ANIMAL HUSBANDRY, DAIRYING AND FISHERIES DEPARTMENT

ANIMAL HUSBANDRY

POLICY NOTE
2019-2020

Demand No. 6

UDUMALAI **K.RADHAKRISHNAN**
MINISTER FOR ANIMAL HUSBANDRY

I have reoriented the Agriculture Sector, ushering in a Second Green Revolution with focus on integrated farming and development of the Animal Husbandry and Dairy sector. The State Government's unprecedented investment in this sector by providing milch cows and sheep and goats to poor families and by organizing farmers' fairs (Uzhavar peruvizha) in all the 16,564 Revenue Villages has resulted in higher growth in the Agriculture Sector"

Speech delivered by SELVI J JAYALALITHAA, Hon'ble Chief Minister of Tamil Nadu during the 57th Meeting of the National Development Council at New Delhi on 27.12.2012

"I am convinced that unless farm production and productivity is improved through sustainable agriculture and water-efficient irrigation, real improvements in farmers' income would take time to realize. We need to promote agricultural diversification through horticulture, animal husbandry, dairy and fisheries and to institutionalize a workable comprehensive social safety net to cushion farmers from sudden economic and natural shocks"

Speech of the Hon'ble Chief Minister of Tamil Nadu Thiru. Edappadi K.PALANISAMY at the Fourth Governing Council Meeting of NITI AYOG held on 17th June 2018 at New Delhi.

I N D E X

ANIMAL HUSBANDRY DEPARTMENT

POLICY NOTE 2019-20

1. INTRODUCTION

Animal Husbandry sector plays a critical role in ensuring the welfare of rural population. A majority of farmers depend on animal husbandry for their livelihood. Moreover, Livestock sector provides supplementary employment and sustainable source of income to many small and marginal farmers. Thus, this sector is emerging as an important sector, leveraging the rural economy. In addition, this sector provides a continuous flow of essential food products like milk, meat, eggs besides draught power, raw materials like wool and hides for industries, and manure. With increase in production of livestock products, livestock rearing is also considered as an avocation with high export potential. Distribution of livestock wealth is more egalitarian, compared to land and hence, from the equity and livelihood perspective, it is considered as an important component in poverty alleviation programmes.

As a component of agricultural sector, the sector contributes 9% to Gross Domestic Product and employs 8% of the labour force.(source: Indian Council Of Agricultural Research (ICAR), New Delhi) In recent years, livestock output has grown at a rate of about 5% a year, which is higher than the growth in agricultural sector. The growth process in the Animal Husbandry sector has pioneered abundant opportunities in terms of employment generation. The contribution of livestock sector to the Gross State Value Added (GSVA) is 5.29% and that to the Agriculture and allied activities is 42.05%. During 2011-12 the gross value added estimate (at current prices) of livestock which was Rs.26,179.44 crore in the State increased to Rs.68,507.06 crore during 2017-18. The estimated milk production, which was 54.74 lakh Metric Tonnes (LMT) during 2005-06 in Tamil Nadu increased to 77.42 LMT during 2017-18. Likewise, the estimated egg production which was 62,225 lakh numbers during 2005-06 has increased to 1,74,161 lakh numbers during 2017-18 and the estimated meat production (including poultry meat) which was 1,18,616 MT

during 2005-06 increased to 6,03,352 MT during 2017-18.

The per capita availability of milk per day increased from 231 gm to 268 gm and the per capita availability of eggs per annum has increased from 97 numbers to 246 numbers during the period between 2005-06 to 2017-18.

The supply-demand scenario for different products suggests that the demand for livestock products is income elastic and is rising continuously. The demand side is expected to be upbeat as disposable income is witnessing sustained growth. Over the next two decades, demand for livestock products is likely to grow faster. Demand for meat and eggs would be adequately met from the domestic supplies if current trends in production growth are sustained.

The Animal Husbandry Department is committed to the agenda for sustainable development adopted by the United Nations General Assembly for achieving the Sustainable Development Goals. Building on the principle of “leaving no one behind”, the Department places

its commitment towards a holistic approach to achieving sustainable development goals of No poverty (Goal 1) Zero Hunger (Goal 2), Good health and well being (Goal 3), Quality Education (Goal 4) and Gender equality (Goal 5) through implementation of various programmes and policies of the Department.

The Animal Husbandry Sector has a key role to play in addressing the many challenges in achieving Sustainable development Goals (SDGs) through production of adequate quantities of safe and nutritious food, creating equitable employment opportunities through the forward and backward linkages thereby bolstering the physical, financial and social assets and a consequent economic improvement.

The Goal 1 Zero Poverty, Goal 2 Zero hunger, Goal 3 Good Health and well being, Goal 4 Quality Education and Goal 5 Gender Equality are all addressed by the Animal Husbandry Sector. The sector also in many ways has the intrinsic ability to address all the 17 SDGs.

Animal husbandry as an avocation is seen as the best tool to eradicate poverty, achieve food security and provide sustainability to agriculture, empower women and thus address gender bias issues, improve nutrition and promote well being of people of all ages, through adoption of environment friendly practices.

2. OBJECTIVES OF THE ANIMAL HUSBANDRY DEPARTMENT

The following are the objectives of the department:

- Upgradation of local stock of cattle and buffaloes by Artificial Insemination using exotic and cross bred semen for cattle and Murrah semen for buffaloes
- Conservation and propagation of indigenous breeds of livestock in their native tracts
- 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
- Ensuring livestock health by preventing major livestock diseases through vaccination, surveillance and monitoring
- Implementing various Central and State Government schemes for the upliftment of economic status of rural poor
- Protecting human health by detection and control of major zoonotic diseases of animals
- Creating awareness among public on modern animal husbandry practices
- Conducting training on basic and latest animal husbandry practices to farmers

3. LIVESTOCK WEALTH IN TAMIL NADU

Tamil Nadu has vast resources of livestock and poultry, which play a vital role in improving the socio economic conditions of the rural

people. The small, marginal farmers and landless labourers mainly depend on livestock and poultry as it provides sustainable livelihood opportunities of rural poor.

Table 1: State's Livestock and Poultry Population as per 19th Census

Species	**Population** (in lakh Nos.)
Cattle	88.14
Buffalo	7.81
Sheep	47.87
Goat	81.43
Pigs	1.84
Others (Horses, Ponies and Donkeys)	0.14
Total Livestock	**227.23**
Total Poultry	**1,173.49**

A majority of the cattle reared by the farmers comprise of high milk yielding cross breeds like *Jersey* and *Holstein Friesian*. While Jersey cross bred cattle is the breed of choice in the plains, Holstein Friesian cross breds are reared in the hilly areas and in Districts like Coimbatore, Dharmapuri, Dindigul, Erode, Karur, Kanyakumari, where the climate is conducive for rearing this breed. Further, a majority of

commercial poultry rearing enterprises are located in the districts of Dharmapuri, Erode, Karur, Namakkal, Salem and Tiruppur.

Besides these, native breeds of cattle like *Kangayam, Umblachery, Alambadi, Bargur Pulikulam and Toda buffaloes* are reared in their respective native tracts. Among them, Kangeyam cattle are reared in Western districts viz., Dindigul, Namakkal, Erode, Coimbatore, Tiruppur, Salem and Karur; Umblachery,cattle in Eastern districts viz., Thanjavur, Thiruvarur, and Nagapattinam; Alambadi cattle in Western districts viz., Dharmapuri, Erode and Salem; Pulikulam cattle in Southern districts viz., Sivagangai, Madurai, and Virudhunagar; Bargur cattle in Erode district and Toda buffalo in The Nilgiris district. Likewise native breeds of sheep, *Mecheri* (Salem and Tiruppur districts), *Ramnad White* (Ramanathapuram district), *Madras Red* (Chennai, and Kancheepuram districts), *Kilakarisal* (Ramanathapuram, Sivagangai and Madurai districts), *Vembur* (Thoothukudi district), *Tiruchi Black* (Tiruchirapalli, Salem, and Dharmapuri districts), *Coimbatore* (Coimbatore district), *Katchaikatty Black* (Madurai district),

Chevaadu (Tirunelveli district) and *Nilgiri* (The Nilgiris district) and native goat breeds like *Kanni Adu* (Thoothukudi and Tirunelveli districts), *Kodi Adu* (Thoothukudi and Ramanathapuram districts) and *Salem black* (Salem district) are reared in Tamil Nadu.(*Districts within parenthesis indicate native districts)*

As per the 19th quinquennial livestock census, Tamil Nadu ranks 1st in respect of Poultry, 4th in Sheep, 7th in Goats, 13th in Cattle and 14th in Buffalo population in the country.

4. ADMINISTRATIVE SET UP

The Animal Husbandry Department is headed by the Director of Animal Husbandry and Veterinary Services, from the cadre of Indian Administrative Service.

The Director is assisted by four Additional Directors, two Joint Directors, one Deputy Director and nine Assistant Directors in the Directorate on technical subjects.

One Additional Director among the four Additional Directors, one Joint Director, one

Deputy Director and two Administrative Officers assist the Director in administrative matters.

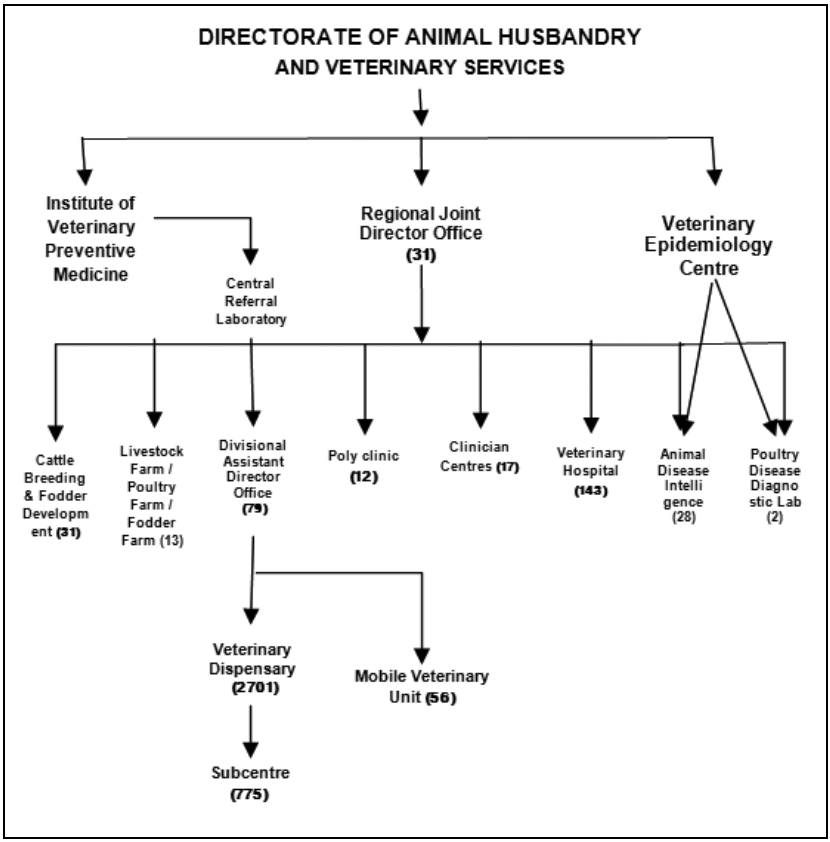
Financial Controller, a Chief Accounts Officer deputed from Finance Department and Accounts Officer deputed from Treasuries and Accounts Department, Assistant Director (Agri) from Agriculture department and Deputy Registrar from Co-operative department are working at the Directorate.

Regional Joint Directors and Deputy Directors are responsible for the activities of the Department at the District level and Assistant Directors are responsible at the Divisional level.

Institute of Veterinary Preventive Medicine (IVPM) at Ranipet, Vellore district is headed by a Director in the cadre of Additional Director.

The Veterinary Epidemiological Centre (VEC), functioning from veterinary polyclinic campus, Saidapet, Chennai coordinates the work of the Animal Disease Intelligence Units (ADIUs) and Poultry Disease Diagnostic Laboratories (PDDLs) located in the Districts.

ORGANISATIONAL CHART



5. VETERINARY SERVICES

Animal Husbandry Department provides timely and effective health coverage to the livestock and poultry population of the State to augment their production and productivity. Veterinary services are provided through a vast

network of veterinary institutions located across the State from remote villages to District head quarters. Veterinary Sub-centres (775) manned by para veterinarians provide minor veterinary services including first aid and breeding services at remote villages. Veterinary Dispensaries are (2,701) located in village panchayat that are manned by Veterinary Assistant Surgeons provide veterinary care to the livestock reared by farmers in the areas around the veterinary dispensaries. Veterinary hospitals (143) a majority of which are located in the block head quarters and manned by senior veterinarians in the cadre of Assistant Director of animal husbandry provide secondary care to the livestock. Clinician centres (17) a majority of which are located in the district head quarters and veterinary polyclinics (12) located at Municipal Corporations which function round the clock and provide tertiary care to the livestock are manned by senior veterinarians in the cadre of Assistant Director of animal husbandry. Besides these, Mobile Veterinary units (56) manned by Veterinary Assistant Surgeons provide veterinary services at the doorsteps of the farmers.

Table 2: District wise veterinary institutions available

Sl. No.	District	Poly clinics	Clinician centres	Hospitals	Dispensaries	Sub centres	Mobile Units
1	Ariyalur	0	0	2	44	7	1
2	Chennai	1	0	1	0	4	1
3	Coimbatore	1	1	14	95	20	2
4	Cuddalore	0	1	5	91	55	1
5	Dharmapuri	0	1	2	78	7	2
6	Dindigul	1	0	5	105	62	1
7	Erode	1	1	6	100	24	3
8	Kancheepuram	0	2	1	104	35	2
9	Kanyakumari	0	1	2	49	15	2
10	Karur	0	1	2	70	14	1
11	Krishnagiri	0	1	2	79	10	1
12	Madurai	1	0	4	95	54	1
13	Nagapattinam	0	2	4	71	19	2
14	Namakkal	0	0	4	105	1	3
15	Perambalur	0	0	0	37	3	0
16	Pudukottai	0	1	4	99	30	2
17	Ramanathapuram	0	0	4	55	14	0
18	Salem	1	0	7	147	5	6
19	Sivagangai	0	0	2	78	44	0
20	Thanjavur	1	1	6	105	26	3
21	Theni	0	0	3	53	46	1
22	The Nilgiris	0	1	2	29	7	3
23	Thiruppur	1	0	6	100	34	1
24	Thiruvallur	0	0	5	87	25	1
25	Thiruvannamalai	0	1	5	122	19	3
26	Thiruvarur	0	1	8	71	30	1
27	Thoothukudi	1	0	2	67	37	1
28	Tiruchirapalli	1	0	8	101	33	2

Sl. No.	District	Poly clinics	Clinician centres	Hospitals	Dispensaries	Sub centres	Mobile Units
29	Tirunelveli	1	0	7	113	28	1
30	Vellore	1	0	8	120	24	4
31	Villupuram	0	1	7	151	20	4
32	Virudhunagar	0	0	5	80	23	0
TOTAL		12	17	143	2,701	775	56

Table 3: Veterinary services provided during 2018-19 (in lakh)

Species	Cases Treated	Castration	Deworming
Cattle	125.14	1.19	55.04
Buffalo	8.39	0.03	5.03
Sheep	51.06	1.39	101.30
Goat	108.26	7.22	155.36
Dog & Cat	19.64	0.11	7.23
Poultry	55.00	0	20.53
Others	5.23	0.14	2.09
Total	**372.72**	**10.08**	**346.58**

The medicines, equipments and chemicals required for providing the above services are procured through Tamil Nadu Medical Services Corporation (TNMSC).

Table 4: Fund allocation for medicines 2018-19

Sl. No	Name of the Scheme	Fund Allotted (Rs.in Lakh)
1	General Medicines	2,572.01
2	Intensive Health Cover	100.00
3	Equipments, Chemicals, Sutures & Surgicals	317.16
4	Mineral mixture	353.52
5	Reserve Fund	123.46
	TOTAL	**3,466.15**

The fund allocation for procuring medicines to the veterinary institutions based on the number and type of cases handled is as follows:

Table 5: Institution wise fund allocation for medicines 2018-19

Sl. No	Type of Institution	Fund Allocation (In Rs.)
1	Animal Disease Intelligence Unit(ADIU)	32,91,000
	Poultry Disease Diagnostic Laboratory (PDDL)	
	Central Referral Laboratory (CRL)	
2	Livestock Farms	16,36,000
3	Veterinary Polyclinics	50,60,000
4	Clinician Centres	39,95,000
5	Veterinary Hospitals	2,19,00,500

Sl. No	Type of Institution	Fund Allocation (In Rs.)
6	Pet Clinic, Adyar	1,24,000
7	Poultry Farm, Kattupakkam	1,03,000
8	Veterinary Dispensaries	28,03,94,000
9	Mobile Veterinary Units	34,26,000
10	Cattle Breeding and Fodder Development Units	15,65,500
11	Dog Breeding Unit, Saidapet	31,000
12	Veterinary Sub-Centres	1,47,25,000
13	Poultry Extension Centres	61,500
14	Visiting Sub Centre	3,02,500
15	Intensive Health Cover	1,00,00,000
Total		**34,66,15,000**

6. BREEDING SERVICES

The department provides breeding services to the cattle population through all the field institutions. Artificial insemination service is provided for cattle and buffaloes at Rs.10 per insemination. A total of 51.82 lakh Artificial inseminations were performed during the year 2018-19.

Frozen semen required for artificial insemination programme is produced in three frozen semen production stations functioning

from the departmental farms at Eachenkottai, Hosur and Udhagamandalam. These stations produce quality frozen semen so as to ensure better fertility and conception rate and faster genetic progress among the cattle maintained by the farmers.

The Minimum Standard Protocol for Frozen Semen Production as prescribed by Government of India is strictly adhered to. Breeding bulls of *Jersey, Holstein Friesian, Crossbred Jersey, Crossbred Holstein Friesian, Red Sindhi, Kangeyam, Umblachery, Bargur, Pulikulam and Murrah breeds* are maintained in these stations.

The Frozen Semen Production Stations under the control of the Department have produced 22.15 lakh exotic, 29.96 lakh crossbred, 5.03 lakh indigenous and 1.88 lakh buffalo frozen semen during 2018-19. A total of 1.26 lakh Crossbred Jersey and one lakh Murrah frozen semen straws were sold to Aavin and four lakh frozen semen straws of the Murrah breed were sold to Telengana Livestock Development Board during 2018-19.

Table 6 : Frozen Semen Straws production during 2018-19

Sl. No	Frozen Semen Station	Breeds	No.of Straws prodced *(in lakh)*
1	Exotic Cattle Breeding Farm, Eachenkottai	Jersey, Jersey cross, Umblachery, Murrah	29.53
2	District Livestock Farm, Hosur	Jersey cross, Sindhi, Kangeyam, Pulikulam, Bargur	11.06
3	District Livestock Farm, Udhaga mandalam	Jersey, Jersey cross, Holstein Friesian, Holstein Friesian cross	18.43
Total			**59.02**

The frozen semen straws produced at the stations reach the field breeding centres through the Cattle Breeding and Fodder Development Units (CBFD) functioning in districts (except Chennai) headed by Deputy Directors. These Units besides supplying frozen semen straws also distribute other breeding inputs including liquid Nitrogen.

6.1 Conservation of indigenous breeds of livestock

Tamil Nadu is endowed with diverse fauna and flora which have evolved over generations to adapt to the local agro climatic and socio-economic needs of the people. Tamilnadu has the following native breeds of cattle viz. (a) *Kangeyam*, (b) *Umbalachery,* (c) *Alambadi*, (d) *Pulikulam* (e) *Bargur* (f) Toda Buffaloes that have been extensively used for draught purposes over centuries. Human population explosion coupled with dwindling land for agriculture has resulted in reduced availability of feed resources. Mechanisation of agriculture and introduction of various means of transportation have reduced their utility and consequently their population. This has adversely affected the native breeds of animals that are reared under conventional methods. The need to feed a large population coupled with the economic aspirations of the farming community lead to cross breeding which has resulted in dilution of the native germ plasm. In order to arrest this depleting trend of

native breeds, it is imperative to improve and conserve this valuable germ plasm.

The genetic and molecular characterisation of all native breeds of cattle, buffalo, sheep, goat and dog is undertaken in collaboration with TANUVAS and the National Bureau of Animal Genetic Resources, Karnal. In an effort to conserve and preserve native breeds, the Government of Tamil Nadu is implementing a policy of maintaining all the native breeds of cattle at the Government farms and propagating them at their native tracts. Ex-situ conservation is also being done wherein bulls that are true to type are maintained in the frozen semen stations and frozen semen straws are produced and distributed in the respective native tracts for artificial insemination.

A DNA repository of all the characterized breeds of cattle native to Tamil Nadu is maintained at Tamil Nadu Veterinary and Animal Sciences University.

Under the conservation and development of indigenous breed of cattle, research centres for Bargur, Kangeyam and Pulikulam breeds of

cattle have been established with funds sourced from Government of India.

6.2 Use of latest Genetic tools for breed improvement

6.2.1 Semen Sexing technique.

The department is introducing the new technology of sexing the semen by which the sperms responsible for birth of male calves are eliminated and as a consequence only female calves shall be produced. The department has proposed to adopt this technology by using 2,000 numbers of such semen doses which will be used for artificial insemination in the farmer's animals on a pilot basis.

6.2.2 Use of imported Frozen Embryos:

The department has also been using imported frozen embryos for production of cattle of high genetic merit and in this context, imported frozen embryos derived from proven dams and progeny tested bulls are used in departmental farms. The male offsprings born out of these embryos shall be used for the bull production programme.

6.2.3 In Vitro Fertilisation:

The department has also proposed to introduce the technology of "*In Vitro Fertilization* (IVF)" for genetic upgradation of the existing cattle population in the State.

6.2.4 Enactment of Bovine Breeding Act:

The department will be bringing in a "Bovine Breeding Act", which will regulate the production, distribution and usage of frozen semen straws used for breeding cattle based on the breeding policy of the State. The Act aims to prevent indiscriminate usage of frozen semen straws that are not in conformity to the breeding policy besides providing for punitive action.

7. DISEASE PREVENTIVE SERVICES

Various bacterial, viral, protozoal, parasitic diseases affect livestock and poultry causing huge economic loss to the farmers. Control and eradication of livestock diseases is a must, not only for profitable livestock production but also essential to make our livestock and livestock products globally acceptable.

Animal health is the backbone of livestock industry. Microbial diseases and parasitic infestations cause severe production losses and mortality in livestock. Prevention and eradication of livestock diseases is not only helpful for profitable livestock production, but also essential for acceptance and improving the value of our livestock and livestock products in the global market. Adopting disease prevention measures would initially lead to control followed by eradication of livestock diseases from the livestock population.

The World Organisation for Animal Health (OIE) has indicated certain issues that are of concern in the Livestock sector. Issues like usage of economic data to drive prioritisation, strategic planning, performance monitoring of animal health situation and interventions, eradication of endemic diseases, One Health global effort to control antimicrobial resistance and prudent use of anti microbial agents in animals, Sustainable Laboratory Bio safety and Bio security practices, Responsible Conduct in Veterinary Research etc are contemporary issues that require immediate attention. The department

is committed to follow the norms as indicated by the Governments from time to time so that our products have acceptance in the International Trade. Thus, the goal of doubling the farmers' income will also be achieved

Table 7: Vaccination carried out during 2018-19

Name of the Disease	Type of animals Vaccinated	No. of animals vaccinated (nos in lakh)
Foot and Mouth Disease	Cattle, Buffalo, Sheep and Goat	141.61
Peste des Petits Ruminants	Goats	1.31
Blue Tongue	Sheep	3.31
Anthrax	Cattle, Buffalo, Sheep and Goat	88.04
Black Quarter	Cattle	3.56
Haemorrhagic Septicaemia	Cattle and Buffalo	0.94
Sheep Pox	Sheep	0.21
Enterotoxemia	Sheep	0.47
Ranikhet Disease	Poultry	305.39
Fowl Pox	Poultry	0.01
Rabies	Pet animals	0.73

The above vaccinations are done at or near the farmers' door steps by the field veterinary institutions. Every year, disease forecasting is done based on the outbreak of diseases during the preceding five years. Vaccination is being carried out before the expected onset of outbreak/ monsoon.

Foot and Mouth disease, a highly contagious, viral, vesicular disease of cloven-footed animals that causes heavy economic loss is controlled by implementing Foot and Mouth Disease Control Programme funded jointly by the State and Central Governments. So far, 16 rounds of FMD vaccination have been carried out in the State. The 15^{th} and 16^{th} rounds of vaccination of cattle and buffaloes were conducted during September 2018 and March 2019 covering 93,08,585 and 93,44,000 nos. respectively.

The emphasis on Foot and Mouth Disease control will continue in 2019-20 also during which the bi-annual vaccination shall be continued.

The vaccines for diseases like PPR and Blue Tongue are sourced from various Schemes of Government of India. Vaccines against economically important livestock diseases like Anthrax, Black Quarter, Haemorrhagic Septicaemia and Sheep Pox are produced in the Institute of Veterinary Preventive Medicine (IVPM), Ranipet. The funds for the same are sourced from the Centrally sponsored "Assistance to States for the Control of Animal Diseases" Scheme. All the vaccinations are carried out free of cost. Besides the vaccines mentioned above, IVPM manufactures Ranikhet Disease Vaccine, Fowl Pox Vaccine and Duck Plague vaccines also.

Brucellosis disease affecting cattle, Sheep and Goats is an economically important disease with zoonotic importance. This disease can be controlled only by vaccination. The department has proposed to undertake surveillance for the prevalence of Brucellosis in cattle during the year 2019-20 and initiate a vaccination

programme depending on the results of surveillance.

7.1 Institute of Veterinary Preventive Medicine, Ranipet (IVPM)

Institute of Veterinary Preventive Medicine was initially established at Madras in 1932 and called as “Serum Institute”. In 1942, the Institute was shifted to Coimbatore Agricultural College estate as an emergency measure due to World War II. In 1948, the Institute was shifted to the present campus of 129.5 acres at Ranipet. This is an Institute of repute and produces vaccines and biologicals for various livestock diseases.

Indian Council of Agricultural Research (ICAR) aided All India Coordinated Research Project (AICRP) on Foot and Mouth Disease (FMD), functioning from this Institute, undertakes investigation of FMD outbreaks, virus typing and sero-monitoring of vaccinated animals under FMD Control Programme. The institute was awarded Second Prize for Best Performance by the ICAR for the year 2013.

The institute is in the process of being upgraded to ‘Good Manufacturing Practices’ standards in collaboration with National Dairy Development Board (NDDB) and Tamil Nadu

Veterinary and Animal Sciences University (TANUVAS). The bacterial vaccine production laboratory is already GMP compliant and vaccine production is already underway from the upgraded laboratory. It is proposed to upgrade the 'Sheep Pox vaccine production laboratory' and the 'diagnostics manufacturing facility' to GMP standards. It is also proposed to upgrade the 'Quality control laboratory' to 'Good Laboratory Practice' (GLP) standards.

Table 8: Biologicals produced by IVPM during 2018-19

Sl No	Name of the biologicals produced	Doses
A.	**Bacterial Vaccines (doses in lakh)**	
1	Black Quarter vaccine	5.34
2	Haemorrhagic Septicaemia	2.97
3	Enterotoxaemia	0.59
4	Anthrax spore vaccine	27.08
B.	**Viral Vaccines (doses in lakh)**	
1	Ranikhet disease vaccine 'K'	510.91
2	Ranikhet disease vaccine 'F'	88.29
3	Ranikhet disease vaccine *'La Sota'*	54.99

Sl No	Name of the biologicals produced	Doses
4	Duck Plague vaccine	95.42
C.	**Diagnostics (in ml)**	
1	Brucella Abortus Coloured Antigen	7130
2	SPC Antigen	990
3	CMT Antigen	3,86,000
D.	**Diluents (in lakh litres)**	
1	Phosphate Buffer Saline	22,25,500

7.2 Disease surveillance, diagnosis and control

In order to monitor the vaccination programmes and ensure that all the susceptible livestock and poultry are covered, 28 Animal Disease Intelligence Units (ADIUs), two Poultry Disease Diagnostic Laboratories (PDDLs), one Veterinary Epidemiology Centre and one Central Referral Laboratory (CRL) are functioning in the State.

7.2.1 Animal Disease Intelligence Units (ADIU)

These units play a major role in disease forecasting, attending to outbreaks, conducting awareness camps, distribution of vaccines, monitoring of vaccination, collection of serum samples for sero monitoring for various diseases, especially Foot and Mouth Disease (FMD), *Peste-des-Petits* Ruminants (PPR) etc.,

These units are also responsible for monitoring the efficiency of vaccination, assess immune status of vaccinated animals, collection and testing of samples for surveillance of various diseases from simple parasitic infestations to serious zoonotic diseases like Brucellosis, Tuberculosis, Para Tuberculosis, Avian Influenza, Bovine Spongiform Encephalitis etc.,

Sophisticated instruments like haemanalyser, urine-analyser, biochemical analyser etc., are available at the ADIUs. Walk- in coolers and Ice Lined Refrigerators (ILRs) for storage of biologicals and vaccines are also provided to

these units for maintaining cold chain of vaccines.

ADIUs have been established in 28 districts except in Ariyalur, Kanyakumari, Ramanathapuram and Chennai. These districts are covered by the ADIUs of Perambalur, Tirunelveli, Sivagangai, and Kancheepuram ADIUs respectively.

7.2.2 Poultry Disease Diagnostic Laboratory (PDDL)

To cater to the needs of farmers in areas of high poultry production, Poultry Disease Diagnostic Laboratories are functioning at Andagalurgate, Namakkal District and at Erode. They are involved in diagnosis of poultry diseases by conducting post mortem, testing of droppings, blood samples and other specimens for viral diseases such as New Castle Disease, IBD, IB, Avian Leucosis Complex, common bacterial diseases like Salmonella, E.Coli, and Parasitic Infestations. These Bio Safety Level II (BSL II) laboratories carry out preliminary screening for Avian Influenza. A third PDDL is

under construction in collaboration with NDDB and TANUVAS at Palladam, Tiruppur district.

7.2.3 Veterinary Epidemiology Centre (VEC)

The Veterinary Epidemiology Centre was established on September, 2017 at Saidapet, Chennai-35. The Centre is guiding the Surveillance, Monitoring and Forecast of Livestock and Poultry diseases in Tamil Nadu. The Centre is headed by a Chief Epidemiology Officer in the cadre of Joint Director of Animal Husbandry. The objectives of this centre are:

- Control and co-ordinate Disease Diagnostic activities of the Animal Husbandry sector of the State.
- Undertake investigation during disease outbreaks and to provide inputs and remedial measures to the Animal Disease Intelligence units of the state to control outbreaks.
- Co-ordinate with Animal Disease Intelligence units and Poultry Disease Diagnostic Units in disease intelligence and risk assessment and forewarning in disease prevention.

- Bi-annual inspection of the private poultry farms along with members of special committee formed by the Directorate of Animal Husbandry and Veterinary Services, to check and verify compartmentalization regulations against Avian Influenza.
- Publish monthly Disease bulletins pertaining to important emerging livestock diseases and circulate to Veterinary institutions.
- Impart training to field veterinarians on recent disease diagnostic and advanced laboratory techniques.
- Conduct disease screening of breeding bulls whenever required.
- Monitor FMD-CP Vaccination work in the Districts.
- Preparation of Monthly Disease Forecast schedule for all ADIU's, Monthly and Annual Disease status, publication of Annual Bulletin, inspection of compartmentalized Poultry farms.

- Conduct meeting of Nodal Officers of Southern States in co-ordination with the Southern Regional Disease Diagnostic Laboratory and attend seminars conducted by various Government agencies related to livestock health.

7.2.4 Central Referral Laboratory (CRL)

Central Referral Laboratory, the apex laboratory of the State for diagnosis of livestock diseases in the department is located at IVPM, Ranipet, Vellore district plays a major role in disease confirmation by *Office International des Epizooties* (OIE) approved laboratory techniques and provides technical guidance to the Animal Disease Intelligence Units (ADIUs) / Poultry Disease Diagnostic Laboratories (PDDLs) to control livestock and poultry diseases during outbreaks. Central Referral Laboratory functions under the control of Director IVPM, Ranipet.

8. LIVESTOCK DEVELOPMENT

The department is continuously striving to improve the production and productivity of the livestock population through various measures

like increasing the number of milch cattle, improving the genetic composition of the breedable population through introduction of frontier technologies like embryo transfer technology at District Livestock Farm, Hosur, improving the infrastructure available in the department and fulfilling the diagnostic infrastructural needs, risk management and mitigation activities, fodder augmentation measures, conservation of indigenous livestock and poultry breeds / varieties, conducting outreach programmes, collaborating with research institutes like TANUVAS/ TNAU etc.

In order to address the requirement of cattle with higher genetic merit, the Department maintains 13 Farms, out of which 8 are Livestock Farms, 3 are Sheep Farms, one is a Poultry Farm and one is a Fodder Seed Production Farm. These Livestock Farms act as model units for demonstrating best practices and scientific techniques to the Livestock farmers.

8.1 CATTLE DEVELOPMENT

Tamil Nadu is home to approximately 88.14 lakh cattle and 7.80 lakh buffaloes as per

the 19th quinquennial livestock census. Out of this, 72.11% are cross bred and exotic cattle and 27.89% are indigenous cattle.

The State has a robust breeding policy that encourages rearing of Indigenous cattle in their respective native tracts, exotic cattle in hilly regions and cross bred cattle in the plains. While the indigenous cattle are being conserved by breeding the females using frozen semen straw of the same breeds, the non descript cattle are genetically upgraded by Artificial insemination using Native breed, cross bred and exotic frozen semen.

Table 9: Bovine Breeds maintained in the Departmental Farms

Sl. No	Name of the Farm	Type of animal	Breeds
1	Exotic Cattle Breeding Farm, Eachenkottai (Thanjavur District)	Cattle	Jersey, Crossbred Jersey, Umblachery,
		Buffaloe	Murrah
2	District Livestock Farm, Hosur (Krishnagiri District)	Cattle	Crossbred Jersey, Crossbred Holstein Friesian,Red Sindhi, Kangayam, Bargur and Pulikulam

Sl. No	Name of the Farm	Type of animal	Breeds
3	District Livestock Farm, Abisegapatti (Tirunelveli District)	Cattle	Crossbred Jersey and Sahiwal
4	District Livestock Farm, Udhagamandalam (The Nilgiris District)	Cattle	Jersey, Crossbred Jersey, Holstein Friesian and Crossbred Holstein Friesian
5	District Livestock Farm, Pudukottai (Pudukottai District)	Cattle	Crossbred Jersey
6	District Livestock Farm, Naduvur (Thanjavur District)	Cattle	Jersey, Crossbred Jersey and Crossbred Holstein Friesian
		Buffaloe	Murrah
7	District Livestock Farm, Chettinad (Sivagangai District)	Cattle	Crossbred Jersey, Crossbred Holstein Friesian,Tharparkar and Sahiwal
8	Livestock Farm, Korukkai Thiruvarur District)	Cattle	Umblachery

During the year 2018-19, 475 calves were born in the Department Livestock Farms and 41 calves were sold to the livestock farmers for breeding purposes. The Departmental Farms produced 4.69 lakh litres of milk during 2018-19.

The department is also actively encouraging the establishment of mini dairy units comprising of six cows along with other inputs like cattle sheds and fodder cultivation. This model of mini dairy provides continuous income throughout the year. The size of the mini dairy also increases with each passing year. This is the first step towards commercial milk production.

Embryo Transfer Programme is being successfully implemented so as to produce Bull calves with High Genetic Merit which will be used as Bulls in future for Frozen Semen Production. The programme is being implemented in 12 Districts, keeping DLF, Hosur as its hub. So far, 286 calves which includes 145 males and 141 females have born through the programme. The male calves are procured from farmers at the rates fixed by the government. The farmers

are allowed to retain the superior quality female calves born to their animals.

The department will also introduce the technology of Semen sorting in which the sperms responsible for producing male calves are eliminated and as a result only heifer calves shall be produced. This technology is widely available and the same will be adopted for the benefit of dairy farmers. This would also address the problem of competition for the scarce feed resources by the male calves.

The department farms will continue to provide quality off-springs to the public by employing innovative tools like Embryo Transfer and In-Vitro Fertilization with particular focus on conservation and propagation of indigenous breeds during 2019-20.

8.1.1 Scheme for Free Distribution of Milch Cows

In order to usher in a radiant second white revolution with a view to improve rural economy and to increase the cross bred cattle population in the State, the Government of Tamil Nadu

introduced the “Free distribution of Milch Cows” Scheme with particular focus on empowering rural women.

This Scheme also ushered in the shift in focus of the department towards “Production management approach”. The Scheme gave importance to a cluster approach in which 50 beneficiaries from a single village were provided income generating assets. The post purchase follow up of the animals while ensuring the individual animal health also ensured that the other cattle in these beneficiary villages were provided managemental inputs and thus the entire cattle population in these villages were benefitted. Skill development of the beneficiaries resulted in a multiplier effect with other farmers also benefitting from the improved managemental practices adopted by the beneficiaries of the Scheme.

Salient Features

- The Scheme is implemented in 21 Districts from 2011-12 to 2017-18 and was extended to 8 more districts during 2018-19.

- The distribution of milch cows is taken up in those Village Panchayats where there were no Milk Producers Cooperative Societies. Consequent to the distribution of milch cows, Milk Producers Cooperative Societies are formed in those village panchayats and milk is procured from beneficiaries.
- Beneficiary should be a woman.
- Milch Cows that are in their 1st or 2nd lactation are procured from within the State/neighbouring States and the beneficiaries themselves select their cows.
- Insurance of animals is done at Government cost at purchase spot itself.

Eligibility criteria

- Selection of beneficiaries is done by Village Level Committee (VLC) consisting of Village Panchayat president, Vice-President, Senior most

ward member representing SC / ST community, Panchayat level Federation Coordinator, Secretary of the Village Poverty Reduction Committee (VPRC) / Self Help Group representative, Veterinary Assistant Surgeon and Zonal Deputy Block Development Officer. The beneficiary list is approved by the Grama Sabha of the panchayat. In case of Milch cow beneficiary selection, the Extension officer or Senior inspector from Office of Deputy Registrar Dairy is included in the Village Level Committee. In the absence of elected members to the offices of the President, Vice president, senior most ward member representing the SC/ST communities, the Special Officers shall be the member of the selection committee till the elected body comes into existence.

- Beneficiary should be a woman. Priority will be given to widows, destitute, physically challenged and transgenders.

- Beneficiary should be a permanent resident of the concerned Village Panchayat and below 60 years of age.
- At least 30% of beneficiaries should necessarily belong to SC / ST Communities.
- Beneficiary / their close relatives should not be employee of Central / State Government or any Organization/ Co-operative or member of any local body.
- In addition, those who possess less than one acre of land in their own name or family members name can be a beneficiary.

Achievements

Under Free Distribution of Milch Cows Scheme, since 2011-12, a total of 87,444 women beneficiaries were provided with 87,444 milch cows.

Approximately 2.66 lakh litres of milk is being produced per day through these milch

cows and 1,76,153 calves worth Rs.88 crore were born. This has led to the economic upliftment of the rural poor women. This flagship Scheme that has empowered the rural poor women economically will be continued by providing 12,000 Milch cows to 12,000 beneficiaries for the year 2019-20.

8.2 SHEEP AND GOAT DEVELOPMENT

In Tamil Nadu, Sheep and Goats are reared by resource poor farmers, mostly in traditional systems as sheep and goat rearing requires low input and rearing them is easy. There exists a growing demand for mutton and chevon. The supply-demand scenario suggests that the demand for livestock products is insufficient and the demand is rising continuously. Over the next two decades, demand for livestock products is likely to grow faster. The non-availability of good quality livestock in the open market and its spiralling prices are problems faced by the entrepreneurs / farmers in this sector.

The department is undertaking measures for improving the production and productivity of the

Sheep and Goat population in the State. Improving the genetic pool of meat animals through livestock farms, addressing the nutritional deficiencies of sheep and goats by providing mineral mixtures to farmers, training the farmers on best practices etc. are some important initiatives undertaken by the department for Sheep and Goat Development. As a measure of fast tracking the genetic improvement of sheep and goats, the department is proposing to implement Artificial Insemination in Mecheri breed of Sheep on a pilot basis. This is expected to address to infertility related issues besides upgradation of local sheep breeds with a resultant improvement in production parameters like birth weight, weight gain, weaning weight etc., for maximising the economic gains to the sheep rearers.

Table 10 : Small Ruminant Breeds maintained in the Departmental Farms

Sl. No	Name of the Farm	Type of animal	Breeds
1	District Livestock Farm, Hosur (Krishnagiri Dist.)	Sheep	Mecheri
		Goats	Tellichery, Kodi Adu, Salem Black
2	District Livestock Farm, Abisegapatti (Tirunelveli Dist.)	Sheep	Keelakarisal
		Goat	Kanni
3	District Livestock Farm, Pudukottai (Pudukottai Dist.)	Sheep	Ramnad White
		Goats	Jamunapari
4	District Livestock Farm, Chettinad (Sivagangai Dist.)	Sheep	Ramnad White
		Goats	Jamunapari, Tellichery
5	Sheep Farm, Chinnasalem (Villupuram Dist.)	Sheep	Mecheri, Madras Red
		Goats	Salem Black, Tellichery
6	Sheep Farm, Mukundarayapuram (Vellore Dist.)	Sheep	Madras Red
7	Sheep Farm, Sathur (Virudhunagar Dist.)	Sheep	Vembur
		Goats	Kanni Adu

During the year 2018-19, 865 lambs and 909 kids were born in the Department Livestock Farms and 381 lambs and 569 kids were sold to the livestock farmers for breeding purposes.

8.2.1 Scheme for Free Distribution of Goats/ Sheep

The Government of Tamil Nadu announced the implementation of 'Scheme for Free Distribution of Goats/Sheep' to the poorest of the poor in the State in order to improve their living standards.

A "production management centric approach" was adopted while implementing this Scheme. During the previous years of implementation of this Scheme, target has been alloted to each village panchayat at the ratio of 1:50 in the population from 2011-12 to 2017-18. During 2018-19, instead of a restricting to definite number of beneficiaries in a village, all the eligible beneficiaries in that village were provided with Goats/Sheep. A production cluster was thus established which enabled adoption

and harmonization of best practices in Goat / Sheep husbandry among all the farmers in the beneficiary village. Resultantly, instead of a small sub population benefitting from improved management practices, all the beneficiaries benefitted as a large number of Goat/Sheep farmers were created.

Salient features

- Each beneficiary is provided with 1 male and 3 female goats / sheep which are around 6-8 months of age.
- Goats / Sheep are purchased from local shandy by beneficiaries themselves.
- Insurance of animals is done at Government cost at purchase spot itself**.**

Eligibility criteria

- Selection of beneficiaries is done by Village Level Committee (VLC) consisting of Village Panchayat president, Vice-President, Senior most

ward member representing SC / ST community, Panchayat level Federation Co-ordinator, Secretary of the Village Poverty Reduction Committee (VPRC) / Self Help Group representative, Veterinary Assistant Surgeon and Zonal Deputy Block Development Officer.

- The beneficiary list is approved by the Grama Sabha of the panchayat. In the absence of elected members to the offices of the President, Vice president, senior most ward member representing the SC/ST communities, the Special Officers shall be the member of the selection committee till the elected body comes into existence.

- Beneficiary should be a woman. Priority will be given to widows, destitute, physically challenged and transgenders.

- Beneficiary should be a permanent resident of the concerned Village

Panchayat and below 60 years of age.

- For effective rearing of animals, one of the members of the family must be between 18 and 60 years of age.
- At least 30% of beneficiaries should necessarily belong to SC / ST Communities.
- Beneficiary / their close relatives should not be employee of Central / State Government or any Organization / Co-operative or member of any local body.
- The beneficiary should be landless agricultural labourer.

Achievements

A total of 10,22,152 poorest of the poor women have been provided with 40,88,608 Goats / Sheep since 2011-12.

Approximately 73 lakh kids worth Rs.1,825 crore have been obtained from the

goats/sheep distributed. This has led to the economic upliftment of the rural poor women.

This flagship Scheme that have empowered the rural poor women economically, will be continued by providing 6,00,000 Goats / Sheep to 1,50,000 beneficiaries at no cost during 2019-20.

8.2.2 Genetic upgradation of sheep

The Department is undertaking a programme to genetically upgrade Mecheri sheep covering the districts of Salem, Tiruppur, Karur and Dharmapuri through natural service by using genetically superior Mecheri sheep at a total cost of Rs.5.25 crore. Over a 5 year period, totally 36,117 upgraded Mecheri lambs are expected to be added to the population.

Goal 2 of the SDG aims to end hunger and all forms of malnutrition. The livestock sector through production of milk, eggs and meat provides the best sources of nutrition to the rural poor and the urban rich. The per capita availability of milk, meat and eggs have consequently increased in Tamil Nadu.

8.3 POULTRY DEVELOPMENT

8.3.1 Scheme for Poultry Development

To replicate the success of poultry farming in Namakkal District, during 2012-13, the Government of Tamil Nadu have launched a scheme for development of Poultry Clusters in the non poultry backward regions of the State with an outlay of Rs.22.35 crore, particularly in Villupuram, Cuddalore, Ariyalur and Perambalur districts of Villupuram region and Tirunelveli, Thoothukudi and Virudhunagar districts of Sankarankovil region.

In order to enhance the livelihood opportunities and promote entrepreneurship in rural areas 2,961 Broiler farms, 18,545 Native chicken farms were established under the 'Scheme for Poultry Development' in 25 Districts at a total cost of Rs.141.10 crore during the last six years i.e., from 2012-13 to 2017-18.

During the financial year 2018-19, 'Distribution of Aseel birds free of cost under the Scheme for Poultry Development' is being implemented at an outlay of Rs.50.00 crore in

order to encourage rural backyard poultry rearing.

8.3.1.1 Scheme for distribution of free Aseel birds

As there is a growing demand for desi egg and meat, Native poultry rearing is becoming an important avocation in Tamil Nadu. In order to encourage Native poultry rearing in rural areas, under the 'Scheme for Poultry Development' the Department proposed to provide 50 numbers of Aseel birds along with night shelters to 77,000 women beneficiaries in the village panchayats in all districts except Chennai at a total cost of Rs.50.00 crore during 2018-19. So far 65,580 women beneficiaries have been provided with Aseel birds. The rest of the beneficiaries are being provided during the current year. This cluster approach is expected to harmonize the best practices to be adopted in native chicken rearing in the backyard at low input technology thereby paving the way for improved productivity, augmenting rural household income and provides for collective bargaining power to resource poor people.

Eligibility Criteria for Beneficiaries:

1. Women farmers with Participatory Identification of Poor (PIP) allotment number as provided by Tamilnadu State Rural Livelihood Mission were selected.

2. Women belonging to Self Help Groups registered with Tamilnadu State Rural Livelihood Mission were given preference.

3. The beneficiaries selected have not benefitted from free milch cow, goat/ sheep scheme or poultry schemes during previous years.

4. Preference was given to widows, destitutes and physically challenged.

5. 30% of the beneficiaries selected were from SC/ST category.

The beneficiaries were selected on a cluster basis. With each cluster covering 5-6 neighbouring villages in the same block, convergence of resources for supply or procuring

of inputs and marketing of products is made easy. Each beneficiary is provided with a total of 50 chicks that are 4 weeks old comprising of male and female chicks of equal sex ratio. In next 16 weeks, 20 cocks can be sold and hatching eggs can be produced with the remaining 25 hens and 5 cocks, for continuous production of eggs and chicks. This scheme empowers women and enables them to get sustainable income.

During the current year, it is proposed to extend the scheme to benefit women beneficiaries in 528 Town panchayats also in 31 districts at a total cost of Rs.50.00 crore.

8.3.2 Innovative Poultry Productivity project for Low Input Technology birds and broilers

The Department is also encouraging the rearing of Low input technology dual purpose birds (LIT) (Giriraja, Vanaraja, Gramapriya etc.,) that are capable of producing both egg and meat with minimum investment and maintenance cost. The Scheme is being implemented under “National Livestock Mission” with financial

assistance of 60% from Central Government and 40% from State Government in Dharmapuri and Ramanathapuram Districts at a total outlay of Rs.100 lakh. As per the Scheme, 400 beneficiaries were selected from the two districts (200 per district) and provided funds for procurement of 200 birds each along with night shelter in the first year and after a gap of 72 weeks second batch of 200 birds will be provided to the same beneficiary.

During the current financial year, the Department will handhold the above beneficiaries and a financial assistance of Rs.40 lakh is being provided to procure 80,000 LIT birds.

Besides this, an Innovative poultry productivity project for broilers was implemented in Tiruvannamalai district wherein 200 beneficiaries were provided fund for purchase of 600 birds in four batches of 150 birds. A total fund of Rs.225 lakh has been provided for construction of sheds, procurement of feed, feeder, waterer and to purchase 1,20,000 birds. The fund for the same is sourced

from the National Livestock Mission with 60% assistance from Central Government and 40% from State Government.

During the current financial year 2019-20, the scheme will be implemented in Villupuram District to benefit 200 beneficiaries at a total cost of Rs.225 lakh.

8.3.3 Poultry Units in Departmental Farms

The Department maintains poultry units in 3 Farms. These Farms act as model units for demonstrating best practices and scientific techniques to the poultry farmers.

Table 11: Poultry breeds maintained in Departmental Farms

Sl. No	Name of the Farm	breeds
1	District Livestock Farm, Hosur (Krishnagiri District)	Aseel
2	District Livestock Farm, Abisegapatti (Tirunelveli District)	Vanaraja, Giriraja, Aseel

Sl. No	Name of the Farm	breeds
3	Poultry Farm, Kattupakkam, (Kancheepuram District)	Vanaraja, Giriraja, Aseel, Nicobari, Kadaknath, White Leghorn
		Guinea fowl

8.3.3.1 Native chicken breeding complex at District Livestock Farm, Hosur

In order to cater to the increasing demand for native chicken in the State, a Native Chicken Breeding Complex comprising of Grower, layer houses and hatchery complex is being established in the District Livestock Farm, Hosur, Krishnagiri District, at an total outlay of Rs.6.74 crore, to produce and supply approximately 10 to 12 lakh chicks annually. The funds for the scheme have been sourced from the National Agriculture Development Programme.

8.4 Pet Animal Oriented Services

The department undertakes animal birth control (ABC) measures in collaboration with the municipal authorities under the ABC programme

to reduce stray dog population in the State. A total of 10,07,917 castrations and 6,233 spaying surgeries have been performed by the veterinary institutions in the State during 2018-19. A total of 72,868 dogs were also vaccinated against rabies as a public health initiative. A total of 8,846 dogs were vaccinated against Canine distemper, Leptospirosis, Parvovirus and Infectious canine Hepatitis diseases.

8.4.1 Dog breeding Unit, Saidapet

Tamil Nadu possesses excellent native dog breeds such as Rajapalayam, Chippiparai and Kanni. To conserve and propagate these native breeds, a Dog Breeding Unit is functioning at Saidapet, Chennai since 1980. Puppies are sold to the public based on their registration seniority at the price fixed by the Government.

8.5 FODDER DEVELOPMENT

Feed and fodder are the major limiting factors in enhancing livestock productivity. Feeding is the major input component of livestock production accounting for 55-60 per

cent of the total cost of production. Therefore, judicious feeding is the most important component of economical farming. Livestock must be fed with a balanced ration incorporating all nutrients in right proportions.

It has been the endeavour of the department to create awareness among livestock farmers that fodder crops are also cash crops more so in the context that this subsector of agriculture contributes in a large measure to the agriculture GSDP, and this is supplemented by various initiatives since 2011-12. To promote fodder development, the Government ordered not to transfer the grazing lands for other purposes unless alternate land of the same extent is developed for grazing in the same district.

Both quantitatively and qualitatively, there exists a substantial gap between the demand and supply of green fodder. To reduce gap between the demand and supply of feed and fodder through enhancement of production and efficient utilization of available resources, the Government is implementing State Fodder Development Scheme since 2011-12 for which

a sum of Rs.190 crore has so far been allocated. It has been ensured that atleast 30% of the beneficiaries selected under each component belong to SC / ST Communities.

The following initiatives have been taken up by the department to bridge the gap between availability and demand of green fodder in the state:

As a measure of mainstreaming fodder cultivation by farmers, cultivation of high bio mass yielding fodder crops such as Co-4, Co-5, fodder Sorghum, along with cow pea, desmanthes in farmers' own lands is being aggressively propagated by the department since 2011-12. As a consequence, about 3.51 Lakh acres of farmers' holdings have been brought under green fodder cultivation across the State thereby producing approximately 230.38 LMT of green fodder. The inputs like fodder seeds/ planting material are provided at 100% subsidy to the farmers.

Supplementing the cultivation efforts, the department is promoting the usage of chaff cutters among farmers with a view to reduce

wastage of fodder as well as to improve its digestibility. So far, 12,703 Chaff cutters have been distributed to farmers @ 75% subsidy.

Farmers are also sensitized on the technology to conserve surplus fodder to overcome scarcity of fodder during lean periods by distribution of silage making bags for ensiling the surplus fodder. Around 40,000 numbers of 250 kg capacity silage bags were distributed free of cost to 10,000 farmers @ 4 bags / farmer.

As a measure of water conservation and to enhance the productivity of crop by effectively utilizing the available water, 10,483 Rain guns were installed in farmers' fields at 75% subsidy.

The department is also propagating alternate fodder sources that require locally available low cost inputs and produce nutritious fodder. Azolla - a low cost feed substitute that considerably reduces feed cost is promoted among farmers. A total of 30,958 Azolla units have been established throughout the State for which inputs are provided free of cost.

To enlighten the farmers on feeding tree fodder to the animals, saplings of various tree fodder varieties like Kalyanamurungai, Velvel, Agathi, Subabul, Camelia, Glyricidia etc, were raised in departmental farms and 72.5 lakh numbers of seedlings have been distributed to farmers.

As a measure of promoting alternate fodder cultivation method, the department is promoting Hydroponic fodder cultivation technique among farmers. A total of 3,600 such units have been established in the state for which 75% subsidy is provided. The above endeavours shall be continued in 2019-20 at an outlay of Rs.25 crore.

To ensure timely supply of seeds to the farmers, fodder seed production units have been established in seven Department Livestock farms. The departmental farms produce and supply green fodder, certified seeds, fodder slips, fodder tree saplings and vermicompost to farmers. Further, alternative fodder sources like Hydroponic fodder and Azolla (which is rich

source of protein) demonstration units are also maintained in the farms.

8.5.1 Sustainable fodder production initiatives in department farms

In order to ensure uninterrupted supply of required green fodder to the animals reared the DLF, Hosur is strengthened with adequate infrastructure facilities to bring in 100 acres of new area under irrigated green fodder cultivation and to rejuvenate 100 acres of pasture lands of the farm at an outlay of Rs.3.509 crore. The scheme is under implementation.

As a continuing measure of improving the availability of quality fodder seeds, lands available at District Livestock Farms have been earmarked for raising foundation class Cowpea seeds. Approximately 10 quintals of cowpea seeds shall be produced and distributed to farmers so as to cover 62.50 acres. These shall be utilized for fodder seed production or fodder production by the farmers in their own lands to cover 62.5 acres either for seed production (250 quintals) or for green fodder production

(750 tons green fodder) at a cost of Rs.1.00 lakh.

A green initiative has also been started in the department farms in which fodder trees are being cultivated in 600 acres in Chettinadu and Hosur (200 acres each) Abisegapatti and Pudukottai (100 acres each). A total of 1.95 lakh tree saplings of Kalyanamurungai, Neem, Soobabul, Glyricidia etc is being planted thus serving the cause of fodder as well as an environment friendly initiative.

Table 12: Details of Fodder Production & Distribution in Departmental farms (2018-19)

S. No	Name of the Farm	Area under Fodder cultivation (in Acres)	Fodder Production (MT)	Fodder Slips distributed to farmers (nos)	Fodder seed distributed to farmers (MT)	Tree fodder seedlings distributed to farmers (Nos)
1	DLF, Abhishegapatti	91	683	500	0	1,00,000
2	DLF, Chettinad	578	3,008	5,39,650	0	1,25,000
3	Sheep Farm, Chinnasalem	13	677	0	0	1,00,000
4	ECBF, Eachenkottai	175	2,603	12,89,780	2.624	1,00,000
5	DLF, Hosur	129	3,417	13,000	0	1,00,000
6	LF, Korukkai	48.42	1,594	0	0	1,00,000

S. No	Name of the Farm	Area under Fodder cultivation (in Acres)	Fodder Production (MT)	Fodder Slips distributed to farmers (nos)	Fodder seed distributed to farmers (MT)	Tree fodder seedlings distributed to farmers (Nos)
7	DLF, Ooty	48	1109	0	0	0
8	DLF, Naduvur	75	1,697	0	0	1,00,000
9	DLF, Pudukottai	50	1,111	0	0	1,00,000
10	Sheep farm, Sathur	29.5	144	8,000	0	50,000
11	Sheep Farm, Mukundarayapuram	14.4	164	500	0	50,000
12	Padappai	7.5	5.32	3,44,600	0	75,,000
	Total	1,258.82	16,212.32	21,96,030	2.624	10,00,000

Through all these measures, the department has successfully driven home the concept of fodder cultivation in farmers own lands which over a period of time shall address the gap between availability and demand of fodder in the State.

9. VETERINARY INFRASTRUCTURE

The department provides veterinary Services like health cover, clinical services, disease prevention, disease eradication and breeding support through an array of veterinary institutions like Polyclinics, Clinician Centres, Veterinary Hospitals and Veterinary

Dispensaries. Disease prevention, control and eradication are undertaken through Animal Disease Intelligence Units and Poultry Disease Diagnostic Labs and a Veterinary Epidemiology Centre as required from time to time. There are 13 livestock farms, including 3 sheep and goat farms, one exclusive poultry breeding farm and one fodder farm. Livestock farms are maintained for through selective scientific breeding of livestock and they function as live gene banks.

The veterinary institution has transformed itself from being a facility for providing treatment for ailing livestock to being a knowledge resource centre. Farmers can access any veterinary institution within their vicinity for availing any of the services. Hence it is imperative that all the institutions are provided with appropriate infrastructure. Improved infrastructure will result in improved veterinary services, with a consequent increase in the overall productivity. With the ultimate aim of rural development, the Department's infrastructure is being developed with assistance from NABARD Rural Infrastructure Development Fund (RIDF), National

Agriculture Development Programme, Establishment and Strengthening of Veterinary Hospitals and Dispensaries and State funds. This has enabled provision of effective services besides transforming the veterinary institution into a knowledge resource centre.

During the period from 2011-12 to 2018-19, 2,037 veterinary institution buildings were newly constructed at a total cost of Rs.614.57 crore through various Schemes.

The vaccine production laboratories in Institute of Veterinary Preventive Medicine, Ranipet is being upgraded into a world class 'Good Manufacturing Practice' (GMP) compliant laboratory. The works are being undertaken in collaboration with Tamil Nadu Veterinary and Animal Sciences University and the National Dairy Development Board. Further, a high tech Poultry Disease Diagnosis Lab and feed testing lab is also under construction at Palladam in Tiruppur District to provide disease diagnostic as well as feed testing facilities to the poultry farmers in nearby districts.

Table 13: Scheme wise fund allocation for Infrastructure Development

S. No	Name of the Scheme	No. of Buildings	Total Allocation (Rs. in crore)
1	State Fund	22	46.51
2	ESVHD	256	25.51
3	NADP	95	16.66
4	NABARD	1,664	525.89
Total		**2,037**	**614.57**

During the 8 year period from 2011-12 to 2018-19 repair and renovation works were carried out in 1,383 veterinary institutional buildings at an outlay of Rs.95.10 crore.

The improved infrastructure has resulted in increased case loads at the Veterinary institutions from 222.45 lakh during 2017-18 to 372.72 lakh during 2018-19 and number of deworming performed increased from 272.42 lakh to 346.58 lakh during the same period.

10. EXTENSION AND OUTREACH PROGRAMMES

In our State, diversification from 'crop based rural economy' into animal husbandry based integrated farming system should be given high priority so as to ensure food and nutritional security, rapid economic development, generate equitable income, employment and environment sustainability. This alone can reduce the sole dependence on rain fed agriculture and pave the way for doubling farmers income. To achieve this objective, importance needs to be given to landless and marginal farmers who hold a majority of the livestock by bringing them into organised fold of livestock rearing. These farmers need to be imparted knowledge and skills on the best practices in feeding, breeding and management which will make livestock rearing a profitable avocation. This objective can be achieved through outreach programmes, conducting livestock fairs, health camps with focussed attention to particular ailments and conditions that impair production and productivity of the livestock. Camp approach with delivery of a host of veterinary services at

or near the doorsteps coupled with training on best practices would only ensure higher returns for the farmers.

The department is also establishing Azolla fodder plots and Hydroponic fodder units at the veterinary Institutions located at block headquarters. These techniques can be adopted by the farmers since the technology is demonstrated. The veterinary institutions provide the technology and the source of inputs required for these techniques. The department is also in the process of developing a mobile application for issuing advisories on various issues related to livestock rearing for the benefit of the farming community.

The Livestock sector addresses the Goal 4 of the SGD which is Quality education by providing sustainable livelihood opportunities and income generation through distribution of income generating assets which helps the rural poor to educate their families continuously.

10.1 Provision of Drinking water to Livestock

Consequent to the declaration of Hydrological drought in 24 Districts of the State, the department has proactively addressed the requirement of potable drinking water to livestock. The department on its own as well as in collaboration with Rural Development and Panchayat Raj department has established drinking water troughs in veterinary institutions along with provision of water source. Water troughs are available in 1,215 veterinary institutions located in rural areas. The department has ensured that the livestock do not suffer from water stress and thus loss of productivity with a consequent economic loss is avoided.

10.2 Mission on Sustainable Dry land Agriculture (MSDA)

With an objective to optimize the health and productivity of the cattle in dry land areas by providing area specific nutrients, the department is endeavouring to improve the reproductive efficiency of the crossbred cattle by conducting reproductive health camps, to

optimise the udder health by identifying sub-clinical mastitis and thereby improving the productivity. In Phase-I this project was implemented in 25 districts at a cost of Rs.20 crore and in Phase-II the programme is being implemented in 24 districts at a cost of Rs.40 crore.

10.2.1 Optimising nutrient profile of cattle

A total of 1,000 Crossbred cows belonging to the farmers in the Dryland clusters and identified as nutritionally deficient are being provided with area specific mineral mixture (@14 kg/animal/year) in phase I and 950 animals are provided area specific mineral mixture in phase II to improve their general health status for a period of one year.

10.2.2 Optimising reproductive health

150 cattle and buffaloes / cluster that are identified as problem breeders will be provided with Reproductive health package including antibiotics, supportive, intra-uterine infusions, hormones, anti-inflammatories, uterine ecbolics will be procured through TNMSC and TANUVAS

and two artificial insemination charges also provided to each animal.

10.2.3 Optimising udder health of cattle

150 crossbred cattle in a cluster with poor milk production will be tested and identified for subclinical mastitis and provided treatment with the udder health package procured through TNMSC, TANUVAS and IVPM.

The above programmes were implemented in 25 districts covering 200 clusters where dry land agriculture is practiced for which a sum of Rs.20 crore has been allocated and in Phase-II covering 400 clusters in 24 districts at a cost of Rs.40 crore.

10.3 Integrated Farming System

2,500 Integrated Farming units have been established in farmers' fields in five districts viz, Erode, Madurai, Thanjavur, Tirunelveli and Villupuram under NADP funds. Animal Husbandry Department provides technical assistance for purchase, insurance and health care of the animals. Preference is given to the small and marginal farmers. For Wetland

farmers, 2 milch cows, 5 +1 number of Sheep / Goat, 10 number of Backyard poultry birds / Ducks were provided at 50% subsidy.

For Garden land farmers, 2 milch cows, 5+1 number of Sheep / Goat, 10 number of Desi poultry birds / Turkey / Quail / Rabbit as per choice of farmer were provided at 50% subsidy. Whereas for rainfed farmers, 2 milch cows, 5 + 1 number of Sheep / Goat and 10 number of Desi poultry birds were provided at 50% subsidy. For all farmers inputs like feed, concentrate and mineral mixture were also provided.

10.4 Livestock Protection Scheme

Under Kalnadai Padhukappu Thittam, special veterinary health camps are conducted as a part of the extension endeavour of the department in which the veterinary institution is taken to a remote village and all the services are provided there. A total of 5,500 special camps are conducted every year in all the Panchayat Unions at a total outlay of Rs.2.31 crore and 53.08 lakh livestock and poultry were benefitted.

During 2019-20 also this outreach activity shall be continued.

It is proposed to conduct a campaign for production of “antibiotic residue free milk” to the dairy farmers in the State in collaboration with Food Safety and Standards Authority of India (FSSAI) department through these camps. Publicity materials regarding the same shall be prepared in vernacular for the benefit of dairy farmers. Pen side tests shall also be conducted to demonstrate the presence of antibiotic residues in milk as a part of the campaigns.

The Animal Husbandry Department is addressing the Goal 5 of SDG namely Gender equality by specifically targeting the women in the families for all beneficiary oriented programmes since livestock rearing is a women centric avocation and thus the cause of women empowerment which is SDG 5 is achieved. A total of more than 10 lakh beneficiaries of the Free Distribution of Milch Cows and Goats / Sheep Schemes and all the 77,000 beneficiaries of the Free Distribution of Native Chicks that are under implementation since 2011-12 have only women as the beneficiaries.

10.5 Establishment of Salem Integrated Livestock Park

Considering the potentials of the livestock and poultry sub sectors to uplift and sustain the rural economy, the Government of Tamil Nadu, is providing substantial support to these sub sectors in terms of improving infrastructure, upgrading manpower utilisation and augmenting post production technologies to further harness the potential benefits of these sub sectors to ensure viable rural development.

To further enhance and fully harvest the potential benefits of the livestock and poultry sub sectors it is proposed to establish an Integrated Livestock Park encompassing the latest technologies and practices of the Animal Husbandry, Dairying and Fisheries sectors.

10.6 Livestock fairs and Exhibitions

Extension and propaganda are important tools for imparting skills and knowledge in basic and modern animal husbandry practices, which in turn can play a vital role in solving many field problems and in containment of diseases that

cause economic losses. Moreover, it can make the schemes and programmes implemented by the Department more transparent to the public.

During the year 2018-19, a sum of Rs.10.50 lakh was allocated for participating in fairs conducted in various districts. The department participated in various fairs across the state such as trade fair in Vellore, Coimbatore, Madurai, Thanjavur, Tirunelveli, Thiruvannamalai, Salem, Kanniyakumari and Thiruchirapalli districts. The department also participated in area specific special events such as Kodaikanal Kodai Vizha in Dindigul, Yelagiri Kodai Vizha in Vellore, Valvil Ori Vizha in Namakkal, Deepam Thiruvizha in Thiruvannamalai, Yercaud Kodai Vizha in Salem and Mangani Fair in Krishnagiri districts.

The Animal Husbandry Department is thus able to simultaneously address the social, environmental and economic dimensions of the 2030 agenda. This sector has the ability to broad base its objective from fostering sustainable production to enhancing the contribution of this sector to achievement of the SDG 2030.

Apart from the fairs, the department participated in the 45th Trade Fair and Exhibition held during January 2019 to March 2019, at Island Grounds Chennai and also in Republic Day Parade Pageantry at Chennai.

10.7 GAJA cyclone Relief works

In the early hours of 16th November 2018, Cyclone Gaja made a landfall at Vedaranyam of Nagapattinam district, with torrential rains and winds of up to 120 kmph, left a trail of destruction in the coastal areas of Tamil Nadu. The livelihood of the vulnerable communities predominantly in the districts of Nagapattinam, Thiruvarur, Pudukottai, Thanjavur, Sivagangai, Cuddalore and Dindigul districts was devastated. The cyclone also caused death of around 17,816 livestock and 3,50,434 poultry valued at Rs.15.04 crore belonging to 7,453 farmers.

10.7.1 Relief measures undertaken by Animal Husbandry Department

A total of 1,912 relief camps were conducted in which 73,049 large animals and 1,78,578

small animals benefitted. Relief measures valued to the tune of Rs.120.47 lakh was provided to animals in distress. This includes medicines and supplements valued at Rs.111.42 lakh, 71.90 MT of Dry fodder and 85.40 MT of Green fodder distributed to the affected livestock and 31,641 kgs of Mineral mixture distributed to maintain the productivity of the livestock.

10.7.2 Funds released by the government

1. As per G.O.Ms No.458 Revenue and Disaster Management Department Dt 20.11.2018 a sum of rupees Rs.1.27 crore was released towards compensation for death of livestock.

2. In G.O.Ms No.476 Revenue and Disaster Management Department Dt 4.12.2018 a sum of Rs.3.31038 crore was released as second instalment towards compensation for death of livestock.

10.8 World Bank Assisted Tamil Nadu Irrigated Agricultural Modernisation Project (TN IAMP)

Animal Husbandry Department is one of the line departments involved in implementation of World Bank Assisted Tamil Nadu Irrigated Agricultural Modernisation Project. Animal husbandry activities are to be implemented in 66 sub basins covering 31 districts at a total out lay of Rs.38/- crore over a period of 6 years.

Under Phase I, the World Bank has provided clearance for implementing animal husbandry activities in 18 sub basins covering 22 districts at a total outlay of Rs.20.39 crore for 6 years. During 2019-20, the following animal husbandry activities are under implementation in 18 sub basins of Phase I at a total cost of Rs.4.16 crore.

- 1.38 lakh artificial inseminations are proposed to be performed at the farmer's doorsteps.
- Calf Management Demos will be conducted by periodically deworming and

providing mineralized salt licks to 3,300 calves.

- Mastitis Management Demos will be conducted by providing mastitis prevention kit to 3,960 milch animals and treatment kit to 1,188 milch animals.
- Infertility management Demos will be conducted by conducting 528 fertility camps and programmed breeding in 5,280 animals.
- 660 hectares will be brought under fodder cultivation by supply of fodder cholam, fodder maize and cow pea free of cost.
- 44 follow up meeting will be conducted for the 44 Dairy Interest Groups.
- To strengthen diagnostic services, 4 ADIU will be strengthened by supplying equipment like laminar air flow unit, autoclave and incubator.
- To strengthen documentation, 60 Offices (RJD, AD) are to be provided with computers and printers.
- To improve the diagnostic skills, 116 veterinarians are to be provided technical/diagnostic training.

- It is proposed to include an additional 16 sub-basins of Phase II during the year 2019-20.

10.9 Animal Mobile Medical Ambulance (AMMA)

Animal Mobile Medical Ambulance is being operated by TANUVAS in 5 districts namely Kancheepuram, Madurai, Namakkal, Tiruchirapalli and Thanjavur since 2015-16. The services are being extended to the remaining districts by the Department of Animal Husbandry and Veterinary Services. Under this service, each district will be provided with one ambulance. The ambulance can be reached through a call centre that can be accessed by dialling a toll free number “1962”. The ambulance will provide emergency care at farmers’ doorstep. Animals requiring institutional care will be shifted to the identified Emergency Veterinary Care Centre. 22 vehicles have been purchased by the department and are being fabricated to function as animal ambulances which will become operational shortly.

10.10 Human Resource Development

The Department addressed the longstanding issue of vacancies in the post of Veterinary Assistant Surgeons. The appointment of Veterinary Assistant Surgeons through Tamil Nadu Public Service Commission has been stayed by the Hon'ble Supreme Court of India, which resulted in large number of vacancies and consequently reaching the services to the livestock farmers was rendered difficult. In order to tide over this situation, the department undertook an initiative of appointing 818 Veterinarians on contract agreement basis with a maximum tenure of 11 months.

11. LIVESTOCK CENSUS AND INTEGRATED SAMPLE SURVEY

11.1 Livestock Census

Enumeration of livestock for livestock census was first started during the year 1919-20. Livestock census is conducted across the country every five years and it encompasses several activities to be carried out within the stipulated

time frame. The last census *viz.*19th livestock census was conducted during the year 2012.

The department conducted the 20th quinquennial enumeration of the livestock population in the State as per the guidelines provided by the Government of India using tablet computers. The department deployed the services of 3,887 enumerators, 785 supervisors and 130 scrutiny officers for the enumeration process. The enumeration was conducted using 3,887 tablet computers and power back up units procured through ELCOT and 3,887 number of SIM cards. As the enumeration process was taken up in even the remote corners of the State, power back up units were also provided along with the tablet computers to ensure continuous power supply to the device. The Government of India has sanctioned Rs.1.004 crore for undertaking census activities.

The programme was launched on 01.10.2018 by the Hon'ble Minister for Animal Husbandry at the Thandalkalani revenue village of Ponneri Taluk of Thiruvallur district. As on 21.05.2019, Rs.2.03 crore households have been

enumerated, which works to 107% compared to 2011 human census (1.99 crore household). The results are being tabulated species-wise / breed-wise/district-wise and shall be made available shortly.

11.2 Integrated Sample Survey Scheme

Annual Sample Surveys are being carried out under Central Sector Scheme *viz.,* 'Integrated Sample Survey' from the year 1977-78 onwards with 50% financial assistance from Government of India. Under this scheme, production of Milk, Meat, Egg and Wool are estimated as per the guidelines of Department of Animal Husbandry, Dairying & Fisheries, of Government of India. The survey is carried out in 3 seasons *viz*., Summer, Rainy and Winter season for studying the seasonal fluctuations in production. The survey covers 15% of villages in each district as per guidelines of Government of India.

The results of Integrated Sample Survey are useful in evolving, monitoring and evaluating the developmental schemes implemented for the economic improvement of the livestock farmers

over a period of time and helps to assess the impact of its efforts.

Table 14 : Estimated production of milk, egg and meat

Item	Unit	2017-18	2018-19*	% of increase
Estimated Milk Production	Lakh MT	77.42	83.62	8.00
Estimated Egg Production	Lakh Nos.	1,74,161	1,88,422	8.19
Estimated Meat Production	MT	6,03,352	6,33,802	5.05

**provisional*

12. ANIMAL WELFARE MEASURES - ESTABLISHMENT OF ANIMAL WELFARE BOARD OF TAMIL NADU

In order to ensure that the animals are treated with compassion and in a humane manner as per the Article 51(A)(g) of the Constitution of India which mentions that "It shall be the duty of every citizen of India to

protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures", the Government of Tamil Nadu established an 'Animal Welfare Board of Tamil Nadu" Vide G.O.(MS) No.208,dated 24.10.2018. The Board has been formed and registered under Tamil Nadu Societies registration Act, 1975 to monitor and address the animal welfare issues in the state. The Hon'ble Chief Minister of the State functions as the Chairman of the Board while the Hon'ble Minister of Animal Husbandry is the Vice-Chairman. The establishment of the Board has been notified in the State Gazette. An Executive Committee headed by the Principal Secretary to Government for the Animal Husbandry, Dairying and Fisheries Department has also been created.

All the issues related to animal welfare dealt under the Prevention of Cruelty to Animals Act, 1960 like Transportation of Livestock Rules, Animal Market Rules, Dog Breeding Rules, Pet Shop Rules and Registration of Pet Shops, Animal Birth Control Rules, Establishment and functioning of Societies for Prevention of Cruelty

to Animals (SPCA), Establishment of cattle shelters etc., shall be administered by the Board.

13. JALLIKATTU - the traditional and cultural identity of Tamil Nadu

Jallikattu is a traditional sporting event of rural people in Tamil Nadu which is conducted during Pongal Festival. The sport has a 5,000 year old tradition and a history associated with the Socio cultural ethos of rural Tamil Nadu.

Jallikattu events are conducted only in those places that are notified in the State Gazette. The conduct of each jallikattu event is subject to the Tamil Nadu Prevention of Cruelty to Animals (Conduct of Jallikattu) Rules, 2017.

The department ensured compliance to the Prevention of Cruelty to Animals (Tamil Nadu amendment) Act, 2017 through adequate precautionary measures during 2018-19, while preserving the cultural sentiments of Tamil Nadu at the same time. It was also ensured that the bulls are not subjected to unnecessary pain and suffering during the events. The organisers and other stake holders are sensitised by the District

Collectors regarding the procedures to be adopted for conducting jallikattu. Banners displaying the responsibilities of the bull owners/ participants/ organisers are kept at strategic places which also included the do's and dont's in jallikattu events. Check list regarding the actions to be taken before, during and after conduct of jallikattu was followed meticulously. All these measures have ensured that untoward incidents do not occur during the conduct of Jallikattu events in the State.

During 2019, 307 notifications for conduct of Jallikattu events were issued and 228 jallikattu events have been conducted in 18 Districts since January till May as per the Act.

14.TAMILNADU LIVESTOCK DEVELOPMENT AGENCY

Tamil Nadu Livestock Development Agency (TNLDA) established during 2002-03 is implementing cattle and buffalo breeding programmes of Government of India from 9.1.2003 onwards.

14.1 Objectives of the Agency

The primary objective of the agency is to bring all the breedable age cattle and buffaloes under defined breeding programme to increase milk production and their productivity.

14.2 Programmes

To achieve the objective, a number of initiatives were undertaken during 2018-19 that include strengthening the frozen semen production stations, distribution network for frozen semen and other breeding inputs, breeding infrastructure at artificial insemination centres, capacity building for artificial insemination workers, conducting skill development programmes, animal identification and traceability, introduction of Embryo Transfer Technology to hasten the High Genetic Merit bovine calf production, genetic up gradation programme for the non-descript cattle through the use of High Yielding Indigenous Breeds (HY-IB) semen for quality AI delivery at farmers doorstep in aspirational districts

(Ramnad and Virudhunagar), risk mitigation and risk management

14.2.1 Strengthening of frozen semen production stations, distribution network and breeding infrastructure

In order to enhance the frozen semen production 86 high genetic merit bull calves were inducted. The Frozen semen production station at District Livestock Farm, Udhagamandalam was strengthened by providing a Computer Assisted Semen Analyser to improve the quality of semen produced and to fulfil the States requirement of frozen semen straws under National Dairy Plan phase-I at a cost of Rs.53.00 lakh.

Towards Strengthening of storage, transport and distribution of liquid nitrogen, procurement of 50 nos. of 55 litre Liquid Nitrogen transport containers, 50 nos. of 47 litre Frozen Semen Containers, 13 vehicles for transport of frozen semen doses and Liquid Nitrogen and installation of 3 nos. of 3000 L capacity bulk Liquid Nitrogen storage tower silos was taken up at a cost of Rs. 2 crore.

14.2.2 Identification and traceability of animals

Under National Mission on Bovine Productivity (NMBP), - Pashu Sanjivini Scheme, 4683 tablets were procured for data entry, into 33.29 lakh animal health cards were printed, 38.29 eartags and 4202 ear tag applicators were procured at a cost of Rs. 3.67 crore to ensure animal identification and traceability through Information Network on Animal Production and Health (INAPH). So far a total of 8.81 lakh bovines have been tagged and health cards have been distributed.

14.2.3 Capacity building for artificial insemination workers

Four veterinarians working in the semen stations [Three from Animal Husbandry Department and One from Tamil Nadu Co-operative Milk Producers' Federation Limited] were given training on "Quality Control aspects in Frozen Semen Technology" at Central Frozen Semen Production and Training Institute (CFSP&TI), Hessarghatta, Bangalore.

Besides this, 113 livestock inspectors were provided refresher training at a cost of Rs.4.14 lakh. 154 rural youth were trained for artificial insemination work and were equipped with necessary equipment to function as Multipurpose Artificial insemination technicians (MAITRI) at a cost of Rs.1.23 crore. So far, 2,373 village youth have been trained and 27.78 lakh artificial inseminations have been performed by them.

Table 15 : Cumulative numbers of Artificial Insemination (AI) Centers established by trained rural youth and artificial inseminations done by them during the past ten years (2009-10 to 2018-19)

Year	No. of AI workers	No. of AI performed (in 100's)
2009-10	840	1,45
2010-11	898	2,031
2011-12	1,047	2,513
2012-13	1,248	2,488
2013-14	1,321	1,951
2014-15	1,548	2,949

Year	No. of AI workers	No. of AI performed (in 100's)
2015-16	2,048	3,841
2016-17	2,173	5,150
2017-18	2,272	4,954
2018-19	2,373	6,060

14.2.4 Skill development programmes

A total of 17,000 farmers participated and benefitted from 'One day Seminar' on **"Scientific** management of bovines breeding through technological backstopping" and "Reproductive management of dairy cattle for profitable dairying" conducted in coordination with Tamil Nadu Veterinary and Animal Sciences University at their District Level Veterinary University Training and Research Centres (VUTRCs) in two Phases at a cost of Rs.20 lakh.

14.2.5 Conservation of indigenous breeds

A Cattle Research Station at Andhiyur, Erode district for conservation and development of the indigenous Bargur breed of cattle was established under the aegis of Tamil Nadu Veterinary and Animal Sciences University and

activities for the year 2018-19 were taken at a cost of Rs.60.00 lakh.

For the supply of frozen semen doses of Kangeyam and Pulikulum cattle, 15 Kangeyam bull calves and 5 Pulikulum bull calves born under the Field Performance Recording Programme were procured for frozen semen production at District Livestock Farm, Hosur.

Embryo transfer and In-vitro Fertilisation Technology has been initiated at the District Livestock Farm, Hosur at a total cost of Rs.454.87 lakh for the production of 84 High Genetic Merit bulls and 85 bull mothers over a period of three years. For embryo transfer work, 5 Kangeyam, 4 Bargur and 3 Pulikulum cows were selected.

An embryo transfer work has been initiated at the Veterinary College and Research Institute Namakkal, Tamil Nadu Veterinary and Animal Sciences University at a total cost of Rs.251.00 lakh for the production of 105 Kangeyam and 55 Bargur cattle calves.

14.2.6 Genetic up gradation programme through use of High Yielding Indigenous Breeds (HY-IB) semen for quality AI delivery at farmers doorstep in aspirational districts

In the Niti Aayog aspiration districts of Ramanathapuram and Virudhunagar, 225 villages were selected in each district and in each of the village 100 non-descript cows / low yielding cows have been inseminated with High Yielding Red Sindhi Semen doses animals in three phases with a financial outlay of Rs.146.18 lakh.

14.2.7 Risk mitigation and risk management

Under the National Livestock Mission 1.32 lakh cattle units were brought under insurance coverage at a cost of Rs.6.29 crore.

To assess the efficiency of the program and the impact of the scheme, Tamil Nadu Veterinary and Animal Sciences University has been assigned to take up the case study at a cost of Rs. 2.8 lakh.

14.3 Procurement of breeding inputs under Tamil Nadu Irrigated Agriculture Modernization programme

Procurement of 1,45,620 frozen semen doses, 2000 sex sorted semen doses, 1260 frozen semen containers of 1.5 Liters capacity, 20 Nos. of 35 liter capacity frozen semen containers, 1260 Artificial insemination guns,420 thawing flasks, 2670 packets of disposable Artificial insemination Gloves was taken up with a financial outlay of Rs.138.98 lakh.

14.4. Procurement of TRPVB medicines to Animal Husbandry Department under MSDA 2018-19

Purchase Orders were issued to the Project Director, Translational Research Platform for Veterinary Biologicals (TRPVB), Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) to supply TRPVB medicines [Progesterone nano cream and Teat protect – 60,000 nos. each] under Mission on Sustainable Dryland Agriculture (MSDA Phase II 2018-19) at a budget outlay of Rs. 4.2 crore.

14.5 Procurement of Alternative Medicines to Animal Husbandry Department

Purchase Orders issued to Tamil Nadu Medical Plant Farms & Herbal Medicine Corporation Limited [TAMPCOL] for procurement of Alternative Medicines [Siddha–Ayurvedha medicines] for the years 2015-16 & 2016-17 at a budget outlay of Rs. 2.76 crore.

14.6. Rashtriya Gokul Mission Award 2018

Under “Rashtriya Gokul Mission”, to encourage Indigenous Breeding, National Gopal Ratna and National Kamadhenu Awards were given to the Best Indigenous Animal Breeder and Institutions / Goshalas by Government of India. Mr. Dheeraj Ram Krishna of Coimbatore was awarded with National Gopal Ratna award with the Memento and Cash Prize of Rs. 5.0 lakh (First Prize) and Bargur Cattle Research Station of Tamil Nadu Veterinary and Animal Sciences University funded by Tamil Nadu Livestock Development Agency and Velliyangiri Gaushala of Coimbatore received National Kamadhenu Awards with a Memento and Cash Prize of Rs. 5.0 lakh (First position) and Rs. 1.0 lakh (Third position) respectively.

15. TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

Tamil Nadu Veterinary and Animal Sciences University was established in the year 1989 to impart quality education to undergraduate, postgraduate and doctoral students in different fields of Veterinary and Animal Sciences and Food Sciences, carry out research in livestock and poultry production, protection and value addition of livestock and poultry products and disseminate knowledge on important technologies to line departments and farming community for the sustenance and growth of livestock and poultry in the State through extension programmes.

15.1 Colleges

The University imparts both undergraduate and postgraduate education through its constituent colleges, located at various places in the state namely Madras Veterinary College, Chennai, Veterinary College and Research Institutes at Namakkal, Orathanadu and Tirunelveli, College of Food and Dairy

Technology, Koduveli and College of Poultry Production and Management, Hosur.

15.2 Farm facilities

Apart from these six colleges, the University has ten Research farms/Stations namely Livestock Farm Complex and Poultry Research Station at Madhavaram Milk Colony in Tiruvallur district, Post graduate Research Institute in Animal Sciences and Institute of Animal Nutrition at Kattupakkam in Kancheepuram district, Mecheri Sheep Research Station at Pottaneri in Salem district, Sheep Breeding Research Station at Sandynallah in Nilgiris district, Regional Research and Education Centre at Pudukottai, Bargur Cattle Research Station and Kangayam Cattle Research Station at Bargur and Sathyamangalam respectively in Erode district and Pulikulam Cattle Research Station at Manamadurai in Sivagangai district.

15.3 Outreach centres

In addition to these Colleges and Research Farms/Stations, the University has a total of 27 Extension Centres including 20 Veterinary

University Training and Research Centres at Coimbatore, Cuddalore, Dharmapuri, Dindigul, Erode, Karur, Krishnagiri, Melmaruvathur, Nagapattinam, Nagercoil, Perambalur, Rajapalayam, Ramanathapuram, Salem, Thanjavur, Tiruchy, Tiruppur, Tiruvannamalai, Vellore and Villupuram; three Farmers' Training Centres at Kancheepuram, Theni and Thiruvarur and four Krishi Vigyan Kendra's at Kattupakkam in Kancheepuram district, Kundrakudi in Sivagangai district, Namakkal in Namakkal district and at Chinnasalem in Kallakurichi district. In addition, there are 13 Laboratories viz., Central University Laboratory, Bacterial Vaccine Research Centre, Viral Vaccine Research Centre, Laboratory Animal Medicine Unit, Pharmacovigilance Laboratory for Animal Feed and Food Safety, Zoonoses Research Laboratory and Translational Research Platform for Veterinary Biologicals at Madhavaram Milk Colony; Animal Feed Analytical and Quality Assurance Laboratory and Poultry Disease Diagnosis and Surveillance Laboratory at Namakkal; Avian Disease Laboratory at Thalaivasal; Veterinary University Training and Diagnostic Centre at Madurai; Centre for Stem

Cell Research and Regenerative Medicine at Madras Veterinary College, Chennai and Bio-Safety Level - III (BSL - III) Laboratory at Madhavaram Milk Colony, Chennai.

15.4 Education

The University offers B.V.Sc & A.H. degree course for 360 students through its constituent colleges viz., Madras Veterinary College, Chennai (120); Veterinary College and Research Institute, Namakkal (80), Veterinary College and Research Institute, Orathanadu (80) and Veterinary College and Research Institute, Tirunelveli (80) besides B.Tech (Food Technology) for 40 students and (Dairy Technology) for 20 students at College of Food and Dairy Technology, Koduveli and B.Tech (Poultry Technology) for 40 students at College of Poultry Production and Management, Hosur. In addition, M.V.Sc and Ph.D. (Veterinary) are offered at Madras Veterinary College, Chennai and Veterinary College and Research Institute, Namakkal. Likewise, M.Tech and Ph.D (Food Technology) courses are offered at College of Food and Dairy Technology, Koduveli.

Vision 2023 document of Tamil Nadu sets the action plan for infrastructure development to achieve the desired outcomes by 2023. As per the vision document, institutions are expected to have good infrastructure. The Government of Tamil Nadu have sanctioned Rs. 2800 lakhs for Creation of additional building infrastructure at Veterinary College and Research Institute, Tirunelveli & Veterinary College and Research Institute, Orathanadu.

ICAR, New Delhi has sanctioned a grant of 2798.60 lakhs under the flagship National Agricultural Higher Education Programme (NAHEP) funded by the World Bank to TANUVAS towards improving infrastructure and human resource under competitive mode.

15.5 Research initiatives

The University has a strong research base. There are ten research stations and 13 research laboratories carrying out research in specific areas like animal health, animal production, veterinary biologicals, zoonosis, livestock feed analysis, disease diagnosis and surveillance, ethnoveterinary medicine, pharmaco-vigilance

etc. A total of 38 research projects to the tune of Rs.8755.24 lakhs have been sanctioned by various National and International funding agencies during 2018-19 for carrying out research activities at TANUVAS.

15.6 Biodiversity – Conservation of native breeds

The Govt. of India has launched Rashtriya Gokul Mission for conservation and development of indigenous breeds of the country. In line with this mission, the objective of Government of Tamil Nadu under 12th Five Year Plan includes conservation of indigenous breeds in their native tract. In accordance with the policy of conservation of native breeds, the Govt. of Tamil Nadu has sanctioned a project “Establishment of Alambadi Cattle Research Centre in Dharmapuri District” with a budget of Rs.400 lakhs and TANUVAS is in the process of establishing this Research station in the native breeding tract of Alambadi in Dharmapuri district.

Conservation and development of native breeds is one of the objectives of the Government and accordingly with the aim to

produce superior Kangayam and Bargur calves through embryo transfer technology (ETT) by creating embryo bank and to impart hands on training to the field veterinarians on ETT, Government of India under National Mission on Bovine Productivity (NMBP) has sanctioned a project on “Establishment of embryo production centre for conservation of indigenous cow breeds of Tamil Nadu” with a budget outlay of Rs.251 lakhs.

15.7 Fodder - Hydroponics

Limited availability of land and water scarcity are the major constraints in conventional method of green fodder production by livestock farmers and the hydroponic technology has become an alternate and efficient method to mitigate fodder crisis. Hence, the Govt. of Tamil Nadu has sanctioned a project entitled “Establishment of a centre for developing cost effective hydroponic fodder devices for distribution to rural poor farmers in drought prone districts” and TANUVAS is in the process of establishing this centre at Madhavaram Milk Colony, Chennai with a budget outlay of

Rs. 74.48 lakh. This centre will fabricate and supply hydroponic devices to meet the green fodder requirement of livestock.

15.8 Climate change and methane mitigation

Three research projects on climate change with special reference to methane mitigation viz., Exploring environment sustainable perennial fodder production techniques to augment fodder production and improve carbon sequestration; Sensitizing farmers on Nutritional supplementation strategies to increase productivity in dairy cattle to mitigate methane emission and Estimation of methane emission under different feeding systems and development of mitigation strategies are in operation at TANUVAS.

Government of Tamil Nadu has identified preservation of ecology as one of the theme in Vision 2023 of the state and in accordance with the theme, the Government has sanctioned a World Bank assisted Tamil Nadu-Irrigated Agriculture Modernisation project on Sensitising farmers on “Nutritional supplemental strategy”

developed at TANUVAS to increase productivity in dairy cattle and mitigate methane emission with a budget outlay of Rs.200 lakh.

15.9 Disease diagnosis, control and surveillance

Emergence of diseases threatens the growth of livestock and poultry sector besides causing economic loss to the farmers and entrepreneurs. Considering the importance of disease control, the Govt. of Tamil Nadu has sanctioned a project entitled “Establishment of a Centre for monitoring, surveillance and control of livestock and poultry Diseases” and TANUVAS is in the process of establishing this centre at Madhavaram Milk Colony, Chennai at a cost of Rs. 3.06 crore. This centre will prevent disease outbreaks by way of early confirmatory diagnosis and formulating effective disease control strategies. This centre will serve the entire state by coordinating with the different regional labs such as Animal Disease Investigation Unit of State Government and Poultry Disease Diagnosis and Surveillance

Laboratories and Veterinary University Training and Research Centres of TANUVAS.

15.10 Animal Nutrition

The southern districts of Tamil Nadu have a huge population of livestock and poultry and the demand for nutritionally balanced feeds is very high. Additionally, the Southern region of the state being endowed with large scale availability of feed ingredients for livestock and poultry feed as agricultural by-products, agro industrial wastes, fodder crops and mineral sources which can be fruitfully exploited to produce variety of feeds such as concentrate feed, complete feed pellets, novel feed like complete feed blocks, multi nutrient enriched feed blocks at a relatively lower cost. Hence, to meet the demand of feed for the benefit of livestock and poultry farmers in Southern districts of Tamil Nadu, establishment of a livestock and poultry feed technology centre is in progress at Tirunelveli with a budget outlay of Rs. 150 lakh.

15.11 Poultry Production

To ensure regular supply of chicks of indigenous chicken at nominal cost to needy rural poultry farmers, a Rural Poultry Inputs and Skill Development Centre for Rs. 151 lakhs has been sanctioned by the Govt. of Tamil Nadu. TANUVAS is in the progress of establishing this centre at Madhavaram Milk Colony and popularize the low input technology germplasm such as Nandanam Chicken-4 and Desi chicken (Aseel) developed at TANUVAS. This centre will ensure distribution of indigenous chicken and other critical inputs such as brooding cages, feeders, waterers, feed and vaccines besides imparting training on rearing and marketing of birds to the rural farmers.

15.12 Clinical services

The University has an excellent network of hospitals. TANUVAS is offering clinical services to the livestock and companion animals round the clock. A total of 2,12,358 animals were treated as out-patient cases and 3,078 animals as in-patient cases during the year 2018-19. Referral facilities with ultrasonography,

endoscopy, electrocardiography, orthopaedics, haemodialysis, ophthalmology, dermatology, canine blood bank, etc. are also available. One of the significant achievements in clinical services is the establishment of Computer Tomography (CT) scan units at Madras Veterinary College and Veterinary College and Research Institute, Namakkal.

15.13 Extension Activities

The University outreach activities are focused towards empowering farmers, farm women, rural youth, school dropouts and self help groups with skill in livestock and poultry practices for their livelihood through Capacity building programmes, Frontline demonstrations and On-farm trials and dissemination of livestock and poultry technologies through print media, electronic media and e-Extension initiatives.

A total of 2,152 On-campus and Off-campus training programmes were conducted on different topics including dairy farming, sheep and goat farming, poultry farming, pig farming, milk and milk products and feed and fodder cultivation. A total of 79,962 farmers including

19,189 SC/ST were imparted knowledge and skill during the training programmes.

The Directorate of Distance Education is offering 21 PG diploma courses for the veterinarians to update their knowledge and skills on latest technologies in animal husbandry and veterinary sciences. In addition, 20 certificate courses, 15 skill development and 11 self-employment courses in animal husbandry sector are being offered to the farmers and rural youth to boost livestock and poultry production thereby enhancing the rural income. During 2018, a total of 790 candidates have enrolled under distance education mode comprising of PG diploma (38), Certificate course (14), Skill development (39) and Self-employment courses (699).

15.14 Awards / recognitions

- The Bargur Cattle Research Station functioning at Bargur under TANUVAS was conferred with the prestigious National Kamdhenu Award (First prize), South Zone, for maintaining the best indigenous cattle herd by Institution, for the year

2017-18 by the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, Government of India on 01.06.2018. The award includes Rs.5 lakh as cash award and a certificate of merit.

- The Rabies Diagnostic Laboratory of the Department of Animal Biotechnology has been accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) and International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) in accordance with the standard ISO/IEC 17025:2005 for its facilities in the field of biological testing for the period from 11.09.2018 to 10.09.2020.
- The Translational Research Platform for Veterinary Biologicals (TRPVB), a joint venture of TANUVAS and Department of Biotechnology (DBT) has been awarded Current Good Manufacturing Practices (cGMP) certification for manufacturing unit under the Schedule-M.

- TANUVAS has secured 70th rank in University category, 108th rank in Engineering Category and 99th rank in overall category as per Ministry of Human Resources Development - National Institutional Ranking Framework (NIRF) – 2019.
- TANUVAS bagged the Postgraduate Award instituted by Indian Council of Agricultural Research (ICAR) for securing 16 PG scholarships, the highest in Veterinary and Fisheries Sciences category during the AICEA-PG 2018 online counseling.

15.15 Important events of TANUVAS during 2018-19

- TANUVAS and Sivaganga District Administration jointly developed a Mobile App entitled, “Smart Sivaganga” to promote transparency in the implementation of Government schemes on 14.04.2018 to improve the livelihood and welfare of the farmers in the rural area of Sivaganga District.

- The Twentieth Convocation of TANUVAS was held at University Centenary Auditorium, University of Madras on 06.12.2018. Hon'ble Governor of Tamil Nadu and Chancellor of the University presided and conferred degrees and diplomas to 650 candidates in person and 256 candidates in absentia and administered the pledge to the graduands.
- A Mobile App - "TANUVAS VETMICRO" developed for practical veterinary microbiology course for the benefit of UG students, utilising the ICAR-IDG funds was launched on 31.01.2019.
- A new animal experimentation facility for Translational Research Platform for Veterinary Biologicals (TRPVB) at Madhavaram Milk Colony was inaugurated by the Additional Secretary and Financial Advisor, Department of Biotechnology, New Delhi on 14.02.2019.
- Hon'ble Chief Minister of Tamil Nadu inaugurated the Multi Slice Spiral Computed Tomography (CT Scan) facility at Madras Veterinary College, Chennai and Veterinary College and Research Institute,

Namakkal on 19.02.2019 through video conferencing.

- Bio-Safety Level - III (BSL - III) Laboratory established with a budget outlay of Rs.1275 lakhs at Madhavaram Milk Colony with the financial assistance from Government of Tamil Nadu under Tamil Nadu Innovation Initiative (TANII) was declared open by the Hon'ble Chief Minister of Tamil Nadu on 03.03.2019 through video conferencing.

- The EDII-funded Veterinary Incubation Foundation @ TANUVAS established at Central University Laboratory Building, Madhavaram Milk Colony was inaugurated by the Vice-Chancellor, TANUVAS on 06.03.2019.

- The Government of India and Veterinary Council of India has granted VCI recognition to offer B.V.Sc & AH courses to Veterinary College and Research Institutes at Orathanadu and Tirunelveli vide Gazette notification G.S.R./1296(E) dated 08.03.2019

15.16 International Collaboration

A delegation from Oklahoma State University, Stillwater, USA comprising Dr. Jerry Malayer, Associate Dean for Research and Graduate Education, Dr. Christopher Ross, Associate Dean for Academic Affairs, Dr. Lionel Dawson and Dr. Ashish Ranjan, faculty members interacted with the Hon'ble Chief Minister of Tamil Nadu on 23.07.2018 during their visit to TANUVAS during July 2018.

Clinical externship training was imparted to 61 students from Chittagong Veterinary and Animal Sciences University, Chittagong, Bangladesh from 29.06.2018 to 29.07.2018 and four students from Washington State University, Washington, USA from 11.08.2018 to 07.09.2018.

15.17 Priorities for 2019-20

- To establish Learning and Assessment Centre and an Open Knowledge Hub with National Agricultural Higher Education Programme (NAHEP) funding from ICAR.

- To continue industry-university collaborative research consortium to facilitate industry driven research and to promote start-ups.
- To continue Inter-University / Institutional collaborative research linkage with premier Universities.
- To develop DIVA and live virus vectored vaccines against major viral diseases affecting livestock and poultry.
- To conserve the breeds of animals that are native to the state of Tamil Nadu.
- To establish Regional super speciality polyclinics.
- To promote international tie-ups in the area of student development, control of infectious diseases and to ensure food security and safety.
- To promote one health approach to ensure safety of all living beings in the world

- Strengthening of e-governance initiatives through development of management systems and user apps.
- To design cost effective, labour friendly farm implements to improve the efficiency of livestock farm management leading to improved productivity.
- To evolve a strategy for deworming livestock to increase the efficiency of deworming and to reduce the anthelminthic resistance.
- To popularise ethno veterinary practices to reduce antibiotic use resistance and to avoid / reduce antibiotic residues in livestock products.
- To create a database for working out the cost of production of livestock products.
- To establish a Centre of Excellence in Small Ruminant Research in southern region of Tamil Nadu

16. THE WAY FORWARD

Livestock sector provides productive employment, especially self employment and supplementary, guaranteed household income to a majority of rural households, particularly small and marginal farmers. Apart from generating employment and income, live animals are important natural assets for the poor, which can be easily liquidated for cash during emergency. As many pockets/clusters in the State largely rely on this sector as one of the major sources of income, it is important to increase the incomes generated through livestock so as to achieve the goal of doubling farmers incomes by 2022.

16.1 Proposed Policy Initiatives

By modernizing and extending veterinary services and other facilities, the growth and sustainability of this sector can be assured. The Department shall strive to organise the livestock sector on commercial lines through interventions in food processing and value addition. The gap that exists between availability and requirement of feed and fodder is a matter of concern and the Department shall integrate fodder

development as a primary activity within the livestock sector. Food processing, value addition, strengthening the value chain shall be undertaken in collaboration with other Government agencies and private sector for the ultimate benefit of the livestock farmer.

In order to invigorate this important primary sector activity a multi pronged approach is proposed as under:

a. Continue to identify asset-less rural poor women and make them owners of income generating livestock assets and ensure their economic improvement.

b. Continue to encourage farmers to take up the entire gamut of fodder augmentation processes in their own lands, procuring chaff cutters (to reduce wastage and improve digestibility) and rain guns (to minimize water usage) encourage alternate fodder resources like Azolla, alternate fodder production techniques like hydroponic fodder production, encourage fodder storage by ensiling

excess fodder and produce certified fodder seeds by the departmental fodder banks as well as through PPP mode through farmers collectives.

c. To spread out the entire range of backyard poultry activities in all the districts by encouraging small scale native chicken and backyard poultry enterprises besides positioning this avocation as an initiative to address the nutritional security.

d. To bring professional veterinary services and breeding services to farmers doorsteps even in remote villages.

e. To produce frozen semen straws of high genetic merit and employ cutting edge genetic tools like Embryo Transfer, Invitro fertilisation techniques, sex sorting of semen for increasing the productivity.

f. Upgrading production of biological products to global standards by

establishing GMP compliant vaccine production labs.

g. To encourage farmers to employ production standards those are at par with international standards so as to access international markets. There is a large scope for export of livestock products in the global market that can provide opportunities to livestock farmers to increase their incomes.

Significant gains in production of livestock products have been achieved through various initiatives in veterinary services and animal husbandry activities and broad basing the service delivery system.

The following are the thrust areas identified:

1. Micro nutrient management of milch animals with supplementation of minerals and management of animals in ‘dryland area shall be undertaken to augment milch animal's productivity. Udder health and reproductive health management of milch animals shall be focussed to

prevent economic losses due to mastitis and infertility.

2. A Disease surveillance programme to identify insidious livestock diseases shall be rolled out in collaboration with TANUVAS. This would enable to plan for disease control programmes effectively.

3. Genetic improvement of meat animals including sheep, goats and pigs coupled with micronutrient management with appropriate interventions shall be undertaken to ensure the flock health.

4. Conservation of Native Livestock and Poultry: The Department shall also place emphasis on propagating native chicken rearing besides *insitu and exsitu* conservation and breed improvement of native livestock breeds by identifying high genetic merit gene pool.

5. The Department shall provide suitable platforms for propagating the technologies evolved through research by Tamil Nadu Veterinary and Animal

Sciences University for the benefit of the livestock farmers. Products shall also be directly sourced by the Department for the betterment of livestock health and productivity.

6. Policy initiatives like breeding policy, vaccination strategy, animal purchase policy, medicines procurement policy, improvement of biological, production laboratories, disease diagnosis and control, feed certification are decided in conjunction with the inputs of TANUVAS.

7. Thrust will be given to include more number of livestock including sheep and goats owned by poor farmers under insurance coverage so as to insulate them from risks due to natural calamities, diseases etc.

8. Administration of the entire gamut of animal welfare activities as provided under the PCA Act, 1960 and as enshrined under Article 51(A)(g) of the Constitution of India shall be a thrust

area. For this, Tamil Nadu Animal Welfare Board has already been created.

9. A shift from individual animal's health management to production management of the herd coupled with improvement in delivery of livestock services is a main thrust area. A cluster based approach towards ensuring herd health covering all aspects of breeding, feeding and management of the livestock shall be adopted.

10. Facilitating livestock development through targeted livestock services, markets and value chains, feed and fodder resources and R&D to harness the economic potential of this vital component of our rural economy is a thrust area for development.

11. Tamil Nadu is at the forefront of poultry production with a preponderance of large scale commercial poultry farms. Though, capital intensive, technology driven commercial poultry production is thriving in certain districts by the affluent poultry

farmers, small and medium sized poultry farmers are unable to economically benefit from their small scale poultry enterprises due to limitations finances and market access. The scenario is worse in meat animal sector in which the farming operations are still practiced by small and marginal farmers in traditional methods since the meat production and marketing continues to remain unorganised. The lack of slaughter facilities at the rural areas coupled with constraints of transportation, storage and marketing is being exploited by middlemen at the expense of the primary producers. The department will provide equitable and inclusive opportunities for these small producers, by creating Farmer Producer Organisations for Poultry and Sheep & Goat farmers. At the primary level, Farmer Interest Groups (FIG) will be formed at the village level. At the secondary level, FIGs will be integrated to form Farmer Producer Groups (FPG) and at the apex level, Farmer Producer Company / Organisation

(FPC/FPO) will be formed integrating such FPGs. This Collective Farming System enables Collective Purchase of quality inputs by farmers at wholesale price which reduces input cost considerably. Collective husbandry practices results in appropriate production parameters which translates into enhanced productivity. Collective Marketing enables the FPGs and FPCs to aggregate the produces from member farmers and collectively market with or without value addition, direct to consumers for best price, eliminating the middle men, thus enabling them to realize good economic returns.

12. Climate changes will impact the economic viability of cross bred livestock production. Higher temperatures and reduced feed intake results in decrease in milk yields, heat stress in animals, delayed onset of puberty, declined conception rate, higher incidence of diseases like mastitis, more prevalence of pest, insects and parasitic diseases etc., Research studies show that the cross

breeds are more susceptible to vagaries of climate / temperature when compared to indigenous cattle. In such a scenario the Animal husbandry Department is encouraging livestock farmers to adopt strategies like promoting green fodder cultivation like leguminous fodder production as one of the multiple crops to bridge fodder gap and avail fodder during drought, undertaking genetic studies on disease resistance in domestic species of livestock, intensifying disease surveillance and forecasting of disease outbreaks, promoting cross breeding with indigenous varieties to improve resilience of cross bred's to climate change and promoting dairy development in villages by training more women on animal care, animal disease reporting, and nutrition for optimizing milk at household level.

13. To address a more standardized and harmonised approach to disease surveillance, diagnosis and control of livestock diseases it is required to establish a new apex disease screening

centre/ testing facility in the State with complete infrastructure, manpower and advanced disease diagnostic facilities. Such a facility will provide prompt and effective disease screening services to the frozen semen bull stations during selection of bull calves and periodical monitoring of bulls and thereby act as a liaison agency to SRDDL, Bengaluru in breeding programs of the State.

14. An Export policy for the Animal Husbandry Sub sector shall be evolved in consultation with other Government agencies like Agriculture Marketing Department, APEDA, TANUVAS for products of livestock origin. Investments in food processing infrastructure like establishing meat value chains, rural slaughter houses, establishment of cold storage facilities to store meat/eggs, reefer vehicles for transport of carcasses and/or meat etc. poultry processing centres, cold storage facilities to store eggs shall be encouraged.

15. Human Resources Development of the department staff is a priority area. Apart from continuous Veterinary Education, the department shall prepare the veterinarians to be livestock business advisors with exposure in Livestock business economics, market understanding, trade related issues etc so that the farmers / entrepreneurs can benefit out of the expertise. Skill Development Programmes and Training Needs of the rural livestock farmer / entrepreneur shall be a major focus area of the Department. Further, training on best practices on breeding, nutrition, awareness on common diseases affecting livestock and the measures to control diseases, bio-security measures, disaster management during natural calamities, clean milk production, sanitation and hygiene, modern management practices will be imparted to livestock farmers.

17. BUDGET FOR 2019-20

A sum of Rs.1,252.4049 crore has been provided in the budget for 2019-20. Out of this, projected revenue expenditure is Rs.1,191.9186 crore, capital expenditure is Rs.60.4862 crore and loan amount is Rs.0.0001 crore.

18. CONCLUSION

Keeping this goal of doubling farmers incomes in mind, the Government have given special emphasis for the development of this primary sector based activity for the upliftment of economic status of the rural poor, by implementing flagship Schemes like “Free distribution of Milch Cows and “Free distribution of Goats and Sheep” to poor women in rural areas, Fodder Development Programme that aims to augment fodder growth in farmers own lands “Scheme for Poultry Development” that aims to establish commercially viable broiler / Native Chicken farms with the aim of increasing per capita income in industrially backward regions in the State and to encourage entrepreneurs at village level, Infrastructure

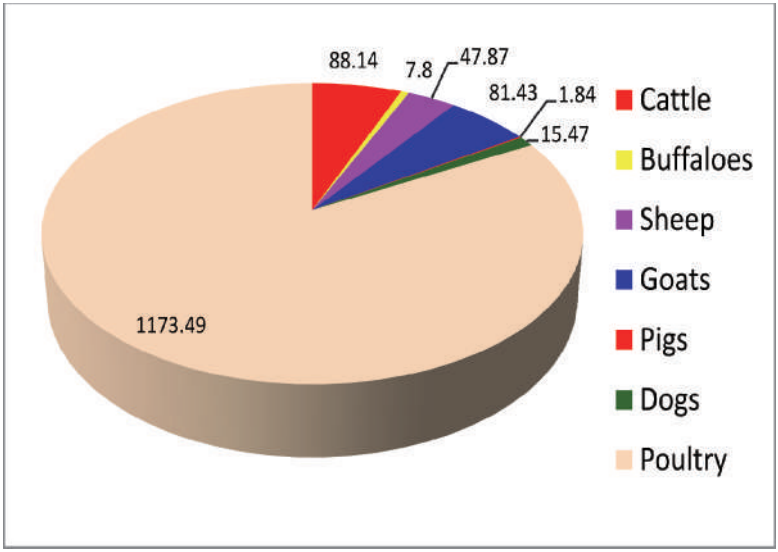
Improvement programmes, Livestock Health and Disease control programmes, outreach programmes with an inbuilt component for skill development, expanding and improving breeding coverage, small ruminant improvement programmes etc.. to name a few.

With a majority of the population consuming products of animal origin, there is a good opportunity for increasing the processing capacity of meat by establishing facilities for egg and meat processing. Given the raw material supply advantage, there is a potential to nurture beneficial relationships with food processing, food retail and related supply chain organizations through new technologies, innovations and other methods of value additions. Food processing is a priority sector for the Government of Tamil Nadu as well as one of the focus sectors since the development of animal husbandry sector is important for growth in food processing sector. It is evident that a synergy between animal husbandry with food processing can provide immense opportunities for the rural farmers to have a major role in the food processing value chain.

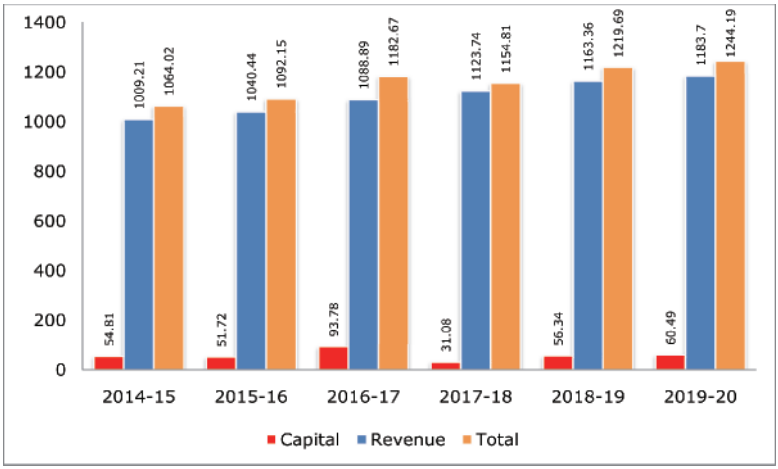
Tamil Nadu has inherent advantages in terms of human capital, positive industrial climate, strong macro-indicators and production base for raw materials. With the focus on quality production of livestock products at the farm gate the opportunities available in the food processing sector with an eye on exports can be exploited. Issues like exclusion of chemicals and antibiotic residues that are seen as barriers to trade in livestock products can be addressed at the level of farmers to ensure quality of products. Continuing Education Programme for all the stake holders will surely ensure economic gains for the farmers.

UDUMALAI K. RADHAKRISHNAN
Minister for Animal Husbandry

Livestock Population in Tamil Nadu (in lakh)

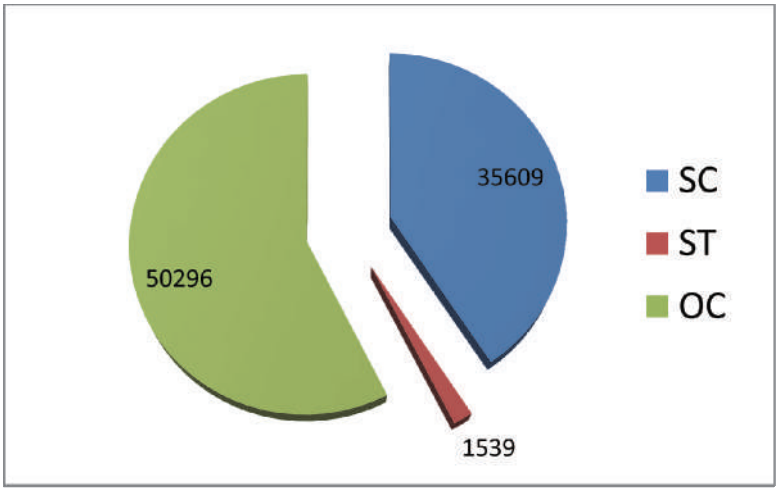


Budget Allocation (Rs. in crore)



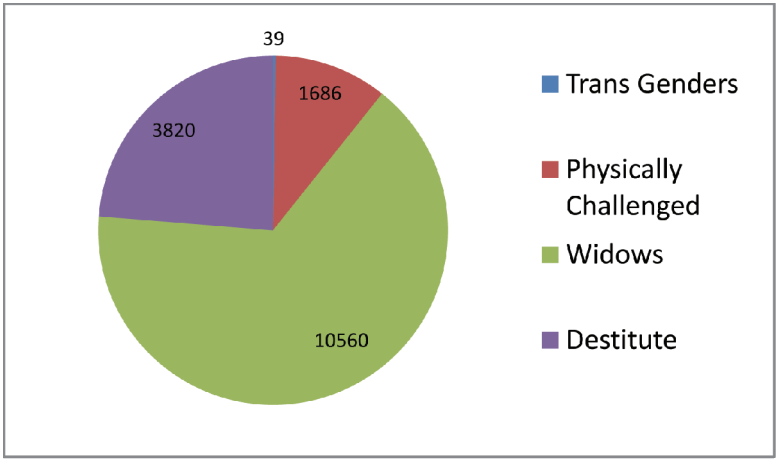
Community-wise number of beneficiaries benefitted under Free distribution of Milch cows Scheme.

Total Number of Beneficiaries-87,444



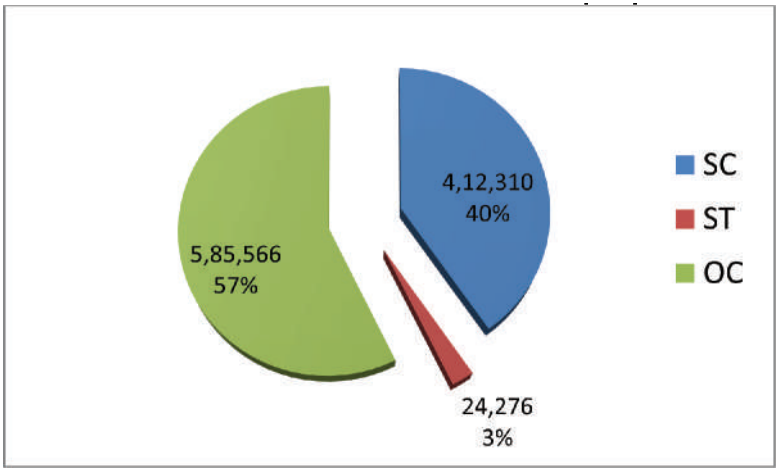
Category-wise number of beneficiaries benefitted under Free distribution of Milch cows Scheme

Total Number of Beneficiaries-87,444



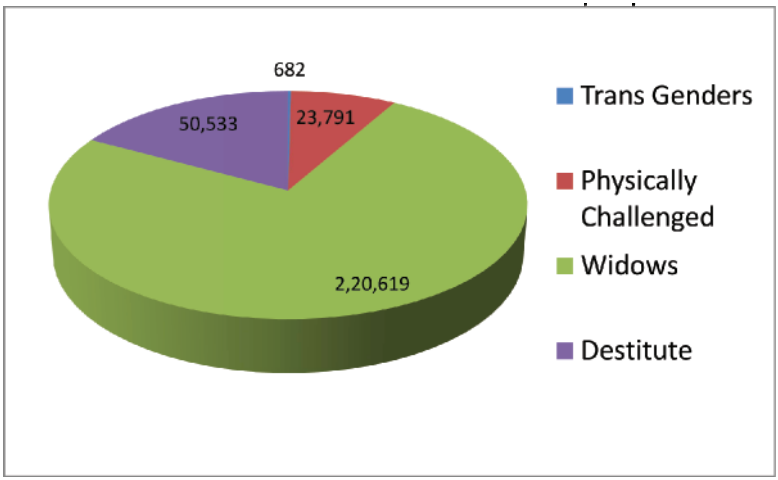
Community-wise number of beneficiaries benefitted under Free distribution of Goats /Sheep Scheme

Total Number of Beneficiaries- 10,22,152

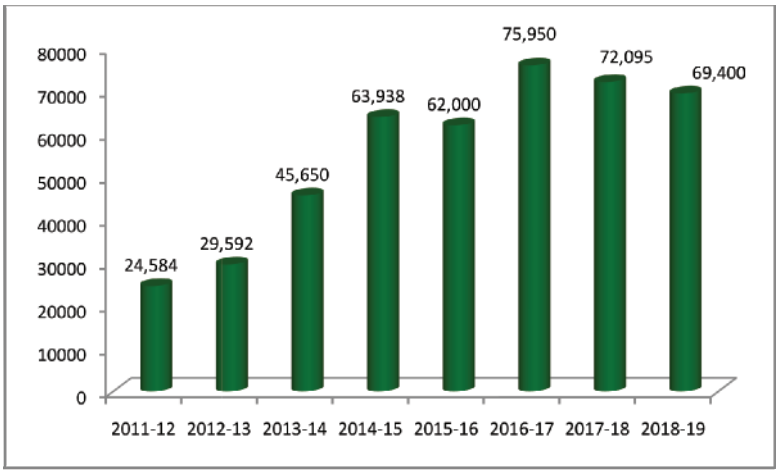


Category-wise number of beneficiaries benefitted under Free distribution of Goats /Sheep Scheme

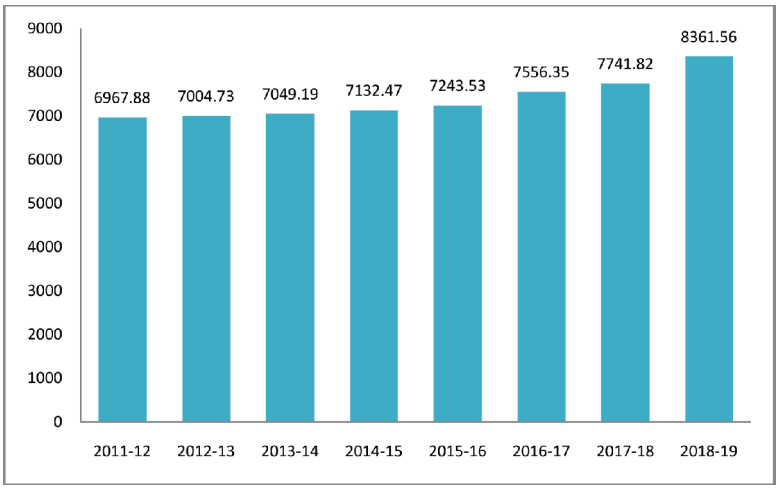
Total Number of Beneficiaries- 10,22,152



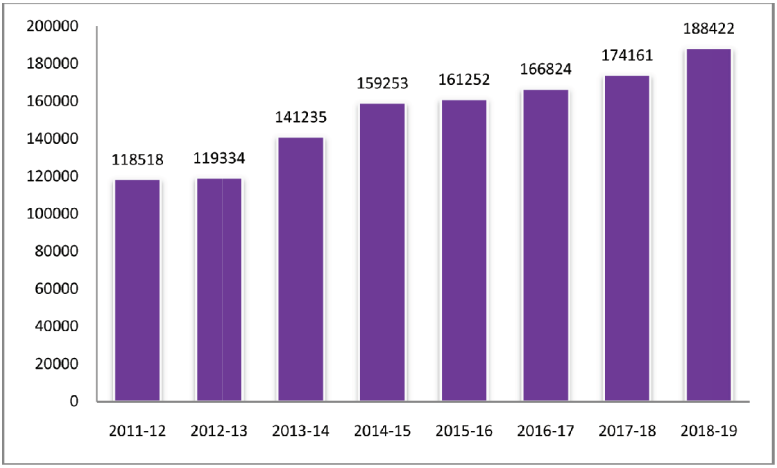
Area covered under Fodder Development Scheme (in acres)



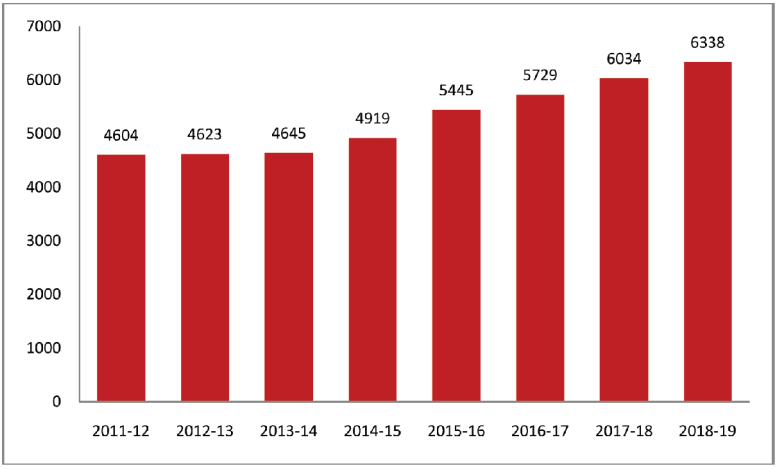
Estimated Milk Production
(Lakh Metric Tonne)



Estimated Egg Production (lakh nos.)

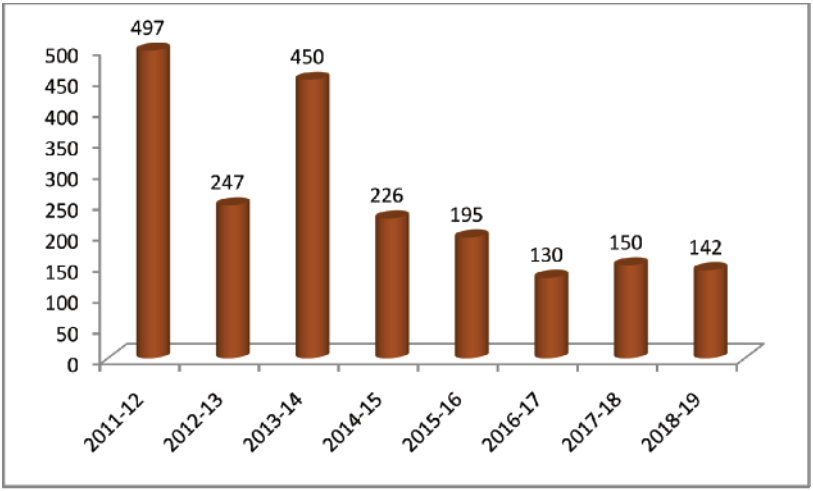


Estimated Meat Production (lakh Kgs.)



Budget allocation for construction of new veterinary institutions

(Rs in crore)



Hon'ble Chief Minister, Deputy Chief Minister and Hon'ble Ministers inaugurating Jallikattu event in Alanganallur, Madurai

Hon'ble Chief Minister and Deputy Chief Minister distributing relief materials to Gaja affected livestock farmers

Hon'ble Minister for Animal Husbandry inaugurating
the Distribution of Native Chicks to
poor women beneficiaries

Kalnadai Padhukappu Thittam Camp

Hon'ble Minister for Animal Husbandry distributing Goats under the Free Distribution of Goats/Sheep Scheme

Provision of Water trough for Livestock

Principal Secretary to Government, Animal Husbandry, Dairying and Fisheries Department, Government of Tamil Nadu along with the Joint Secretary (LH), GOI, Additional Chief Secretary (Haryana), Chairman, (NDDB), Gujarat and Deputy Commissioner, (NLM), GOI at the 87th General Session of OIE held on 27th to 31st May 2019 at Paris, France.