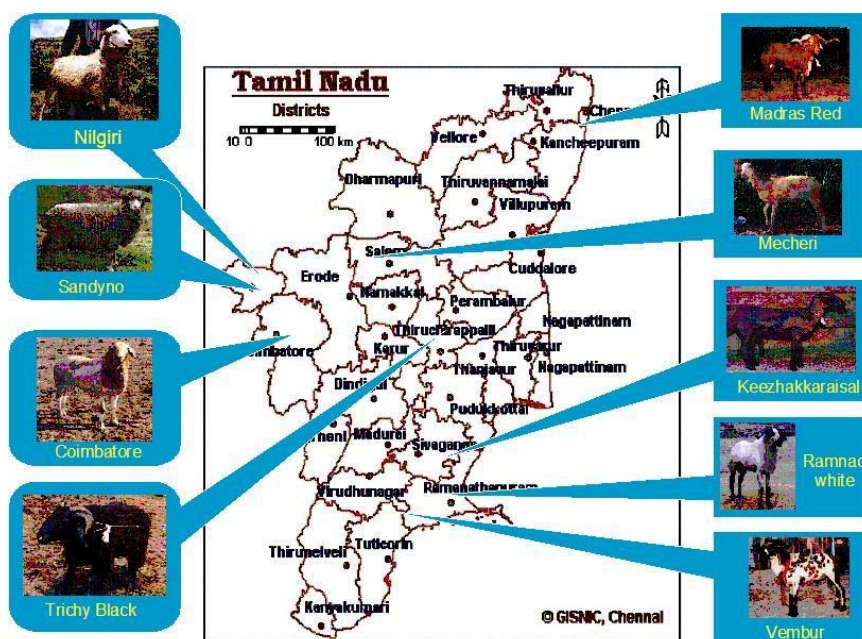
Tamil Nadu is known for its native breeds like Kangayam, Umblachery, Burghur, Pulikulam, Alambadi cattle and Toda buffalo. In the departmental farms, 293 Kangayam and 238 Umblachery animals are being maintained.

For the conservation of Bargur, Alambadi and Pulikulam native breeds, a pilot survey was conducted, physical measurements were taken, blood samples were collected and molecular characterization was carried out in their respective breeding tracts. This has been initiated by the Tamil Nadu Livestock Development Agency (TNLDA) with the co-ordination of Department of Animal Breeding and Genetics, Tamil Nadu Veterinary and Animal Sciences University at a cost of Rs.9.50 lakhs.

According to the Revised Breeding Policy, Selective breeding of native breeds is to be followed, where these animals are found true to type as in areas where the local breeders are willing and interested to conserve the native stock in Erode, Coimbatore, Karur and Dindigul districts for Kangeyam and in Nagapattinam, Thiruvarur and Thanjavur for Umblachery. For lesser known breeds like Pulikulam, Bargur, Alambadi and Malaimadu their respective breeding tracts has also been encouraged.

SHEEP AND GOAT DEVELOPMENT

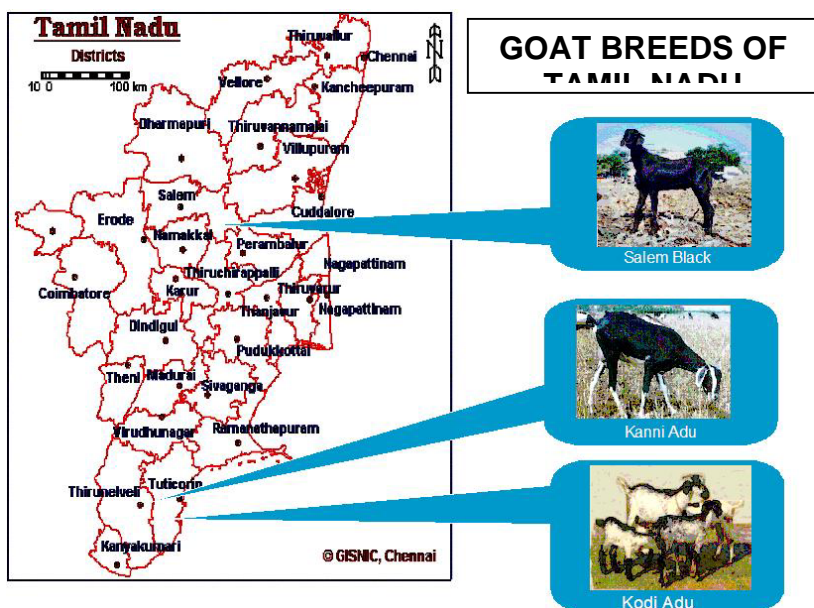
Sheep units are popular among village communities as a source of providing subsistence as an alternate to agriculture. Sheep comprises 41 % of the total ovine population in which crossbred and native pure account for 14 % and 86 % respectively. Out of total sheep population, 40 % of total sheep population is found in Erode, Tirunelveli, Salem, Virudhunagar, Vellore and Dharmapuri districts.



As per the New Farm Policy, the following breeds are to be maintained in the District Livestock Farms of the Department.

Sl. No	Farms	Breeds	
		Sheep	Goat
1	District Livestock Farm, Chettinad	Ramnad White	Jamunapari
2	District Livestock Farm, Pudukottai	Ramnad White	Jamunapari
3	District Livestock Farm, Hosur	Mecheri, Trichy black	Kodiyadu, Tellichery
4	Sheep Farm, Sathur	Vembur	Kanni
5	Sheep Farm, Chinnasalem	Mecheri, Chennai red	Tellichery, Salem black
6	Sheep Farm, Mukundarayapuram	Chennai red	-
7	District Livestock Farm, Abishekapatti	Killakaraisal	-

Quality rams and ewes produced in these farms are sold to local farmers to improve the progeny of local sheep and also for breeding purposes. As on 31.3.2009 a stock of 97 rams, 1427 ewes, 676 lambs are maintained in the above Farms. During 2008-09, 558 sheep were sold to the farmers.



43 % of the goat population is found in Erode, Trichirapalli, Salem, Virudhunagar, Vellore and Dharmapuri districts. The progeny of these goats are supplied to local farmers to upgrade the local goats. As on 31.03.2009, a stock of 24 bucks, 323 does, 143 kids are maintained in the above Farms. During 2008-09, 186 goats were sold to the farmers.

To provide better livelihood opportunities in rural areas under 2008-09 Part II Scheme, Sheep units, each comprising of 20 ewes and one ram, were provided to 23 Self Help Groups in the districts of Thoothukudi and Ramanathapuram. Each Self Help Group

consists of 15 motivated women members, who are interested in sheep rearing. The scheme was implemented with 50 % subsidy at a total cost of Rs.60.00 lakhs.

Since blue tongue disease is an emerging economic viral disease affecting sheep and is particularly prevalent in the southern districts of Tamil Nadu causing economic losses through mortality and morbidity of small ruminants in the past years, fogging machines were distributed at a total cost of Rs.15.00 lakhs to undertake the vector control operations in Tirunelveli, Thoothukudi, Madurai, Dindigul and Erode districts.

Under National Agricultural Development Programme (NADP), a sum of Rs.85.43 lakhs has been sanctioned to purchase 362 Sheep units with 50 % subsidy for the development of small ruminants in the state.

Genetic upgradation of goats by artificial insemination in collaboration with Tamil Nadu Veterinary and Animal Sciences University in two districts has been taken up at a total cost of Rs.2.00 lakhs. For this purpose, beneficiaries were identified in Thoothukudi and Vellore districts. 10 Veterinary Assistant Surgeons have been trained in Tamil Nadu Veterinary and Animal Sciences University for implementation of the project.

Intensive Health Cover

To overcome parasitic infestations in sheep and goat, the department is implementing an Intensive Health Cover Programme since 1982-83. Since sheep and goats are reared mainly by open grazing, they are highly vulnerable to parasitic infestations. These infestations cause many health problems in them like weight loss, delayed maturity, high mortality rate, low fertility rate, etc. and predisposing them to other infections. This also affects the yield quality of meat and skin.

To overcome all these problems, sheep and goat have to be dewormed periodically. Under this programme, the sheep and goat maintained by poor farmers in all the districts except Chennai, The Nilgiris and Kanyakumari are dewormed periodically at free of cost. During 2008-09, a sum of Rs.40.00 lakhs was sanctioned and utilized for undertaking deworming of sheep and goat.

OTHER LIVESTOCK DEVELOPMENT

Piggery Development:

To satisfy the considerable demand that exists for pork and pork products, this department is encouraging pig rearing. Even though pig farming was not practised on scientific lines during the early years, it has now picked up in recent years. It provides self-employment, improved nutrition and additional income. Large White Yorkshire pigs are bred in the District Livestock Farms, at Orathanad, Hosur, Abishekapatti, Chettinad and

Pudukottai. As on 31.03.2009, 16 boars, 184 sows and 250 piglets are maintained in the above farms. During 2008-09, 692 pigs were sold in the farms. The piggery unit at District Livestock Farm, Tirunelveli is being strengthened at a cost of Rs.33.92 lakhs.

Horse Breeding:

A horse-breeding unit is functioning at District Livestock Farm, Hosur. To revive breeding and to conserve the equine species, Kathiawar and Thorough bred horses are bred in this unit. The stallions of Thorough bred and Kathiawar are allowed for natural service. At present, seven stallions, seven mares and nine young ones are maintained in this unit.

Dog Breeding:

To preserve native breeds such as Rajapalayam, Kombai and Chippiparai, a dog-breeding unit was started at Saidapet, Chennai during 1980-81. As there is a demand for other breeds like Labrador and Doberman, these breeds were added to this unit during the year 1997-98. Puppies are sold to the public who desire to rear them. At present, the following breeds are maintained in this unit.

Sl. No	Breeds	Adult		Pups	
		Male	Female	Male	Female
1	Rajapalayam	2	3	-	2
2	Chippiparai	1	1	-	-
3	Doberman	2	3	-	-
4	Labrador	2	1	-	-

POULTRY DEVELOPMENT

Poultry farming has undergone a transformation from being mere backyard unit to the present vibrant and dynamic commercial enterprise. Tamil Nadu has a poultry population of about 8.6 crores out of which the commercial poultry population is about 6.7 crores. About 840 crores eggs are produced by the state and approximately 108 crores eggs are exported. Out of the poultry meat production of 3.35 lakhs tonnes, about 600 tonnes are exported every year. There is a good potential for export of eggs, egg products and frozen chicken meat from our state to Gulf countries, Russia etc., Hence, as per the suggestions and format prescribed by Export Inspection Council of India, the department has issued a number of health certificates to commercial poultry farms thereby facilitating export of eggs.

To fulfill the long-standing demand, it is proposed to construct a Cold Storage Unit for storage of eggs at Namakkal at a cost of Rs.10.00 crores as a Joint Venture project under Public-Private Partnership. For this, the Government have accorded administrative sanction for Rs.1.00 crores as Government's equity to TIDCO and the work has been initiated by

TIDCO. The Tamil Nadu poultry Farmers' Association, Namakkal has handed over two acres of land at free of cost for construction of the above unit.

BACKYARD POULTRY DEVELOPMENT

Backyard Poultry rearing continues to be the livelihood of several poor farmers in the rural areas and contributes to 5% of the total egg production in the state. It has distinct advantages over other vocations, as the land requirement is small; returns are faster with little initial capital investment. Though the initial investment is minimum, the landless agricultural labourers find it very difficult even to invest this little amount. Hence, it is a potent tool for the economic upliftment of the rural poor. Besides income generation, rural backyard poultry provides nutrition supplement in the form of animal protein and empowers women. Hence, under Part II Scheme during 2008-09, a total of 29,700 units were provided to improve backyard poultry units to support 198 Self Help Groups of five districts viz, Dindigul, Pudukottai, Ramnathapuram, Sivagangai and Thoothukudi.

Since these birds are on free range, they are very susceptible to Ranikhet, a highly fatal viral disease. To protect the poultry from this disease, the department is providing vaccination on specified days at the veterinary institutions and subcentres every week. The department is also conducting a statewide vaccination programme against this disease during the month of February every year and in the camps conducted under "Kalnadai Padukappu Thittam". During 2008-09, 37.95 lakhs of poultry have been benefited by this special bi-weekly vaccination camps.

Turkey rearing

With the aim of creating awareness on turkey rearing as one of the profitable backyard businesses, to popularize it as rural farming and to create self-employment, the department is maintaining turkey units at Poultry Farm, Kattupakkam. The Government have sanctioned Rs. 68.00 lakhs to develop turkey units at Poultry Farm, Kattupakkam and a sum of Rs. 34.00 lakhs was released as I installment in 2008-09. At present, 217 turkeys are maintained in the above unit.

AVIAN INFLUENZA

Avian Influenza is a viral disease of birds, usually affecting the birds but rarely crosses the species barrier and affects human beings. Various types of the Avian Influenza virus has become pandemic and took toll of millions of human beings. Recently, H5N1 has been identified as highly pathogenic Avian Influenza and started affecting birds and man in Asia from 1996. Though Tamil Nadu is free from outbreak, being the state which has huge poultry population contributing 80% of the total export as poultry products, action is being taken on preparedness and surveillance works since 2006.

Surveillance works:

- Active surveillance works are carried out by Veterinary Assistant Surgeons visiting regularly the poultry farms in their jurisdiction for poultry health / mortality reporting.
- The bird sanctuaries are visited by Veterinarians in Animal Disease Intelligence Units assisted by Forest Department for the surveillance work in their jurisdiction.
- Targeted sera samples are collected from all districts and are regularly sent to Southern Regional Disease Diagnostic Laboratory, Bangalore through Central Referral Laboratory, Chennai for screening. So far, 25,000 samples have been tested.
- In case of unusual sickness and death in poultry, clinical samples are collected and sent to High Security Animal Disease Laboratory at Bhopal.
- Two Poultry Disease Diagnostic laboratories one at Andagalurgate (Namakkal) and another at Erode are being upgraded to BSL II at a cost of Rs.22 lakhs each in order to screen the poultry sera samples in our state itself.
- Government of India has sanctioned to establish Bio-Security Level IV Laboratory at Padappai near Chennai in Tami Nadu. 30 acres of land has been handed over to Government of India for setting up the laboratory. This is a prestigious project, required for the purpose of certifying Tamil Nadu as a zone free of Avian Influenza, in case of outbreaks of bird flu in other parts of the country, so as to facilitate uninterrupted export of eggs, chicks and their products.

Preparedness:

A State High Level Task Force, headed by Chief Secretary to Government of Tamil Nadu is monitoring the surveillance and preparedness of the state for tackling Avian Influenza.

During the year, number of meetings were conducted to discuss the preparedness, control and containment of Avian Influenza.

Sl. No	Details	No. of meetings/campaigns during this year
1	District level task force committee meetings headed by District Collectors	326
2	State level Collectors' meetings	2
3	Awareness campaigns for poultry farmers and public about Avian Influenza in poultry belt districts	3

The following materials were distributed to all the districts in the state:

Sl. No	Materials	Quantity supplied
1	Kits for District level officers (In no.)	100
2	Personal Protective Equipment kits for vaccinators (In no.)	10,000
3	Flame guns (In no.)	29
4	Foggers (In no.)	119
5	Personal Protective Equipment kits for cullers (In no.)	2,000
6	Vaccinator	475
7	Phenobarbitone Tablet (In lakhs)	15
8	Lime powder (In tonnes)	145
9	Disinfectants	500
10	Thermo cool boxes	60
11	Ice gel powder	500

- Three hundred Rapid Response Teams (RRT) have been formed in the state and adequately trained to combat any outbreak of Avian Influenza and prevent spread of the disease by culling of birds and disinfection.
- A state fund of Rs.50 lakhs have been kept in reserve for compensation for culling in case of emergency.
- A sum of Rs.85.33 lakhs has been allotted for training in preparedness, control and containment of Avian Influenza. So far, 1,422 Veterinarians, 843 Para veterinarians and 2,200 Animal Husbandry Assistants and other Departmental staff for RRT. Rs.7.67 lakhs has been sanctioned for training the villagers / farmers.

SCHEMES

Animal Husbandry provides the core livelihood of millions of people and is the mainstay of millions of small and marginal landowners and landless poor. The growth in human population, availability and cost of agricultural lands, limited water sources and introduction of better yielding livestock have led farmers to shift from agriculture to livestock rearing to earn their livelihood. With this in mind, the department is implementing various beneficiary oriented schemes for the economic upliftment and welfare of the poor and down trodden.

I. IMPORTANT STATE SPONSORED SCHEMES

1. Kalnadai Padukappu Thittam

To ensure providing of comprehensive animal health care at the doorstep of the farmers, a novel scheme "Kalnadai Padukappu Thittam" was inaugurated on 18.01.2000 by the Hon'ble Chief Minister Dr. Kalaingar at Thirukazhukundram in Kancheepuram district.

- Under this scheme, total health cover both preventive and curative is provided to livestock and poultry reared by farmers in remote villages, which do not have an access to veterinary services from veterinary institutions directly, by conducting special camps.
- On the day preceding the camp, wide publicity is given in the village and surrounding places informing the place where the camp is to be conducted. Pamphlets and leaflets are also distributed regarding the various assistance provided during the camp.
- Special camps are conducted at the rate of one camp per month in all the 385 Panchayat unions at a cost of Rs.5,000/- per camp.
- In these camps, various activities like health care, disease prevention, deworming, castration, artificial insemination, pregnancy verification, infertility treatment, etc. are carried out at free of cost. In the calf-rally, prizes worth of Rs.400/- per camp is being distributed to best calves.
- The above camps are conducted under the direct supervision of the divisional Assistant Directors and monitored by the concerned Regional Joint Directors. A team of veterinarians and para-veterinarians working in the Panchayat Union and nearby Panchayat unions are drafted for conducting the camps. The services of Tamil Nadu Veterinary and Animal Sciences University is also utilised in needy places.
- In addition, exhibitions depicting various livestock diseases and preventive measures, fodder development measures are conducted for creating awareness among the farmers.
- The beneficiaries are all animal growers in the villages and nearby villages where the camps are conducted. Since all the facilities are provided at the farmers' doorsteps at free of cost, this scheme is very popular among the rural farming community.
- During 2008-09, 5500 camps were conducted in which 64.03 lakhs livestock and poultry were provided veterinary health services against various animal diseases and

6.38 lakhs farmers were benefited. During 2009-10, it is proposed to conduct 5,500 camps at a cost of Rs.4,200/- per camp.

Kalnadai Padukappu Thittam (2006-07 to 2008-09)

Sl. No	Details	2006-07	2007-08	2008-09	2009-10 (Proposed)
a.	No. of camps conducted	2,695	5,500	5500	5500
b.	No. of animals benefited				
	Cattle	10,24,637	19,10,575	18,46,487	20,00,000
	Buffaloes	1,60,942	2,84,144	2,62,205	2,90,000
	Sheep	11,04,157	17,62,811	16,73,564	17,00,000
	Goats	10,51,245	17,58,353	16,69,387	18,00,000
	Other Livestock	21,130	41,749	42,857	50,000
	Poultry	3,82,361	9,42,307	9,08,631	10,00,000
	Total	37,44,472	66,99,939	64,03,131	68,40,000
c.	No. of farmers benefited	11,77,597	16,97,698	6,38,400	16,00,000
d.	Fund Utilized (In lakhs)	113.19	231.00	231.00	231.00
e.	Average animal attendance/camp	1,389	1,218	1,164	-
f.	Calf Rally (No. of calves participated)	49,001	2,31,854	1,42,698	-

2. Veterinary Infrastructure Development through Assistance from NABARD Rural Infrastructure Development Fund:

Infrastructure is the key to improve veterinary services, with a consequent increase in overall productivity, growth and rural development. With this objective, the infrastructure available with the department is being improved with assistance from NABARD Rural Infrastructure Development Fund.

RIDF X

The Government have accorded sanction for Rs.5,978.92 lakhs with assistance from NABARD Rural Infrastructure Development Fund X to improve the infrastructure in the Department, out of which Rs.4380.38 lakhs was apportioned for construction, Rs.1374.54 lakhs for purchase of equipment and Rs.224 lakhs for purchase of furniture. At present, 71 Veterinary Dispensaries, 10 Veterinary Hospitals, 9 Semen Banks, 23 Field Monitoring Units, 9 Disease Diagnostic Units, 82 Dressing sheds, 146 In-patient units and 17 X-ray blocks have been completed and the necessary equipments to all veterinary institutions and diagnostic centres of the department have been supplied to improve the efficiency of these

institutions. Besides, furniture were provided to 111 newly constructed veterinary institutions and disease diagnostic centres.

RIDF XI:

Government have accorded sanction for Rs.332.50 lakhs for construction of bull sheds at Hosur, Udthagamandalam and Eachenkottai, District Livestock Farms and quality control laboratories at Hosur and Udthagamandalam. The works are under progress.

RIDF XI

Sl. No	Place	Type of work	Sanctioned Amount (Rs.in lakhs)
1	District Livestock Farm, Hosur, Krishnagiri district	Bull shed	86.10
		Quality control lab	19.80
2	District Livestock Farm, Udthagamandalam, The Nilgiris district	Bull shed	116.00
		Quality control lab	24.50
3	Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur district	Bull shed	86.10

3. Hill Area Development Programme (HADP)

The Union Planning Commission, Government of India have sanctioned Rs. 39.50 lakhs for implementing schemes in Animal Husbandry sector under Hill Area Development Programme. The scheme is being implemented in the Nilgiris district since 1975.

- A sum of Rs.10.00 lakhs has been sanctioned for providing power fencing around District Livestock Farm, Udthagamandalam for a circumference of four kilometers.
- A sum of Rs.16.50 lakhs has been sanctioned to construct farmers' training centre at Veterinary Hospital, Udthagamandalam.
- A sum of Rs.1.00 lakhs has been sanctioned for augmenting fodder production at Veterinary Dispensary, Ketti.
- A sum of Rs.10.00 lakh has been sanctioned for construction of new building for veterinary dispensary at Thummanatty.
- A sum of Rs.2.00 lakhs has been sanctioned to maintain Animal Disease Free Zone in The Nilgiris for the 4th year.

4. Flood Relief Works

This department carried out the following relief works during floods.

- 5,086 livestock and 29,236 Poultry have perished during the “Cyclone Nisha” that lashed the state during 24.11.2008 to 03.12.2008. Compensation has been provided through the district administration. As a part of immediate relief measures in the affected districts, health care, and provision of dry and green fodder have been undertaken by the department.
- 4.10 lakhs doses of vaccine have been administered to the livestock in the flood affected districts of Cuddalore, Thiruvarur and Nagapattinam.
- 205.7 Metric tonnes of fodder was mobilized from Exotic Cattle Breeding Farm at Eachenkottai and supplied to livestock.
- 715 Veterinarians and Para veterinarians were deputed to undertake flood relief activities.
- By providing veterinary services, overall 6.435 lakhs livestock were benefited.

II. WORLD BANK ASSISTED PROJECTS

1. Tamil Nadu Irrigated Agricultural Modernization and Water-Bodies Restoration Management (TN IAMWARM PROJECT)

Animal Husbandry Department is one of the line departments involved in implementation of the World Bank assisted Tamil Nadu Irrigated Agricultural Modernisation and Water-bodies Restoration and Management Project. The project is being implemented in the state from 2007 to 2013 for a period of 6 years. The prime objective of the project is to increase income of the farmers by improving the utilization of each and every unit of water resource in agriculture and related activities. For animal husbandry component, World Bank has allotted Rs.3,938 lakhs for implementing various schemes in the 63 sub-basins during the project period.

The objectives of the Animal Husbandry Department in the project are:

- To improve the production potentialities of livestock in the sub-basins.
- To provide veterinary services and breeding support at the farmers' doorsteps or nearest to the farmers.
- To ensure total health cover both preventive and curative.
- To improve conception and calving rate in bovines.
- To reduce the gap between necessity and availability of green fodder.
- To improve the knowledge level of the farmers on best animal husbandry practices / techniques.

The interventions by the department in the sub-basins are:

- ❖ Establishment of Cluster Sub basin Veterinary Extension Units to provide veterinary services and breeding support to livestock reared by farmers in unserved areas by utilising the services of unemployed veterinary graduates.
- ❖ Improving the quality in delivery of veterinary services and diagnosis by strengthening the essential and needy infrastructure of veterinary institutions.
- ❖ Utilising the high-yielding frozen semen straws for artificial insemination.
- ❖ Increasing the availability of green fodder by bringing more area under fodder cultivation.
- ❖ Ensuring total health care and improving the conception rate by conducting Infertility cum total health care camps and distribution of mineral mixture.
- ❖ Improving the knowledge level of farmers on best animal husbandry practices / techniques through various mass communication and training programmes, propaganda and publicity methods.

During 2007-08, the project has been implemented in 9 sub-basins viz., Varahanadhi, Upper Vellar, South Vellar, Palar (Parambikulam Aliyar Project), Aliyar (Parambikulam Aliyar Project), Pambar, Arjunanadhi, Manimuthar and Kottakaraiyar at a cost of Rs.262.62 lakhs. During 2008-09, in addition to the above 9 sub-basins, 15 more sub-basins viz., Koundinyanadhi, Poiney, Swethanadhi, Chinnar, Anaivari odai, Agniyar, Ambuliyar, Therkar, Upper Vaigai, Upper Gundar, Sengotaiyar, Kalingalar, Nichabanadhi, Ponaiyar and Varratar-Nagalar were taken up for implementing this project.

During 2008-09, the following activities were carried out in 9 sub basins (phase I) and 15 sub basins (phase II) at a total cost of Rs. 469.761 lakhs.

- 23 Cluster Sub-basin Veterinary Units have been established to provide breeding support and veterinary services at the farmers' doorsteps utilising the services of unemployed veterinary graduates on Public Private Partnership.
- 1898 hectares of private land have been brought under fodder cultivation by providing fodder inputs such as Co3 slips, maize and kolukattai grass seeds to the farmers at free of cost. By this, approximately 1.38 lakhs tonnes fodder can be produced in this year.
- 60 Demos on Azolla cultivation have been conducted and Azolla inputs have been provided to 600 farmers at free of cost.
- 780 Infertility cum total veterinary health care camps have been conducted.
- 690 Farmers' interactive meetings have been conducted.
- 7.73 lakhs sheep and goats have been dewormed periodically at free of cost.
- Training on best animal husbandry practices have been provided to 6225 farmers.

The following activities are proposed for 2009-10 in 9 sub basins (phase I), 15 sub basins (phase II) and 14 sub basins (phase III) at a total cost of Rs.608.171 lakhs.

- ❖ Establishment of 80 Cluster Sub-basin Veterinary Units to provide breeding support and veterinary services at the farmers' doorsteps utilising the services of unemployed veterinary graduates on Public Private Partnership.
- ❖ 2,400 hectares of private land to be brought under fodder cultivation by providing fodder inputs such as Co3 slips, maize, and kolukattai grass seeds to the farmers at free of cost.
- ❖ 50 Demos on Azolla cultivation will be conducted and Azolla inputs will be provided to 500 farmers free of cost.
- ❖ 1,100 Infertility cum total veterinary health care camps will be conducted.
- ❖ 1,000 Farmers interactive meetings will be organised.
- ❖ 11, 27,000 sheep and goats will be dewormed periodically at free of cost.
- ❖ 3 days training on best animal husbandry practices will be organised to benefit 10,000 farmers.
- ❖ Mineral mixture will be distributed to 9,000 animals at free of cost.
- ❖ In service training will be given to 177 Veterinarians.

2. Emergency Tsunami Reconstruction Project (ETRP)

The Tsunami waves that struck Tamilnadu has caused devastation in 13 costal districts of Tamil Nadu. By way of providing relief and alternative livelihood, the Government have accorded sanction of Rs.896.282 lakhs with assistance from World Bank to take up improvement of infrastructure facilities, fodder security and training in animal husbandry activities.

Under the above scheme, construction of 9 Veterinary Dispensaries, 3 Veterinary Hospitals, 13 District Veterinary Extension Centres, 2 Fodder banks, 12 Community Based Veterinary Worker Centres, 70 Subcentres and renovation of 4 Veterinary institutions were taken up. Out of these, 95 construction works were completed and the necessary equipments to the above veterinary institutions have been supplied.

Besides these, 10,000 Tsunami victims were trained in animal husbandry activities and 82 local unemployed youth were trained on first aid, deworming, vaccination and breeding support.

ETRP - Financial progress

Sl. No	Name of work	Sanctioned (Rs.in lakhs)	Expenditure (Rs.in lakhs)
1	Buildings	627.38	545.71
2	Equipment and Furniture	220.31	159.93
3	Training	48.592	33.37
Total		896.282	737.41

III. CENTRALLY SPONSORED SCHEMES

1. National Agricultural Development Project (NADP)

The National Agricultural Development Project programme aims at achieving 4 % annual growth in agriculture sector during 11th plan period.

During 2007-08, Rs.1.57 crores was allotted for implementing the scheme called "Identification and traceability of breedable bovine population". For this scheme, to monitor and improve the conception rates of the bovines, nine lakhs breedable bovines in the State were identified and covered with laser printed Polyurethane tags and a passbook provided for each animal to benefit large number of farmers.

During 2008-09, a sum of Rs.10.507 crores was sanctioned under National Agricultural Development Project for fodder development and animal health. During 2009-10, it is proposed to undertake fodder development activities in every block of the state covering a total area of 2,540 acres involving the Self Help Groups under the National Agricultural Development Programme for a sum of Rs.127 lakhs. Rs.449.88 lakhs is earmarked for undertaking fodder development activities through six departmental farms. Rs.8.40 lakhs is approved for providing Chaff cutters in six District Livestock Farms to reduce wastage and improve the digestibility of the fodder. Rs.66.30 lakhs is approved for making silo with sugarcane tops to enrich the nutrients. Rs.96.00 lakhs is approved for provision of 8 Mobile Disease Diagnostic Labs and Rs.85.43 lakhs for development of small ruminants in the state. Besides these, Rs.217.69 lakhs has been handed over to TNLDA to conduct the ongoing scheme of identification and traceability of breedable bovines to cover an additional 13.73 lakhs animals.

2. Assistance to States for Control of Animal Diseases (ASCAD)

To control economically important diseases affecting livestock, "Assistance to States for Control of Animal Diseases Programme (ASCAD) is being implemented with 75 % central assistance and with 25 % of state share. For "Training / Seminar" component, 100 % assistance by Government of India is given as grant.

Vaccination Particulars - (2006-07 to 2008-09)

(In lakhs doses)

Sl. No	Vaccine	2006-07		2007-08		2008-09	
		Target	Achievement	Target	Achievement	Target	Achievement
1	Anthrax	50.00	40.52	30.00	31.51	31.95	35.15
2	Black Quarter	20.00	20.14	20.00	20.00	20.90	21.11
3	Haemorrhagic Septicaemia	20.00	20.61	20.00	20.00	16.23	20.46
4	Foot and Mouth Disease	92.00	55.19	83.50	82.06	183.00	169.14
5	Peste Des Petitis Ruminants	138.00	125.88	60.00	43.44	81.82	55.77

ASCAD - Financial Outlay

Sl. No	Year	Project cost (Rs.in lakhs)
1	2006-07	443.82
2	2007-08	824.77
3	2008-09	1869.85

For the first time, the department has undertaken Foot and Mouth disease vaccination to cover a population of 90 lakhs animals twice in a year during the year 2008-09 to avoid recurrence of the disease.

3. Foot and Mouth Disease Control Programme

This 100 % centrally sponsored scheme is being implemented at Kanyakumari district during the 10th plan period from 2003-2004 at 81 revenue villages covering 23 veterinary dispensary areas in all the 9 blocks.

FMDCP - Financial Outlay

Sl. No	Year	Project cost (Rs.in lakhs)
1	2005-06	40.61
2	2006-07	12.88
3	2007-08	10.00
4	2008-09	5.00

4. Assistance to State Poultry Farms

To improve the economic conditions and living standards of rural people by encouraging them in poultry rearing, to create additional avocations, employment opportunities and supplement the income of marginal farmers, landless labourers, Self Help Groups and other socially backward sectors of the society and thereby improving their living standards, the department is implementing a central and state share scheme (80:20) at

Poultry Farm, Kattupakkam, the Government have sanctioned Rs. 68.00 lakhs to develop turkey units and a sum of Rs. 34.00 lakhs was released as I installment in 2008-09.

5. Integrated Sample Survey Scheme

Since 1977, the Government of India provides grant in-aid to the state on 50:50 sharing basis for the implementation of the scheme, covering all the districts.

- ▶▶ The sample survey for estimation of major livestock products like milk, egg, meat and wool are conducted every year to have basic information on the actual production level.
- ▶▶ Estimation of milk production and other livestock products is done by analysing the data collected from the field.
- ▶▶ It provides timely and reliable statistical data on major livestock products.
- ▶▶ It also studies the utilization of livestock products and attendance practices of major livestock annually and seasonally in a regular and continuous manner.
- ▶▶ The data generated from sample survey becomes a tool for planning purposes for the development of livestock sector of the state and the country.

The season wise estimated production of milk, egg and meat during the year 2008-09 are as follows:

Item	Summer	Rainy	Winter	Total
Milk (Lakhs MT)	17.84	19.92	18.97	56.73
Egg (Million Nos.)	2789	2739	3282	8810
Meat (Million Kgs)	115	146	158	419

6. Livestock Census

This is a 100 % centrally sponsored scheme. Objective of the scheme is to collect quantitative information and data regarding livestock, poultry, fisheries and agricultural implements. Essentially, it provides Animal Husbandry Statistics to serve as a base for planning and monitoring developments in the field of Animal Husbandry and Veterinary Sectors.

According to the 17th Livestock Census, the species wise distribution of livestock and poultry, their percentage to the total and density in the state is as follows.

Species	Population (in lakhs)	Percentage to total livestock	Density per sq.km.
Cattle	91.41	36.65	70
Buffalo	16.58	6.65	13
Sheep	55.93	22.42	43
Goat	81.77	32.79	63
Pig	3.21	1.29	2
Donkeys, Horses, Mules & Camels	0.51	0.20	-
Total Livestock	249.41	100.00	192
Dogs	27.17	-	21
Poultry	865.91	-	666

The 18th quinquennial livestock census was conducted in the state during the year 2007 with reference date 15.10.2007.

Co-operative Societies

Co-operative societies for breeding sheep, poultry, pig etc., are functioning in the department since 1964. The Commissioner of Animal Husbandry and Veterinary Services is the functional Registrar of these societies. The objective of these societies is to improve the economic conditions of the weaker sections by making them members of the society. As on 31.03.2009, 293 societies have been registered, out of which 81 societies are active.

Tamil Nadu Poultry Development Corporation Limited (TAPCO)

Tamil Nadu Poultry Development Corporation Limited (TAPCO) was incorporated on 12th July, 1973 under Companies Act. Due to continuous loss, the Government have decided to close down the operation of this Corporation. The Commissioner of Labour, who is the competent authority, accorded permission under section 25 (0) of the Industrial Disputes Act to close down this Corporation with effect from 29.12.2000.

As per orders of Government, all the movable and immovable properties of TAPCO located at various places have been handed over to Animal Husbandry Department. Action is being taken for liquidation of TAPCO as per Companies Act.

VETERINARY SERVICES

The main activities of the department of Animal Husbandry and Veterinary Services is to provide Veterinary health care and disease control, livestock breeding programme, improvement in the productivity of pasture lands by introducing improved fodder seeds and the increased use of wastelands for fodder production and to provide training on Animal Husbandry activities and extension.

The services provided are artificial insemination, pregnancy diagnosis, treatment of ailing animals, vaccination, deworming, castration, extension and implementation of various schemes. The above services are provided through the institutions listed below.

Polyclinics	:	6
Clinician Centres	:	22
Veterinary Hospitals	:	139
Veterinary Dispensaries	:	1,207

Apart from this, 1,829 Sub-centres provide first-aid and breeding support. Of the above institutions, Polyclinics are functioning round the clock and provide specialized services in gynaecology, surgery and medicine and have in-patient facilities. In-patient facilities are also available in all Clinician centres and Veterinary Hospitals. In addition, X-ray facility is available in all the institutions functioning in district headquarters except at Namakkal and Thanjavur. Ultrasound scan facility is available in Chennai, Coimbatore and Madurai polyclinics.

The average number of cattle units covered per graduate veterinary institution in the state is 9,945. The graduate institutions in Coimbatore, Dharmapuri, Erode, Kancheepuram, Krishnagiri, Nagapattinam, Namakkal, Perambalur, Salem, Sivagangai, Thiruvallur, Thiruvannamalai, Thiruvarur, Villupuram and Virudhunagar districts are covering more cattle units than the state average. The average number of villages covered per graduate veterinary institution in the state is 9.

Livestock benefited from the above Institutions during 2008-09 are as follows:

Sl. No	Institutions	No. of livestock benefited in 2008-09 (in lakhs)
1	Veterinary Institutions	158.23
2	Mobile units	3.25
3	Subcentres	35.55
	Total	197.03

Veterinary Services at doorsteps

To strengthen the Veterinary services at doorsteps, the Government have newly appointed 207 Veterinary Assistant Surgeons. In the first phase, 444 Grade-I Veterinary Sub-centres have been converted into upgraded Veterinary Sub-centres. The Government have also created the posts of 444 Junior Veterinary Assistant Surgeon and they are being recruited through TNPSC. As soon as TNPSC gives the selection list, posting orders will be given to them in the upgraded Veterinary Sub-centres.

By way of appointing 1,317 Animal Husbandry Assistants, 705 have been appointed through Employment exchange and 38 have been appointed on compassionate grounds. 121 casual labourers were brought under regular establishment as Animal Husbandry Assistants. 20 Animal Husbandry Assistants will be appointed on compassionate grounds and the remaining will be appointed subsequently.

55 Mobile Veterinary Units are providing veterinary health services like vaccination, deworming and breeding coverage like artificial insemination to livestock reared by farmers residing in remote areas. These units go to the remote areas and serve on a scheduled programme. During 2007-08, to improve their services, the vehicles in Mobile Veterinary Units of Coimbatore, Erode, Mannargudi, Kovilpatti, Sirkazhi and Myladuthurai were replaced at a cost of Rs.28.50 lakhs. The services provided by these units are well recognised by the public as the service is at their doorsteps.

Under the TN-IAMWARM Project, 50 Mobile Veterinary Units manned by unemployed Veterinary graduates in the 24 sub basins were established to provide veterinary services and breeding support at the doorsteps of the uncovered area. TNLDA has trained 102 rural youth to take up doorstep artificial insemination work during 2008-09.

Training Programmes

In order to improve the performance level of veterinarians, para-veterinarians and farmers, the Animal Husbandry Department has recognized training as a critical input.

During 2008-09, the following training programmes were conducted for technical staff:

- ✓ Under Government of India with World Bank assistance, Avian Influenza training was given to 1,422 veterinarians, 843 para veterinarians and 2,200 animal husbandry assistants and other department staff.
- ✓ A total of 783 officials have been provided capacity building training on various technical aspects at various institutions in the country.
- ✓ Government have permitted to recruit and train 425 individuals and post them as Livestock Inspectors Grade-II and so far 106 individuals have been posted. Training for 222 individuals is under progress in sheep farm at Mukuntharayapuram (116) and Orathanad District Livestock Farm (106).
- ✓ Under ASCAD programme, 60 Veterinary Assistant Surgeons have been given capacity building training on various disease diagnostic methods.

Farmers' Training:

During 2008-09, the following trainings were conducted under various schemes for farmers:

- ▶ Under TN-IAMWARM Project, 4375 farmers were trained on best animal husbandry practices.

- ▶ Under Emergency Tsunami Reconstruction Project (ETRP), 82 local unemployed youth were trained on veterinary first aid, deworming, vaccination and breeding support. Besides these, 10,000 farmers will be trained in Animal Husbandry practices.
- ▶ Under ASCAD scheme, disease awareness camps for farmers in all the 385 Panchayat Unions and district level camps for 100 farmers in 19 districts were conducted.

DISEASE PREVENTION, DIAGNOSIS, CONTROL AND ERADICATION

"Animal Health is Nation's Wealth ". Outbreak of diseases causes huge economic losses to the farming community by way of livestock mortality and decreased productivity. Outbreaks tend to affect the socio-economically under-privileged very much more than the rich. Control and eradication of many animal diseases is a must, not only for profitable livestock production but also essential to make our livestock and livestock products globally acceptable. As farmers generally show interest only in curative veterinary practice and not in prevention and control of diseases, the department plays a major role in disease prevention and eradication. Systematic control of diseases will progressively lead to its containment first and eradication ultimately.

A) DISEASE PREVENTION:

Institute of Veterinary Preventive Medicine, Ranipet (IVPM)

As the adage goes "Prevention is better than cure", this department is giving great importance to the prevention of diseases in livestock and poultry. The Institute of Veterinary Preventive Medicine, Ranipet, Vellore district is producing vaccines and other biological products required for the protection of livestock and poultry. At present, the institute is producing 5 types of bacterial vaccines, 5 types of viral vaccines, 5 diagnostic reagents, 4 pharmaceuticals and one diluent. In addition, Indian Council for Agriculture Research aided All India Coordinated Research Project (AICRP) on Foot and Mouth Disease is functioning in this institute to undertake investigation into Foot and Mouth Disease outbreaks and for virus typing.

The vaccines and diagnostics produced in the institute are:

Sl. No	Details	2006-07	2007-08	2008-09	
				Target	Production
1.	Black quarter vaccine (in lakhs doses)	28.95	28.46	32.00	23.72
2.	Haemorrhagic septicaemia vaccine (Alum Precipitated) (in lakhs doses)	28.46	30.24	32.00	18.98
3.	Enterotoxaemia vaccine (in lakhs doses)	1.78	2.37	5.00	1.19

4.	Anthrax Spore vaccine (in lakhs doses)	50.23	43.16	60.00	35.56
5.	Brucella abortus vaccine (in lakhs doses)	0.04	0.08	0.10	0
6.	Ranikhet disease 'K' vaccine (lakhs doses)	582.88	678.04	750.00	516.33
7.	Ranikhet disease 'F' vaccine (lakhs doses)	78.54	0	50.00	19.90
8.	Duck Plague vaccine (lakhs doses)	73.20	111.94	100.00	110.00
9.	Ranikhet Lasota vaccine (lakhs doses)	30.97	105.20	100.00	144.00
10.	Sheep Pox vaccine (lakhs doses)	3.25	3.53	3.00	3.09
11.	Brucella abortus plate antigen (ml)	1,105	1,000	1500	1270
12.	Brucella abortus plain antigen (ml)	5,900	10,500	5000	4000
13.	Brucella abortus milkring test antigen (ml)	1,540	1,000	2000	300
14.	Salmonella pullorum coloured antigen (ml)	3,100	0	5000	1310
15.	California Mastitis test reagent (ml)	5,500	2,300	5000	2000

During 2008-09, the Institute has produced products worth of Rs.2.02 crores. The value of products produced during 2008-09 and anticipated value of production during 2009-10 are as follows.

(Rs.in lakhs)

Items	Production 2008-09	Proposed 2009-10
Bacterial vaccines	157.54	322.50
Viral vaccines	75.07	89.20
Diagnostics reagents	0.16	0.28
Total	201.79	411.98

To meet the international standards in vaccine production, it is essential to upgrade the vaccine manufacturing laboratories to Good Manufacturing Practices (GMP) standards. As a first step, the poultry vaccine production laboratory is upgraded to Good Manufacturing Practices standards under Assistance to States for Control of Animal Diseases (ASCAD) scheme. The remaining Vaccine Production Laboratories and Quality Control Division at the Institute are to be upgraded to Good Manufacturing Practices standards with NABARD assistance.

B) DIAGNOSTIC SERVICES

A disease surveillance system is essential to provide early warning of outbreaks while epidemiology helps in systematic study of the distribution and determinants of health problems. For this purpose, 20 Animal Disease Intelligence Units, 4 Mobile Laboratories, attached to Animal Disease Intelligence Units one each at Madurai, Vellore, Tirunelveli and

Coimbatore and 2 Poultry Disease Diagnostic Laboratories one at Andagalurgate (Namakkal district) and another at Erode are functioning in the state.

i) Animal Disease Intelligence Units: These units play a major role in developing a system of disease monitoring, surveillance and forecasting of all important livestock and poultry diseases in the state. This in turn helps in evolving strategic control measures. They map out the disease prone areas by collecting epidemiological information and data. Based on their advisories, the field veterinarians take adequate protective and prophylactic measures well in advance. In addition, during the phase of disease outbreaks, they render technical assistance to field staff in diagnosis and control of diseases.

20 Animal Disease Intelligence Units functioning in the state are as follows:

Sl. No	Animal Disease Intelligence Unit	Districts covered
1	Coimbatore	Coimbatore
2	Cuddalore	Cuddalore
3	Dindigul	Dindigul
4	Erode	Erode
5	Kancheepuram	Chennai, Kancheepuram, Tiruvallur
6	Karur	Karur
7	Krishnagiri	Krishnagiri
8	Madurai	Madurai, Theni
9	Nagapattinam	Nagapattinam, Thiruvarur
10	Salem	Salem, Namakkal
11	Sivagangai	Sivagangai, Ramanathapuram
12	Thanjavur	Thanjavur, Pudukottai
13	Thoothukudi	Thoothukudi
14	Tiruchirapalli	Tiruchirapalli, Perambalur, Ariyalur
15	Tirunelveli	Tirunelveli, Kanyakumari
16	Udhagamandalam	Udhagamandalam
17	Vellore	Vellore, Thiruvannamalai
18	Villupuram	Villupuram
19	Virudhunagar	Virudhunagar
20	Dharmapuri	Dharmapuri

During 2008-09, 2, 73,576 specimens have been examined for various diseases by the above units.

Under part II scheme 2009-10, it is proposed to provide Semi Auto Analyzer with kits each one unit to Animal Disease Intelligence Unit, Karur, Virudhunagar, Krishnagiri, Dharmapuri and Nagapattinam at a cost of Rs.12.50 lakhs. It is proposed to purchase Haeme Analyser with kit each one unit to Animal Disease Intelligence Unit Tirunelveli, Madurai, Coimbatore, Erode, Salem and Vellore. It is proposed to provide Uriscan with kit each one unit to Animal Disease Intelligence Unit of Tirunelveli, Madurai, Coimbatore,

Erode, Salem and Vellore. For quick communication between the Animal Disease Intelligence Units and state head quarters in respect of disease surveillance outbreak and diagnosis, it is proposed to provide Fax machines to all Animal Disease Intelligence Units at a total cost of Rs.2.00 lakhs.

ii) Poultry Disease Diagnostic Laboratory: To cater to the needs of the farmers in areas of high poultry production, 2 Poultry Disease Diagnostic Laboratories one at Andagalurgate in Namakkal district and the other at Erode are functioning. These are mainly involved in conducting post-mortem, testing of droppings, blood samples and other specimens for accurate diagnosis of poultry diseases. In addition, they render technical advice to farmers for diagnosis, prevention and control of various infectious and parasitic diseases. During the year 2008-09, 1,038 poultry farms and 908 villages have been visited and 5,862 samples have been examined.

iii) Central Referral Laboratory: Central Referral Laboratory functioning at Saidapet, Chennai is the apex laboratory which caters to the needs of the field veterinarians in the diagnosis of diseases. The timely diagnosis and confirmation of the diseases helps in containing the disease and protecting other animals by prompt treatment and vaccination. During 2008-09, 2046 specimens received from the field have been tested and results communicated. ELISA test for PPR, Brucellosis and Johne's disease, screening of farm animals for Tuberculosis, Johne's disease and sexually transmitted diseases, screening of animals for Brucellosis and BSE surveillance have also been carried out in this laboratory. During the year 2008-09, 22 brain samples have been sent to SRDDL, Bangalore for BSE surveillance.

This laboratory also deals with testing of export materials from animal origin and issuing health certificates. This laboratory plays a vital role in creating awareness among poultry farmers about Avian Influenza and trains field veterinarians and para veterinarians and Rapid Response Teams to act in case of emergency. As per the Government of India guidelines, during 2008-09, 9881 samples have been sent to SRDDL, Bangalore for screening of Avian Influenza.

Under part II scheme 2009-10, It is proposed to provide two Monopan balances at a cost of Rs.3.00 lakhs, one Dark Field Microscope, one Uriscan with kit and two deep freezers at a cost of Rs.1.00 lakh to Central Referral Laboratory, Saidapet.

C) DISEASE CONTROL AND ERADICATION

Animal Husbandry Department had made notable achievements in the control of various contagious diseases like Haemorrhagic Septicemia, Black Quarter, Anthrax, Enterotoxaemia and Ranikhet. The most important landmark and the major breakthrough is the stamping out of Rinderpest disease, which has been the greatest killer of bovines and sheep. This was achieved through implementation of National Project on Rinderpest

Eradication since 1993-94. The state has been declared "Rinderpest Free" from May 2004 onwards which stands out as the most important milestone in the successful disease control activities of the department.

Controlling major economic livestock diseases has the potential to bridge the yield gap (i.e.,) the difference between the actual production and the production potential, which will help in improving the quality of life of the rural poor. Moreover, the presence of contagious diseases prevents our country in fully exploiting the international export market, as our livestock and livestock products should comply with the zoo-sanitary specification and standards prescribed by the Office International Epizootics (OIE) to freely enter and compete in world markets.

As systematic and periodical vaccination is the key for prevention and control of various livestock diseases causing huge economic loss to the farmers, the department is giving prime importance to this component of work by vaccinating the susceptible livestock and poultry in all veterinary institutions. All the veterinary services are provided by camps conducted under "Kalnadai Padhukappu Thittam", Mass Contact Programmes and ASCAD. During the year 2008-09, 578.35 lakhs vaccinations have been carried out. During the year 2009-10, it has been planned to carry out 503.25 lakhs vaccinations through veterinary institutions and under other programmes.

VACCINATIONS

(In lakhs)			
Sl. No.	Vaccination	Target 2008-09	Achievement 2008-09
1	Haemorrhagic septicemia	16.22	20.46
2	Black quarter	20.90	21.11
3	Anthrax	31.95	35.15
4	Foot & Mouth Disease	183.00	169.14
5	Peste-des-petis-ruminants	60.00	55.77
6	Enterotoxaemia	-	2.39
7	Sheep pox	-	1.79
8	Ranikhet K	275.00	270.82
9	Others	-	1.72
	Total	587.07	578.35

The timely and regular prophylactic vaccination of susceptible animals in the endemic areas has reduced the disease outbreaks in the state. Now, with the eradication of Rinderpest and containment of bacterial and viral diseases and several other steps taken, the state is steadily moving towards the goal of freedom from major animal diseases.

VETERINARY PUBLIC HEALTH

Nearly 4/5 of all communicable diseases are shared by man through animals, which are called zoonotic diseases. With animal husbandry forming the core livelihood of millions of rural population, veterinary public health plays a vital role in controlling the zoonotic diseases.

Some of the services related to these aspects are detailed below:

(a) Canine Rabies Control Programme:

Rabies is one of the important zoonotic diseases affecting mankind since time immemorable. The dog population of Tamilnadu is 27.17 lakhs in which domestic dogs and stray dogs accounts for 73% and 27% respectively. Dogs play a major role in transmission of the diseases to livestock and human beings. Thus, elimination of canine rabies constitutes the most effective means of controlling transmission to human beings and other livestock.

With this aim, Canine Rabies Control Programme Unit is functioning at Madurai and Tirunelveli with the following objectives:

- Systematic, periodical door-to-door prophylactic vaccination to pet dogs against rabies after collecting the cost of vaccine
- Post exposure vaccination of all livestock including dogs at free of cost
- Creation of awareness among the public through publicity and propaganda by distributing pamphlets and handbills and by conducting dog shows.

During the year 2008-2009, a total number of 6,750 vaccinations have been done in the above centres.

b) Mass Vaccination and Deworming:

Regular vaccination and periodical deworming of livestock and poultry are done by the department at free of cost. Therefore, spreading of zoonotic diseases like Anthrax, Brucellosis, Taeniasis, Strongylosis, Amphistomiasis etc., are greatly reduced, besides breaking the life cycle of parasites for which the human beings act as permanent or intermediate host.

During the year 2008-09, 307.20 lakhs livestock and 271.15 lakhs poultry have been vaccinated. Apart from this, 32.37 lakhs cattle, 4.77 lakhs buffalo, 102.44 lakhs sheep, 83.43 lakhs goats and 4.23 lakhs poultry have been dewormed.

C) Meat Inspection:

Regular meat inspection work is conducted by the department in the 107 registered slaughter houses functioning under the control of the local bodies located throughout the

state. By this, the chance of getting meat borne diseases like taeniasis, trichinosis and hydatidosis in meat consumers is almost eliminated.

EXTENSION SERVICES

Without proper extension and propaganda, all the new techniques and scientific know-how cannot be fully utilized. With efficient extension activities, people can not only be made aware of the latest developments in animal husbandry practices but also can make the schemes and programmes of the department more transparent to the public. Moreover, it will have a greater role in solving many field problems and in containment of economically important diseases that threaten livestock.

With the motto of "**Seeing is learning**", each and every opportunity is being utilised by the department to enlighten the farmers on various animal husbandry practices and disease diagnosis. Fairs and festivals are conducted by the department to collect and disseminate knowledge about Animal Husbandry and allied activities to the public in those areas. Information on prevention and control, knowledge about deadly diseases which are common for livestock and man with public health significance, deworming, vaccinations, artificial inseminations, calf rearing, goat and sheep rearing, poultry keeping, pasture management, meat inspection, sanitary measures, destruction and disposal of carcasses, disinfection of contaminated premises and surfaces are provided to the farmers / stake holders.

During the year 2008-09, the Government allocated a sum of Rs.3.75 lakhs to the Animal Husbandry Department towards conducting fairs and the department participated in the following fairs:

- Dindigul - Kodaikannal - Kodai Vizha
- Yercaud - Kodai Vizha
- Krishnagiri - Mangani Vizha
- Villupuram - Kalvarayan malai - Kodai fair
- Cuddalore - Silver Beach fair
- Vellore - Yelagiri - Kodai Vizha
- Thiruvannamalai - Deepathiru Vizha
- Chennai - Island ground trade fair
- Madurai - trade fair
- Coimbatore - trade fair
- Tirunelveli - trade fair

A sum of Rs.79, 860 was allocated for the department to take part in Republic Day Parade pageantry at Chennai. Latest information to farmers is carried through mass media

like Television, All India Radio and Press. The department is utilising mass media to the maximum extent. In addition, information on best animal husbandry practices, diseases affecting livestock and their control and various developmental activities and schemes implemented in Animal Husbandry Department is broadcast by All India Radio at 720 K.Hz frequency in 'Veedum Vayalum' programme on all Saturdays between 7.30 PM to 8.00 PM.

ANIMAL WELFARE MEASURES

To prevent cruelty to animals and to treat them ethically in a humane manner, the Government in coordination with Animal Welfare Board of India are addressing the problems of unethical treatment to animals. Some of the important measures taken are:

- Society for Prevention of Cruelty to Animals (SPCA) has been established in all districts in Tamil Nadu.
- A State level coordination committee headed by Secretary, Animal Husbandry, Dairying and Fisheries Department, Government of Tamil Nadu has been constituted. District level coordination committees headed by District Collector have also been constituted in every district.

Animal Birth Control Programme (ABC)

To control the stray dog population by the municipalities and other local bodies, the Government of India has formulated the Animal Birth Control (Dogs) Rules with the main objective of reducing the incidence of Rabies by the control of the stray dog population.

Government have ordered implementation of Animal Birth Control programme in the municipal corporations and municipalities covering well over 2.00 lakhs dogs involving Municipal Administration Department, Animal Husbandry Department and Animal Welfare Board of India. Under this programme, the stray dogs both male and female are captured, sterilized, vaccinated against rabies and let back in the same place from where they were caught.

PERFORMANCE OF SCHEMES DURING THE YEAR 2008-09

1. To improve the livelihood opportunities of people in rural areas through sheep rearing units, a sum of Rs.60.00 lakhs have been sanctioned to provide sheep units to 12 Self Help Groups in Thoothukudi district and 11 Self Help Groups in Ramanathapuram district. Each group consists of 15 motivated woman members who are interested in sheep rearing and 50% subsidy is given to them.
2. For the implementation of the scheme, Genetic upgradation of goats by artificial insemination in collaboration with Tamil Nadu Veterinary and Animal Sciences University in two districts at a total cost of Rs.2.00 lakhs has been sanctioned. For

this purpose, beneficiaries were identified in Thoothukudi and Vellore districts. 10 Veterinary Assistant Surgeons have been trained in Tamil Nadu Veterinary and Animal Sciences University for implementation of the project.

3. 60 beneficiary Self Help Groups were identified in Dindigul, Pudukottai, Ramanathapuram, Sivagangai and Thoothukudi districts and provided automatic and manually operated chaff cutters at a cost of Rs.6.00 lakhs.
4. To prevent occurrence of blue tongue, 18 fogging machines were supplied to Dindigul, Tirunelveli, Thoothukudi, Madurai and Erode districts.
5. To create sustainable livelihood opportunities, 27, 900 backyard poultry birds have been provided to Self Help Groups at a cost of Rs.15.00 lakhs in Dindigul, Pudukottai, Ramanathapuram, Sivagangai and Thoothukudi districts.
6. Telephone facilities were provided to 16 Animal Disease Intelligence Units (ADIU) at a cost of Rs.2.24 lakhs.
7. The project proposal for improvement of selected livestock markets (Shandies) under Multistate Agricultural Competitiveness Project with World Bank assistance is to be implemented for five years. With this motive, the first year component of the project implementation plan (PIP) for approval of the state Government has been sent through the team leader of Multistate Agricultural Competitiveness Project for improvement of two Shandies in Coimbatore district and eight Shandies in Cuddalore at a total cost of Rs. 378.350 lakhs.
8. In order to revamp IVPM at Ranipet, the Government have constituted an Expert Committee for the improvement of structure and functioning of IVPM, and to upgrade it to GMP Standards as mandated by Government of India.
9. The Government of Tamil Nadu has evolved a new farm policy for maintaining specific breeds of livestock, land development and fodder cultivation covering wider areas in the 11 District Livestock Farms.
10. To provide veterinary health services like vaccination, deworming and breeding coverage to livestock reared by farmers residing in remote areas who face difficulties to reach veterinary institutions, mobile veterinary units have been established at Thuckalai and Gudiyatham.
11. Two PDDLs one at Andagalurgate in Namakkal district and the other in Erode are being upgraded to Bio-Security Level II Laboratory at a total cost of Rs. 44 lakhs to screen the large number of sero samples from poultry belt districts.
12. Government of India has sanctioned to establish Bio-Security Level IV Laboratory at Padappai near Chennai in Tami Nadu. 30 acres of land has been handed over to Government of India for setting up the laboratory. This is a prestigious project, required for the purpose of certifying Tamil Nadu as a zone free of Avian Influenza, in

case of outbreaks of bird flu in other parts of the country, so as to facilitate uninterrupted export of eggs, chicks and their products.

13. To strengthen the functioning of the Animal Husbandry Department, 207 Veterinary Assistant Surgeons and 38 Research Assistants have been newly appointed.
14. In the first phase, 444 Grade-I Veterinary Sub-centres have been converted into upgraded Veterinary Sub-centres. The Government have also created the posts of 444 Junior Veterinary Assistant Surgeons and they are being recruited through TNPSC. When TNPSC gives the selection list, postings will be given to them in the upgraded Veterinary Sub-centres.
15. Government have permitted to recruit and train 425 individuals and post them as Livestock Inspectors. 106 individuals have been posted as Livestock Inspector Grade-II. Training for 222 individuals is under progress in sheep farm at Mukuntharayapuram (116) and Orathanad District Livestock Farm (106).
16. For appointment of 1,317 Animal Husbandry Assistants, 705 Animal Husbandry Assistants have been appointed through Employment exchange. 38 persons have been appointed on compassionate grounds. 121 casual labourers were brought under regular establishment as Animal Husbandry Assistants. Further, 20 Animal Husbandry Assistants will be appointed on compassionate grounds and the remaining will be appointed subsequently.

NEW PROGRAMMES FOR THE YEAR 2009-10

During the year 2008-09, the Government have allotted additional funds to the tune of Rs.2.00 crores to meet out the requirement of all veterinary institutions towards purchase of medicine. For the year 2009-10, this additional allotment has been enhanced to Rs.4.00 crores and provided in the Budget estimate.

PROPOSAL FOR NATIONAL AGRICULTURAL DEVELOPMENT PROJECT (NADP)

S. No	Scheme Components	Unit cost	No.of Units	Total cost (Rs. in lakhs)
I	Genetic Upgradation of Livestock			
1	Genetic improvement of Livestock in District Livestock Farms	-	7	385.03
II	Improving Livestock Health			
1	Provision of Mobile Diagnostic Laboratories	12.00	8	96.00
Total				481.03

UNDER PART II SCHEME

It is proposed to strengthen the disease diagnosis and surveillance facilities of Animal Husbandry Department and to establish the networking under e-Governance at a total cost of Rs.106.00 lakhs.

1. To find out the presence of some insidious infections circulating in a herd, it is proposed to provide 5 Nos.Semi Auto Analyzer with kits each one unit to Animal Disease Intelligence Units at Karur, Virudhunagar, Krishnagiri, Dharmapuri and Nagapattinam at a cost of Rs.12.50 lakhs.
2. It is proposed to purchase Haeme Analyser with kit each one unit to Central Referral Laboratory, Saidapet and Animal Disease Intelligence Units at Tirunelveli, Madurai, Coimbatore, Erode, Salem and Vellore at a total cost of Rs.35.00 lakhs.
3. It is proposed to provide Uriscan with kit each one unit at a total cost of Rs.3.50 lakhs to Animal Disease Intelligence Units at Tirunelveli, Madurai, Coimbatore, Erode, Salem, Vellore and Central Referral Laboratory, Saidapet.
4. It is proposed to provide two Monopan balance for Central Referral Laboratory, Saidapet at a cost of Rs.3.00 lakhs.
5. It is proposed to purchase one Dark Field Microscope for Central Referral Laboratory, Saidapet at a cost of Rs.5.00 lakhs for diagnosing leptospirosis in animals.
6. To store large volumes of samples for disease investigation, it is proposed to provide 2 Nos. deep freezers to Central Referral Laboratory, Saidapet at a cost of Rs.1.00 lakh.
7. For quick communication between the Animal Disease Intelligence Units in the districts with the state head quarters in respect of disease surveillance, out break and diagnosis, it is proposed to provide Fax machine to all the Animal disease Intelligence Units at a total cost of Rs.2.00 lakhs.
8. For networking the offices of Animal Husbandry Department through server and client computers, it is proposed to provide 100 computers at a cost of Rs.44.00 lakhs.

TAMIL NADU LIVESTOCK DEVELOPMENT AGENCY

POLICY NOTE 2009-10

INTRODUCTION

Tamil Nadu Livestock Development Agency (TNLDA) has been established as an autonomous State Implementing Agency to co-ordinate all the breeding activities in cattle and buffaloes in the State. The agency is implementing the National Project for Cattle and Buffalo Breeding (NPCBB) in Tamil Nadu since 09-01-2003.

The primary aim of the Agency is to increase milk production, per capita availability of milk and per animal productivity.

The objective of the agency includes bringing all the breedable female cattle and buffaloes under defined breeding programme through artificial insemination and natural service in a phased manner.

OBJECTIVES

1. Introduction of quality bulls with high genetic merit for frozen semen production.
2. Quality control of goods and services in breeding
3. Supply of quality genetic inputs.
4. Intensification of Progeny Testing Programme (PTS)
5. Identification of elite cows through Field Performance Recording Programme (FPRP).
6. Increasing the breeding facilities;
 - Establishing new mobile AI centres by training rural youth and equipping them
 - Encouraging Door-step delivery of breeding services
 - Facilitating stationary AI centre to perform mobile AI work by conversion of existing Stationary Artificial Insemination Centre into Mobile cum Stationary Centre.
7. Support for acquisition of frozen semen and artificial insemination equipment.
8. Streamlining storage and supply of liquid nitrogen.
9. Conservation of indigenous breeds
10. Human resources development through regular training.

QUALITY ASSURANCE

The frozen semen production stations in the State are periodically evaluated by the Central Monitoring Unit of Government of India to ensure quality semen production. The frozen semen production station, Nucleus Jersey & Stud Farm, Udhagamandalam of the Tamil Nadu Co-operative Milk Producers' Federation Limited has been graded 'A' and the District Livestock Farm, Udhagamandalam and Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur of Department of Animal Husbandry have been graded 'B' by the Central Monitoring Unit of Government of India.

PROCUREMENT OF QUALITY INPUTS FOR GENETIC UPGRADATION

During the year 2008-09, 11.98 lakhs frozen semen straws produced from bulls of superior genetic quality were purchased and supplied to the Department of Animal Husbandry.

ACTIVITIES UNDERTAKEN DURING THE YEAR 2008-09

1. Strengthening of Frozen Semen Production

Stations

- a) To strengthen the Liquid nitrogen storage at frozen semen stations, orders have been placed for installation of two liquid nitrogen bulk storage silos at District Livestock Farm, Hosur and Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur.
- b) A quality control laboratory is being constructed at District Livestock Farm, Hosur with funds from NABARD.
- c) A bull shed is being constructed at Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur with funds from NABARD.
- d) 6 Jersey bull calves and 14 Crossbred Jersey bull calves for District Livestock Farm, Udhagamandalam, 16 Crossbred Jersey bull calves for Exotic Cattle Breeding Farm, Eachenkottai and 14 Crossbred Jersey bull calves for District Livestock Farm, Hosur have been procured.

2. Strengthening of artificial insemination network in the State by establishing new Mobile Artificial Insemination Centres

- a) 152 Rural youth were trained to take up doorstep artificial insemination work during the year 2008-09 and action has been initiated to establish new mobile Artificial Insemination centres through them.
- b) 11 Retired Veterinarians / Livestock Inspectors have been provided with necessary facilities during the year to carry out artificial insemination at farmers' doorstep.
- c) Conversion of 144 Stationary Artificial Insemination centres to stationary cum mobile Artificial Insemination centres is under progress.

3. Strengthening and streamlining of liquid nitrogen and frozen semen distribution

- a) To strengthen the Liquid nitrogen storage at the semen banks, orders have been placed for installation of two bulk liquid nitrogen storage Silos at the District Co-operative Milk Producers' Unions in Salem and Villupuram.
- b) Replacement of 30-35 litres capacity liquid nitrogen containers in 1231 Artificial Insemination centres of Tamil Nadu Co-operative Milk Producer's Federation Limited to facilitate mobile artificial insemination work is under progress.

4. Strengthening of Semen banks

Civil works have been taken up in 10 Cattle Breeding and Fodder Development Units of the Department of Animal Husbandry at Chitlapakkam, Coimbatore, Dharmapuri, Erode, Madurai, Salem, Thiruchirapalli, Tirunelveli, Thiruvannamalai and Vellore.

5. Training Programmes

Tamil Nadu Livestock Development Agency has arranged and sponsored the following training programmes during the year 2008-09.

- a) 200 Livestock Inspectors of the Department of Animal Husbandry have been given retraining in bovine breeding.
- b) 4 Veterinarians working in Frozen Semen production stations of Animal Husbandry Department have been trained in Breeding Bull Management, Frozen Semen Technology and Artificial Insemination at BAIF Research Foundation, Urlikanchan, Pune.

- c) 11 Veterinarians of Tamil Nadu Co-operative Milk Producers' Federation Limited have been trained in Field Performance Recording Programme at Sabarmati Ashram Gaushala, Bidaj, Gujarat.
- d) 261 veterinarians of Animal Husbandry Department and 49 veterinarians of Tamil Nadu Co-operative Milk Producers' Federation Limited have been given refresher training at Madras Veterinary College, on "current trends in managing infertility in bovines".
- e) 369 Village level workers have been given retraining at the training centres of the District Co-operative Milk Producers' Union at Vellore, Salem, Villupuram and Madurai on bovine breeding.
- f) 152 rural youth have been trained to take up Artificial Insemination work.

6. Progeny Testing Scheme (PTS)

The fourth batch of 13 Crossbred Jersey bulls, fifth batch of 23 Crossbred Jersey bulls and sixth batch of 20 Crossbred Jersey bulls are under progeny testing programme implemented by the Tamil Nadu Cooperative Milk Producers' Federation with the financial assistance from Tamil Nadu Livestock Development Agency.

7. Field Performance recording of Elite animals (FPRP)

This programme is implemented by Tamil Nadu Cooperative Milk Producers' Federation with the financial assistance from the Tamil Nadu Livestock Development Agency. During the year 2008-09 under the second set, 1336 elite Crossbred Jersey cows have been enrolled from more than 150 Milk Producers' Co-operative Societies of 7 District Co-operative Milk Producers' Unions covering 13 revenue districts. From the elite cows enrolled, high yielding cows were selected and inseminated with proven bull semen and the bull calves born to these cows are selected and reared for semen production in the semen stations. 33 bull calves born under the programme have been procured during the year 2008-09.

8. Propaganda and Publicity

A weekly 30 minutes programme titled as 'Kaalnadai Selvam' is being sponsored by TNLDA and aired over Prasar Barathi (AIR) Chennai. The programme is aired on every Saturday at 7.30 p.m. The programme contents include, talk by experts, discussion on Animal Husbandry topics and interviews with experts and farmers.

9. Farmers' Seminars

Farmers' seminars were organized through the Department of Animal Husbandry in the districts of Erode, Sivagangai, Villupuram, Thirunelveli and Vellore.

10. Assistance to Private AI workers

106 rural youth have been given assistance of Rs.6000/- per year as support during the initial period of one year.

11. Strengthening of training centre

Strengthening of the training centre of District Co-operative Milk Producers' Union at Vellore is under progress.

LIVESTOCK INSURANCE SCHEME

The centrally sponsored Livestock Insurance Scheme is being implemented by Tamil Nadu Livestock Development Agency. During the year 2008-09, under the third phase, insurance of milch cattle and buffaloes has been taken up in 5 districts viz., Dharmapuri, Trichy, Thirunelveli, Thiruvannamalai and Villupuram from the month of January 2009. 50% of the premium amount is provided as grant and paid to the Insurance firm by the Government and 50% of the premium amount is borne by the farmers. During 2008-09, 1.56 lakhs high yielding milch cattle and buffaloes have been insured.

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
POLICY NOTE 2009-2010

INTRODUCTION

Tamilnadu Veterinary and Animal Sciences University (TANUVAS), first of its kind in the country was established during the year 1989. This University is also first of its kind to be established in South East Asia. The credit of establishing this University goes to the Hon'ble Chief Minister Dr.Kalaignar M. Karunanidhi. The following are the objectives of TANUVAS.

- ◆ To impart quality education to undergraduate, post-graduate and doctoral students in different fields of Veterinary and Animal Sciences and Fisheries Sciences.
- ◆ To carry out research in livestock, poultry and fish production, protection and value addition.
- ◆ To disseminate knowledge on important technologies to line Departments and farming community for the sustenance and growth of livestock, poultry and fisheries in the State.

UNITS OF TANUVAS

The constituent units of TANUVAS are given in Annexure.

ACTIVITIES OF TANUVAS

The activities of TANUVAS in the area of Education, Research, Clinics and Extension activities are outlined below:

EDUCATION

- ★ Details of students admitted during the year 2008-2009 at TANUVAS are furnished below.

Courses	Madras Veterinary College, Chennai	Veterinary College and Research Institute, Namakkal	Fisheries College and Research Institute, Thoothukudi	Institute of Food and Dairy Technology, Koduvalli	Total
B.V.Sc. & AH	137	71	-	-	208
B.F.Sc	-	-	34	-	34
B.Tech. (FPT)	-	-	-	17	17
M.V.Sc	60	8	-	-	68
M.F.Sc	-	-	4	-	4
Ph.D. (Veterinary)	15	2	-	-	17
P.G. Diploma in Bioinformatics	3	-	-	-	3
P.G. Diploma in Companion Animal Practice	1	-	-	-	1
M. Phil in Bio-technology	6	-	-	-	6
Total	222	81	38	17	358

- ★ An **International Workshop** on “**Emerging infectious diseases of animals and biotechnological applications**” was jointly organised by TANUVAS and Virginia Maryland Regional College of Veterinary Medicine, USA during 28th and 29th July 2008 at Madras Veterinary College, Chennai.
- ★ A one day seminar cum exhibition on “Emu industry : prospects in India” was organized at Madras Veterinary College, Chennai on 06.10.2008. A total of 12 guest lectures were delivered by experts of TANUVAS. Practising and prospective emu farmers from Tamil Nadu, Andhra Pradesh, Maharashtra, and Karnataka participated in the Seminar.
- ★ The faculty of Department of Animal Biotechnology viz. Dr. G. Dhinakar Raj, Professor received National Bioscience Award for Career Development 2007 from the Ministry of Science and Technology, Govt. of India for his contribution in the development and commercialization of diagnostic and teaching kits. Dr. T.V. Meenambigai, Associate Professor received the Tamil Nadu Young Women Scientist Award 2006 from the Tamil Nadu State Council for Science and Technology for her contributions in Veterinary Sciences in the Discipline of Animal Biotechnology
- ★ Dr. P. Ramesh, Post graduate student from the faculty of Poultry Science, received Dr. B. V. Rao Memorial Award from World's Poultry Science Association for his M.VSc. thesis work on “Inclusion of soya lecithin in broiler diet”

- ★ Dr.M. Sakthipriya, Post graduate student from the faculty of Veterinary Pharmacology and Toxicology, received Dr.V.V.Ranade Young Scientist Award during the VII Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology, for her MVSc. thesis work on “In vitro studies on the antiproliferative effect of *Tinospora cordifolia* on mammary tumour cell line”

RESEARCH

Externally Funded Schemes

During 2008-09, twenty-nine external funded research programmes at a total outlay of Rs. 714.32 lakhs have been sanctioned.

Plan Schemes

Under University Plan, 86 Plan Schemes with the financial outlay of Rs. 2640.79 lakhs funded by the Government of Tamil Nadu are in operation for strengthening the infrastructure facilities for higher studies, innovations, research infrastructure and dissemination of knowledge.

Part II Schemes

During 2008-09, the following three Part II Schemes have been implemented at TANUVAS

1. Development of a vaccine for Goat pox disease at a cost of Rs. 20.50 lakhs.
2. Development of Lateral flow kit for the Diagnosis of Bovine Brucellosis at Rs.26.36 lakhs
3. Production of bio-active compounds of pharmaceutical value from marine organisms at Rs.28.14 lakhs

RESEARCH ACHIEVEMENTS IN ANIMAL SCIENCES

ANIMAL PRODUCTION

✦ **The structure and shelf life of value added buffalo meat sausages**

A study on the optimum level of inclusion of Maida-Plain flour (PF), Soy Flour (SF), Whole Egg (WE) and Liquid Whey (LW) for the preparation of buffalo meat sausage with 90 per cent meat was carried out. It was found that the PF incorporated value added buffalo meat sausages recorded the best structural properties and could be stored safely upto 28 days at $4\pm 1^{\circ}\text{C}$ and upto 60 days at $-18\pm 1^{\circ}\text{C}$.

✦ **Inclusion of soya lecithin in broiler diet**

This study reveals that Inclusion of soya lecithin from 1 to 5% in broiler diet has improved profit in broilers at 6 weeks of age from Re. 0.29 to 0.86 per kg live weight than control.

ANIMAL HEALTH

✦ **Development and field application of Indirect haemagglutination test (IHA) kit for diagnosis of leptospirosis**

Indirect haemagglutination test kit was successfully developed for the diagnosis of leptospirosis.

✦ **Development of Johne's disease vaccine for sheep**

Two heat inactivated Johne's disease vaccines have been developed using mineral oil and montanide 763A as adjuvants. The strong cellular and humoral immune response of the montanide adjuvanted vaccine group using the prevalent field sheep isolate was found to be efficacious in eliciting the strong immune response.

- ◆ **Development of a Homologous vaccine for Contagious Ecthyma**
A homologous cell culture adapted contagious ecthyma virus vaccine developed is safe, potent and efficacious vaccine to protect the small ruminants against contagious ecthyma, which in turn is beneficial to the farming community.

CLINICAL SERVICES

TANUVAS is offering clinical services to the pet and livestock owners round the clock. The details are furnished below :

Out-patient Cases treated during the year 2008-2009

HOSPITAL					
Species	Chennai		Madhavaram		Namakkal
	O.P.	Mobile	O.P.	Mobile	
Horse	1977	-	7	-	39
Cattle & Buffalo	13895	390	1056	3	5200
Sheep & goats	3462	125	588	32	2397
Dogs	47464	11	10792	2659	4775
Cats	1680	-	177	31	130
Poultry	1483	-	535	43	83
Others	574	18	169	24	44
Total	70535	544	13324	2792	12668

Inpatient facilities

At the Madras Veterinary College Hospital, 443 large and small animals were admitted as inpatients for various ailments. At Veterinary College and Research Institute, Namakkal, 2053 large and small animals were admitted as in-patients and treated. A separate quarantine unit for keeping animals under observation for rabies is also functioning at Madras Veterinary College and Veterinary College and Research Institute, Namakkal. 3887 Artificial Inseminations (AI) were carried out for large and small animals.

Infrastructure and facilities available

1. Ultrasound scan unit with 4D real time Doppler ultrasound scan
2. Small and large animal Endoscopy unit
3. Holter monitor for monitoring 24 hours cardiac function

4. Ophthalmology with Phaco Emulcifier
5. Intensive Care Unit
6. Artificial Insemination in Dogs
7. Assisted Reproductive Technology Laboratory
8. Large Animal Services (Artificial Insemination, Infertility Diagnostic Lab, Infertility Clinic, Obstetrical Unit, Rumen Lab, Hoof Care and Soundness Examination Unit)
9. Ambulatory Services "Vet Care on Wheels" to provide health cover to farm animals in rural areas
10. Emergency and Critical Care Unit
11. Semi auto analyzer – Biochemical
12. Haemoanalyser

Laboratory services

- **Central Animal Feed and Food Residue Laboratory, Madhavaram**

Rapid detection of mycotoxins – Aflatoxin, Ochratoxin – A, Citrinin, Penicillic acid ; detection of Pesticides – Organochlorine and Organophosphorus in Animal feed and food sample analysis were carried out at this laboratory. Apart from this, with financial assistance of Department of Science and Technology, Government of India, necessary infrastructure has been developed to detect Veterinary Drug residues and Genetically Modified Organisms (GMOs) screening. During 2008-09, 3448 samples were tested and results communicated with appropriate solution to the livestock and poultry entrepreneurs.

- **Animal Feed Analytical and Quality Control Laboratory, Namakkal**

This laboratory is involved in analysis of feed/feed ingredients for their composition like nutrients, contaminants, adulterants, mycotoxins and n3 fatty acids in meat and eggs. Out of 13698 samples submitted for analysis by commercial farms during 2008-09, 33164 number of tests were carried out. Apart from this, the lab had issued 103 bi-weekly bulletins on weather related advices for poultry farmers in Namakkal zone.

- **Leptospirosis Research Laboratory, Madhavaram**

During 2008-09, this laboratory screened 636 animal serum samples for leptospirosis and found 400 samples were positive. Apart from this, this laboratory screened 11097 human serum samples for leptospirosis and found 8937 samples were positive.

- **Andrological Laboratory, Chennai**

During 2008-09, this laboratory carried out karyological screening for 96 samples, hamster egg penetration test for 31 samples and semen analysis for 563 samples.

EXTENSION ACTIVITIES

The Directorate of Extension Education is functioning with the objective of planning and execution of all outreach programmes of the University in close

coordination with other line departments / agencies such as the Dept. of Animal Husbandry, Tamil Nadu Co-operative Milk Producers' Federation Ltd., Tamil Nadu Livestock Development Agency and other Government organizations. The activities undertaken by the Directorate of Extension Education is furnished below.

Training Programmes Conducted during 2008-2009

Title of the Training Programme	No. of Training given		Beneficiaries				Total
			SC/ST		Others		
	On campus	Off campus	Men	Women	Men	Women	
Dairy farming	138	173	629	1925	2488	3858	8900
Sheep & Goat farming	94	59	475	893	1531	1294	4193
Poultry Farming	63	47	384	681	795	1225	3085
Turkey Farming	38	4	156	224	465	236	1081
Japanese Quail farming	35	4	177	216	358	275	1026
Pig farming	30	7	144	90	355	119	708
Rabbit farming	20	2	66	72	238	139	515
Milk and Milk products	16	13	34	112	185	497	828
Home Science	41	28	41	208	334	1594	2177
Horticulture	28	26	96	68	763	372	1299
Integrated livestock farming	22	107	431	1182	794	1759	4166
Fish farming / Ornamental fish culture	28	27	138	116	444	326	1124
Crop Science	10	4	39	49	176	155	419
Agricultural Engineering	23	41	82	126	817	689	1714
Feed and Fodder Cultivation	12	12	96	113	247	199	655
Animal Science	24	16	123	195	555	346	1219
Calf rearing	6	7	19	28	201	79	327

Disease diagnosis and Management	3	25	118	182	147	349	796
Meat Products	10	1	8	46	55	145	254
Breeding problems & its management in crossbreds	5	-	7	9	38	11	65
Animal Husbandry and Fisheries practices	-	19	32	767	78	519	1396
Mineral mixture	-	2	12	8	32	5	57
Silage making	-	2	13	15	54	-	82
Total	638	626	3307	7306	11036	14266	35915

Other Extension Activities

Farmers' Queries	
By Post	6372
In Person	19603
By Field Visit	6168
By Telephone	5624
By Email	494
By Touch Screen	2666
Radio Programmes	106
Television Programmes	45
Exhibitions	265
TOTAL	41,343

Technologies developed

Products

1. Electrical Stunner

Electrical Stunner developed at Department of Meat Science and Technology, Madras Veterinary College., Chennai is ready for commercialization. The cost of the equipment is Rs.20,000/-. The electrical stunner may be used to stun calves, pigs, sheep, goats and turkey prior to slaughter, so as to obviate unnecessary suffering and pain to the animals/ birds and also for effective slaughtering process.

2. Field artho pump for joint irrigation

The equipment on Field artho pump for joint irrigation in septic arthritis in large animals was developed at Department of Surgery, Madras Veterinary College, Chennai. This technology is a practical approach for joint problem management in large animals

3. Herbal Product for the Production of Disease Resistant Ornamental Fishes

Herbal Product for the Production of Disease Resistant Ornamental Fishes was developed at Fisheries College and Research Institute, Thoothukudi. This technology prevents bacterial diseases and was adopted in three ornamental fish farms near Thoothukudi

Vaccines

4. Heat Inactivated Johne's disease vaccine

Heat Inactivated Johne's disease vaccine for sheep was developed at Vaccine Research Centre – Bacterial Vaccine, Madhavaram, Chennai. This vaccine will reduce the incidence of Johne's disease with reduced faecal shedding, culling percentage and mortality.

Diagnostic kits

5. Immunocomb kit for breeder flock serology

Immunocomb kit for three major poultry diseases namely Infectious Bursal Disease (IBD), Hydropericardium Syndrome (HS) and Chicken Anaemia (CA), for breeder flock was developed at Central University Laboratory, Madhavaram.

Others

6. Clamp rod fixation for femur fracture management

Clamp rod fixation for femur fracture management in dogs was developed at Department of Surgery, Madras Veterinary College, Chennai.

7. Poly culture of fishes and prawns in short seasonal ponds

The use of technology on "Poly culture of fishes and prawns in short seasonal ponds" revealed that the yield / ha will be improved by 30%, thereby Prawn production will be improved

8. Production of live feeds like daphnia and infusoria

Technology on "Production of live feeds like daphnia and infusoria" developed by Fisheries Unit, Madhavaram has been well adopted by the fish farmers.

9. Simple breeding techniques for the breeding of chichillids

The adoption of technology on "Simple breeding techniques for the breeding of chichillids" revealed that the reservoir fish culture operations will be improved by 20%

10. Low Cost Natural Colour Enhancer for Ornamental Fishes

Technology on "Low Cost Natural Colour Enhancer for Ornamental Fishes" was developed and transferred to three ornamental fish farms near Thoothukudi

RESEARCH ACHIEVEMENTS IN FISHERIES SCIENCES

✦ Development of health drinks from low value fishes and their nutritional characteristics.

Minced meat from low value fishes such as lizard fish (*Saurida tumbil*) and silverbellies (*Leiognathus sp*) were converted into fish powder by subjecting into steam cooking and acid hydrolysis process. Fish powder from both fishes were incorporated into a cereal mix, containing malted and roasted wheat and ragi powder,

at different percentage (10%, 15%, 20% and 25%) separately. The fish meat powder incorporated cereal mix were stored at ambient temperature upto 90 days. Organoleptically health drinks form hydrolysed meat powder incorporated cereal mix was more acceptable than from cooked meat in both the fishes. However, health drinks prepared by using meat powder of lizard fish was more acceptable than from silverbellies.

⊕ **Antibacterial activity of chitosan and its use in fish preservation.**

Chitosan prepared from crustacean shells had good antibacterial effect, irrespective of the source of crustacean groups. Chitosan treatment could improve the quality of salt cured fish. This study revealed the antibacterial activity of chitosan and its potential use in controlling bacterial load in seafood and thereby improving quality and shelf life of seafoods.

SCHEMES IMPLEMENTED DURING 2008-09

- ◆ During 2008-09, Rs. 20.50 Lakhs was sanctioned to develop Vaccine for goat pox disease. In this scheme, positive samples (3 nos.) available in this laboratory are being revived. Goat pox suspected field materials are being passaged in vero cells. Cover slips culture was done for one suspected field goat pox sample and no cytopathic effect was observed
- ◆ During 2008-09, Rs. 26.36 Lakhs was sanctioned to develop lateral flow kit for the diagnosis of Bovine Brucellosis. In this scheme, 50 serum samples were collected and screened by Rose Bengal Plate test and 39 sera were found positive for brucellosis. The field isolates of *Brucella abortus* and *Brucella melitensis* were purified by subculture into Brucella selective agar and were preserved in BSA slants.
- ◆ During 2008-09, Rs. 28.14 Lakhs was sanctioned for the production of bioactive compounds of Pharmaceutical value from marine organisms. In this scheme, crude extract were prepared out of fifteen species of sponges which include star fishes, sea urchin and mollusca, proved to have antimicrobial activity.

NEW PART-II SCHEMES FOR 2009-10

The following two Part II schemes proposed by TANUVAS are sanctioned by the Government for the year 2009-10.

1. Development of an Inactivated Swine fever virus vaccine at a total cost of Rs. 32.00 lakhs
2. Empowerment of rural women through rotational goat and desi fowl rearing at a total cost of Rs. 28.00 lakhs.

FUTURE THRUST AREAS

Veterinary

- ↷ Identification of alternate feed resources consequent to reduction in pastoral lands

- ↻ Utilization of tree fodders
- ↻ Enrichment of fodder to improve their nutritive value
- ↻ Development of rapid, reliable, sensitive and specific molecular diagnostics for infectious diseases
- ↻ Establishment of molecular microbiology laboratory
- ↻ Establishment of endocrinology laboratory
- Fisheries**
- ↻ Development of shrimp disease vaccine
- ↻ Quality assurance in sea foods
- ↻ Development of bioactive compounds for pharmaceutical value from marine organisms

ANNEXURE

☞ COLLEGES

Madras Veterinary College Chennai
 Veterinary College and Research Institute, Namakkal
 Institute of Food and Dairy Technology, Koduvalli, Chennai
 Fisheries College and Research Institute, Thoothukkudi

☞ CENTRES OF ADVANCED STUDIES (CAS)

Veterinary Clinical Medicine, Ethics and Jurisprudence, MVC., Chennai
 Poultry Science, Veterinary College and Research Institute, Namakkal

☞ CENTRE OF EXCELLENCE

Centre of Excellence in Animal Biotechnology and Immunology, MVC., Chennai

☞ RESEARCH STATIONS

Poultry Research Station, Chennai
 Livestock Research Station, Kattupakkam, Kancheepuram
 Mecheri Sheep Research Station, Pottaneri, Salem
 Sheep Breeding Research Station, Sandynallah, Udthagamandalam
 University Research Station, Madhavaram, Chennai
 Institute of Animal Nutrition, Kattupakkam, Kancheepuram

☞ VETERINARY UNIVERSITY TRAINING AND RESEARCH CENTRES

- | | |
|------------------|-----------------|
| 1. Coimbatore | 2. Dharmapuri |
| 3. Dindigul | 4. Erode |
| 5. Karur | 6. Madurai |
| 7. Melmaruvathur | 8. Parakkai |
| 9. Cuddalore | 10. Rajapalayam |
| 11. Salem | 12. Thanjavur |
| 13. Tirunelveli | 14. Tiruppur |
| 15. Tiruchi | 16. Vellore |

☞ **VETERINARY UNIVERSITY REGIONAL RESEARCH CENTRE, PUDUKOTTAI**

☞ **FISHERIES TRAINING AND RESEARCH CENTRE**

1. Parakkai, Kanyakumari District
2. Thanjavur

☞ **AVIAN DISEASE LABORATORY**

1. Namakkal
2. Thalaivasal

☞ **LABORATORIES**

- Animal Feed Analytical and Quality Control Laboratory, Namakkal
- Central Animal Feed and Food Residue Laboratory, Chennai
- Central. University Laboratory, Madhavaram Milk Colony, Chennai
- Leptospira Diagnostic Laboratory, Madhavaram Milk Colony, Chennai
- Shrimp Disease Diagnostic Laboratory, Madhavaram Milk Colony, Chennai
- Bacterial Vaccine Research Centre, Madhavaram Milk Colony, Chennai
- Viral Vaccine Research Centre, Madhavaram Milk Colony, Chennai
- Centralised Instrumentation Laboratory, Madras Veterinary College, Chennai
- Centralised Clinical Laboratory, Madras Veterinary College, Chennai
- Animal facility at Biosafety level 2 (WHO standard), Madhavaram Milk Colony, Chennai

☞ **FARMERS' TRAINING CENTRES**

1. Kancheepuram
2. Theni
3. Tiruvarur

☞ **KRISHI VIGYAN KENDRAS**

1. Kattupakkam
2. Kundrakudi
3. Namakkal

THIRU. PONGALUR N. PALANISAMY
Minister for Rural Industries and Animal Husbandry