ANIMAL HUSBANDRY, DAIRYING AND FISHERIES DEPARTMENT

ANIMAL HUSBANDRY

POLICY NOTE 2020-2021

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

"Livestock farming is an important for the livelihood and economy of farmers. The farmer depend on the milk, meat and eggs that are produced by the livestock that they rear for their sustained livelihood. Livestock that help the farmers in the agricultural operations are seen as their best friends. Besides plaguing livestock also provide manure to enrich the farmers fields. The increasing production of livestock products has transformed livestock rearing into an avocation with immense export potential"

Address of the Hon'ble Tamil Nadu Chief Minister during the inagurual function of Advanced Intitute for Inegrated Research on Livestock and Animal Sciences and Veterinary College on 09.02.2020 at Thalaivasal, Salem District.

I N D E X

ANIMAL HUSBANDRY DEPARTMENT
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1. INTRODUCTION

Mankind has been utilizing different animal species from the dawn of civilization for a variety of purposes such as production of milk, meat, wool, egg, skin and hide. In addition, various animal species are also used for draught power, research experimentation, sports, security, companionship, entertainment, etc., thus livestock sector plays an inevitable role in rural economy and livelihood.

Livestock sector is an important subsector of agriculture and serves as a very important role in the socio-economic development of the State. The sector contributes significantly to the State's economy, besides being a source of livelihood for rural women either in principal or subsidiary status.

1.1 India's scenario

India, the fifth largest economy of the World with a Gross Domestic Product (GDP - at factor cost) annual growth rate of 6.2% which is driven mainly by industrial growth of 6.21% and service sector growth of 8.20%. Agriculture and allied sectors contribute nearly 14.1% to the Gross Domestic Product at constant 2004-05 prices, while ensuring livelihood to 58.2% of the country's population.

Although the contribution of agriculture to National GDP is declining over the years, the contribution of livestock sub-sector to agricultural GDP has increased impressively from less than 15% in the late 70s to over 33% in 2009 in the last 20 years (Economic Survey, India, 2011-12; Directorate of Economics and Statistics, Govt. of India).

Livestock sector makes multifarious contributions to overall welfare of the rural population in terms of generating more employment opportunities, especially for the marginal and small farmers and landless labourers, alleviating poverty and stabilizing farm income.

Besides, it supplies draught power and organic manure to the crop sector; hides, skin, bones, blood and fibres to the industries. In addition, it provides for environmental conservation by utilizing huge amount of crop residues and by-products as feed/fodder and supplying renewable energy sources in terms of dung and draught power.

Thus, it is evident that the livestock sector plays an important role in providing nutritive food, supplementing family incomes and generating gainful employment in the rural sector.

Milk production alone involves more than 30 million small producers, each raising one or two cows or buffaloes. The organic fertilizer produced by the sector is an important input to crop production and dung from livestock is widely used as fuel in rural areas.

Livestock also serves as an insurance substitute, especially for poor rural households as it can easily be sold during the time of distress.

India has emerged as the largest producer of milk with 20.17 percent share in total milk production in the world.

India accounts for about 5.65 percent of the global egg production and also the largest population of milch animals in the world with 110 million buffaloes, 133 million goat and 63 million sheep. India's share into total meat production is 3 percent globally (Agricultural and Processed Food Products Export Development Authority – APEDA, 2018).

1.2 Livestock contribution

As per 20th Livestock census, 2019 India's livestock population consist of cattle 193.46 million, buffaloes 109.85 million, sheep 74.26 million, goats 148.88 million, pigs 9.06 million, camel 2.51 lakh, horses 3.42 lakh and total poultry 851.81 million.

1.3 Tamil Nadu scenario

Tamil Nadu, possessing 4.56% of India's livestock population, contributes 4.39% to country's milk production and 7.88% to meat production.

The State produces 18.29% of the total eggs produced in India, next to Andhra Pradesh (18.67%). As a result, the State contributes 5.29% to the total value of output from livestock in the country.

1.4 Contribution to economy

It needs to be specially mentioned that the State's livestock contributes 45.62% to the value

of State's agricultural output, while the All India average is only 28.83%.

In the State, the contribution of livestock to the total GDP has increased from 2.88% in 2007-08 to 5.47% in 2016-17 and its contribution to the agricultural GDP has risen from 25.70% to 45.62% during the same period.

Majority of farmers depend on animal husbandry activities for their livelihood. With increase in production of livestock products, livestock rearing is also considered as an important avocation with high export potential. The 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.

The contribution of livestock sector to the Gross State Value Added (GSVA) is 5.47% and that to the Agriculture and allied activities is

45.62%. 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.78,744.09 crore during 2018-19.

The estimated milk production, which was 54.74 Lakh Metric Tonnes (LMT) during 2005-06 in Tamil Nadu, increased to 83.62 LMT during 2018-19. Likewise, the estimated egg production which was 62,225 lakh numbers during 2005-06 has increased to 1,88,422 lakh numbers during 2018-19 and the estimated meat production (including poultry meat) which was 1,18,616 MT during 2005-06 increased to 6,33,802 MT during 2018-19.

The per capita availability of milk per day increased from 231 gm to 285 gm and the per capita availability of eggs per annum has increased from 97 numbers to 265 numbers during the period between 2005-06 to 2018-19.

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) and Responsible consumption and Production (Goal 12) through implementation of various programmes and policies of the Department.

2. OBJECTIVES OF THE ANIMAL HUSBANDRY DEPARTMENT

The following are the objectives of the Department:

- Up-gradation 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
- Organising animal husbandry practices on scientific lines for increasing production and productivity of livestock
- 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 and entrepreneurs

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 laborers 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 20th Census

Species	**Population** (in lakh Nos.)
Cattle	95.19
Buffalo	5.19
Sheep	45.00
Goat	98.89
Pigs	0.67
Others (Horses, Ponies, Mules, Donkeys and Camel)	0.07
Total Livestock	**245.00**

Species	Population (in lakh Nos.)
Fowls and other birds (Farm and backyard poultry)	1,205.42
Duck (Farm and backyard poultry)	2.01
Turkey (Farm and backyard poultry)	0.38
Total Poultry	**1,207.81**

A majority of the cattle reared by the farmers comprise of high milk yielding cross bred cattle like *Jersey* and *Holstein Friesian*.

While Jersey cross bred cattle is the breed of choice in the plains, Holstein Friesian breeds are reared in the hilly areas and in Districts like Nilgiris, Coimbatore, Dharmapuri, Dindigul, Erode, Karur, Krishnagiri, Kanyakumari and Tiruppur where the climate is conducive for rearing this breed.

Besides these, native breeds of cattle like *Kangayam, Umblachery, Alambadi, Bargur,*

Pulikulam and Toda buffaloes are reared in their respective native tracts.

Among them, Kangayam cattle are reared in western districts such as Dindigul, Namakkal, Erode, Coimbatore, Tiruppur, Salem and Karur; Umblachery cattle in eastern districts namely Thanjavur, Thiruvarur, and Nagapattinam; Alambadi cattle in western districts such as Dharmapuri, Erode and Salem; Pulikulam cattle in southern districts namely 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 *KanniAdu* (Thoothukudi and Tirunelveli districts), *KodiAdu* (Thoothukudi and Ramanathapuram districts) and *Salem black* (Salem district) are reared in Tamil Nadu. (*Districts within parenthesis indicate native districts)*

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

As per the 20th Quinquennial Livestock Census, Tamil Nadu ranks 1st in respect of poultry, 5th in sheep, 7th in goats, 14th in bovines (Cattle and Buffalo) population in the country.

3.1 Population as per 20th Livestock Census

The 20th Livestock census was enumerated with 10th June, 2019 as the crucial date. The following are the salient features of the results with respect to Tamil Nadu.

Table 2: Comparison of Livestock population between 19th and 20th Census (lakh)

S. No	Species	Population as per 19th Livestock census	Population as per 20th Livestock census
1	**Cattle**	88.14	95.19
2	**Buffaloes**	7.81	5.19
3	**Sheep**	47.87	45.00
4	**Goat**	81.43	98.89
5	**Pigs**	1.84	0.67
6	**Poultry**	1173.49	1207.81

The increase of 7.40% in cattle and 17.65% in goat population can be attributed to the implementation of Free Distribution of Milch cow / Goat Scheme to the rural Poor women in which these poor women have become owners of movable assets which can be liquidated for money in times of need.

The decline in sheep population of 6.36% can be attributed to the rapid urbanization

of the state with a consequent decrease in grazing lands.

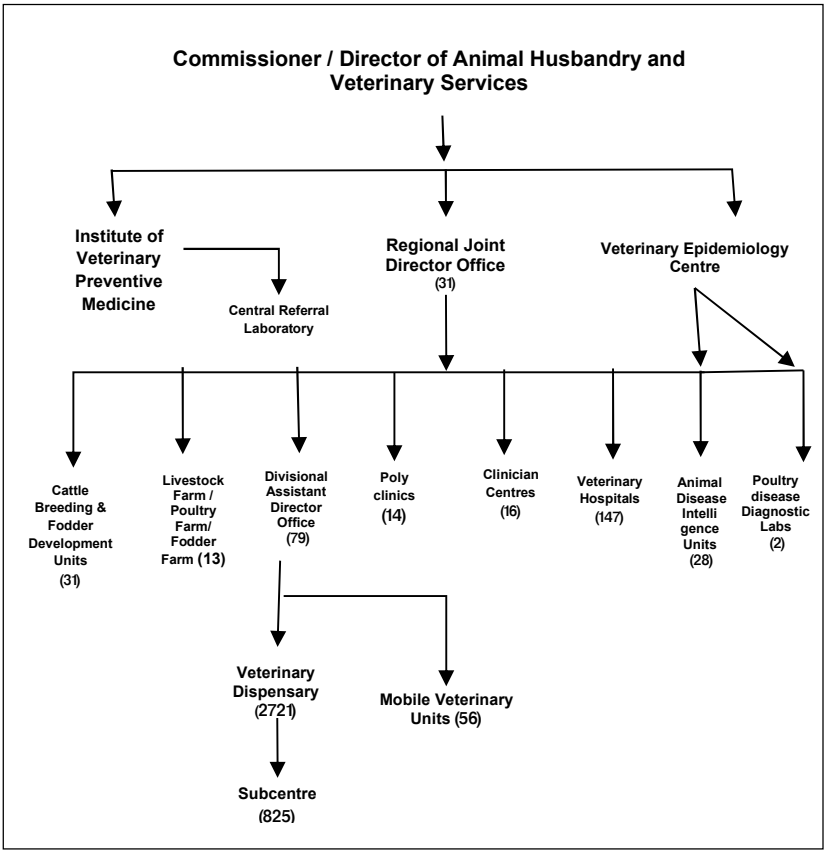
The prevailing poultry culture in the State has further nurtured a lot of small and medium sized poultry farms and entrepreneurs in rural areas with the result there is an increase of 2.84% total poultry population in the State and 34.54% in Rural Backyard Poultry.

In 20th livestock census 46.82% of stray dog population and 31.49% of stray cattle population were declined, due to various animal welfare measure being undertaken in the State to control the spread of zoonotic disease.

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.

ORGANISATIONAL CHART



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.

A Financial Controller, a Chief Accounts Officer deputed from Finance Department and Accounts Officer, Assistant Accounts Officer deputed from Treasuries and Accounts Department, Assistant Director (Agri.) from Agriculture Department and Deputy Registrar from Co-operative Department provide assistance to the Director on concerned issues.

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, Ranipet district, which manufactures veterinary biologicals, 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.

5. VETERINARY SERVICES

The 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 district headquarters to remote villages.

5.1 Veterinary Institutions

Veterinary Sub-centres (825) manned by para-veterinarians provide minor veterinary

services including first aid and breeding services at remote villages.

Veterinary Dispensaries (2,721) that are located in village panchayats and manned by Veterinary Assistant Surgeons provide veterinary care to the livestock reared by farmers in the areas around the Veterinary Dispensaries.

Veterinary Hospitals (147) a majority of which are located at block headquarters and manned by senior veterinarians in the cadre of Assistant Director of animal husbandry provide secondary care to the livestock that are presented to these institutions.

Clinician Centres (16) a majority of which are located in the district headquarters and Veterinary Polyclinics (14) 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 3: District wise veterinary institutions established

Sl. No.	District	Poly-clinics	Clinician centres	Hospitals	Dispen saries	Sub centres	Mobile Veterinary Units
1	Ariyalur	0	0	2	44	8	1
2	Chengalpattu	0	1	1	60	21	0
3	Chennai	1	0	1	0	0	1
4	Coimbatore	1	1	15	96	21	2
5	Cuddalore	0	1	5	92	56	1
6	Dharmapuri	0	1	3	78	11	2
7	Dindigul	1	0	5	105	64	1
8	Erode	2	0	6	103	25	3
9	Kallakurichi	0	1	2	55	17	2
10	Kancheepuram	0	1	0	45	18	2
11	Kanyakumari	0	1	2	49	15	2
12	Karur	0	1	2	71	13	1
13	Krishnagiri	0	1	2	79	14	1
14	Madurai	1	0	4	96	53	1
15	Nagapattinam	0	2	4	72	20	2
16	Namakkal	0	0	5	105	5	3
17	Perambalur	0	0	0	37	4	0
18	Pudukottai	0	1	4	101	31	2
19	Ramanathapuram	0	0	4	55	14	0
20	Ranipet	0	0	2	46	10	1
21	Salem	1	0	7	148	9	6
22	Sivagangai	0	0	2	78	46	0

Sl. No.	District	Poly-clinics	Clinician centres	Hospitals	Dispen saries	Sub centres	Mobile Veterinary Units
23	Tenkasi	0	0	3	61	18	0
24	Thanjavur	1	1	6	106	28	3
25	The Nilgiris	0	1	2	29	7	3
26	Theni	0	0	3	53	46	1
27	Thiruppur	2	0	6	100	37	1
28	Thiruvallur	0	0	5	88	26	1
29	Thiruvannamalai	0	1	5	123	21	3
30	Thiruvarur	0	1	9	70	32	1
31	Thoothukudi	1	0	2	68	39	1
32	Tiruchirapalli	1	0	8	102	35	2
33	Tirunelveli	1	0	4	52	15	1
34	Tirupattur	0	0	2	37	8	2
35	Vellore	1	0	4	38	7	1
36	Villupuram	0	0	5	98	5	2
37	Virudhunagar	0	0	5	81	26	0
TOTAL		**14**	**16**	**147**	**2721**	**825**	**56**

Table 4: Veterinary services provided during 2019-20 (in lakh)

Species	Cases Treated	Castration	Deworming
Cattle	109.76	1.03	51.14
Buffalo	6.74	0.01	5.07
Sheep	44.05	1.26	89.98
Goat	92.30	6.46	142.84
Dog & Cat	19.21	0.08	8.23
Poultry	53.42	0	22.71
Others	2.66	0.03	1.49
Total	328.14	8.87	321.46

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

Table 5: Fund allocation for medicines 2019-20

Sl. No	Name of the Scheme	Fund Allotted (Rs. in Lakh)
1	Medicine	2,797.00
2	Equipment and surgical suture materials	128.79
3	Chemicals	39.72
4	Intensive Health Cover	100.00
5	Mineral mixture	365.52
6	Alternative medicine	103.28
7	Reserve fund	147.55
	TOTAL	3,681.86

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

Table 6: Institution wise fund allocation for medicines 2019-20

Sl. No	Type of Institution	Fund Allocation (Rs. in lakh)
1	Animal Disease Intelligence Unit(ADIU)	39.72
	Poultry Disease Diagnostic Laboratory (PDDL)	
2	Livestock Farms	18.87
3	Veterinary Polyclinics	53.70
4	Clinician Centres	42.06
5	Veterinary Hospitals	233.11
6	Pet Clinic, Adyar	1.31
7	Poultry Farm, Kattupakkam	1.08
8	Veterinary Dispensaries	2965.34
9	Mobile Veterinary Units	35.95
10	Cattle Breeding and Fodder Development Units	16.43
11	Dog Breeding Unit, Saidapet	0.33
12	Veterinary Sub-Centres	170.00
13	Poultry Extension Centres	0.66
14	Visiting Sub Centres	3.30
15	Intensive Health Cover	100.00
Total		**3681.86**

6. DISEASE PREVENTIVE SERVICES

6.1 Disease Preventive Institutions

6.1.1 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.

Table 7: Biological Products Produced at present

Sl. No	Item	Name of the products produced
1	Bacterial vaccines	Haemorrhagic septicemia Vaccine (HSV), Black quarter Vaccine (BQV), Enterotoxaemia Vaccine (ETV), Anthrax Spore Vaccine (ASV)
2	Viral vaccines	Cell Culture Sheep Pox Vaccine (SPV), Ranikhet Disease Vaccine (Asplin F-Strain) – (RDV-F), Ranikhet Disease Vaccine (Lasota – strain) – (RDV – Lasota),

Sl. No	Item	Name of the products produced
		Ranikhet Disease Vaccine (Komorov – Strain) – (RDV-K), Duck Plague Vaccine (DPV) – (Dutch Strain)
3	Diagnostics & reagents	*Brucella abortus* plate (Colored) antigen, *Brucella abortus* tube (Plain) antigen, Milk Ring Test (MRT) antigen, *Salmonella pullorum* colored antigen (SPCA), California Mastitis Test Reagent (CMTR)
4	Diluent	Phosphate buffer saline (P.B.S)

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 bacterial vaccine production laboratory is already Good Manufacturing Practices (GMP) compliant and vaccine production is already underway from the upgraded laboratory.

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 work of construction of the Quality Control / Quality Assurance lab and Anthrax Spore vaccine Production lab with GMP standards, Small Animals Testing facilities with Good Laboratory Practices (GLP) standards is presently underway at IVPM Ranipet.

Table 8: Biologicals produced by IVPM during 2019-20

Sl No	Name of the biological produced	Doses
A.	**Bacterial Vaccines (doses in lakh)**	
1	Anthrax spore vaccine	30.617
2	Black quarter vaccine	5.426
3	Enterotoxaemia	0.60850
4	Haemorrhagic septicaemia	2.5915

Sl No	Name of the biological produced	Doses
B.	**Viral Vaccines (doses in lakh)**	
1	Sheep Pox vaccine	1.15
2	Duck Plague vaccine	194.112
3	Ranikhet disease vaccine 'F'	66.22
4	Ranikhet disease vaccine 'K'	693.872
5	Ranikhet disease vaccine *'Lasota'*	71.16
C.	**Diagnostics (in ml)**	
1	CMT Antigen	4,03,000
2	Brucella abortus Coloured Antigen	2190
3	SPC Antigen	1000
D.	**Diluents (in litres)**	
1	Phosphate Buffer Saline	1976700

6.1.2 Disease surveillance, diagnosis and control

In order to monitor the vaccination programmes and ensure that all the susceptible livestock and poultry are covered by 28 Animal Disease Intelligence Units (ADIUs), two Poultry Disease Diagnostic Laboratories (PDDLs), one

Veterinary Epidemiology Centre and one Central Referral Laboratory (CRL) in the State.

6.1.3 Animal Disease Intelligence Units (ADIU)

These units play a major role in disease forecasting, attending outbreaks, conducting awareness camps, distribution of vaccines and monitoring vaccination programmes, 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 such as Brucellosis, Tuberculosis, Para-Tuberculosis, Avian Influenza, Bovine Spongiform Encephalitis etc.,

Sophisticated instruments like haem analyser, 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 in these units for maintaining cold chain for vaccines.

Animal Disease Intelligence Units have been established in 28 districts except in Ariyalur, Ramanathapuram, Kanyakumari, Tenkasi, Kallakurichi, Thirupathur, Ranipet, Chengalpattu and Chennai. These districts are covered by the ADIUs of Perambalur, Sivagangai, Tirunelveli, Villupuram, Vellore and Kancheepuram ADIUs respectively.

6.1.4 Poultry Disease Diagnostic Laboratory (PDDL)

To cater 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 Ranikhet Disease, IBD, IB, Avian Leucosis Complex, common bacterial diseases like Salmonella, E.coli and parasitic infestations.

These Bio Safety Level II (BSL II) compliance laboratories carry out preliminary screening of Avian Influenza.

Another PDDL with laboratory facilities for water and feed testing has been constructed in collaboration with National Dairy Development Board (NDDB) and TANUVAS at Palladam, Tiruppur district with a view to cater the needs of numerous broiler farmers.

6.1.5 Veterinary Epidemiology Centre (VEC)

The Veterinary Epidemiology Centre was established on September 2017 at Saidapet,

Chennai. The centre is carrying out the surveillance, monitoring and forecast of livestock and poultry diseases in Tamil Nadu.

The centre is headed by Chief Epidemiology Officer in the cadre of Joint Director of Animal Husbandry.

From April 2019 to January 2020, the VEC has attended 10 disease outbreaks related inspection in the State besides carrying out the monitoring FMD-CP vaccination work during 16th and 17th round.

6.1.6 Central Referral Laboratory (CRL)

Central Referral Laboratory, the apex laboratory of the State for diagnosis of livestock diseases is located at IVPM, Ranipet.

This laboratory 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. CRL functions under the control of Director, IVPM, Ranipet.

6.2 Disease Preventive Services

Animal health is the backbone of livestock industry. Microbial diseases and parasitic infestations cause mortality and severe production losses in livestock.

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

Prevention and eradication of livestock diseases improves the production of livestock products and improves the value of livestock products in international trade. Adopting disease prevention measures would eventually lead to eradication of livestock diseases.

The World Organisation for Animal Health (OIE- *Office International des Epizooties*) has indicated certain issues that are concerned in the livestock sector.

The department is committed the following norms as indicated by the Government of India from time to time so that our products have acceptance in the International Trade. This will also pave the way for achieving the goal of doubling the farmers' income.

Table 9: Vaccination carried out during 2019-20

Name of the Disease	Type of animals Vaccinated	No. of animals vaccinated (nos. in lakh)
Anthrax	Cattle, Buffalo, Sheep and Goat	27.34
Black quarter	Cattle	4.20
Enterotoxaemia	Sheep	0.60
Foot and Mouth Disease	Cattle, Buffalo	93.59
Fowl Pox	Poultry	0.02
Haemorrhagic septicaemia	Cattle and Buffalo	1.46
Peste des petits ruminants	Goats	0.94
Ranikhet disease	Poultry	238.09
Rabies	Pet animals	0.498
Sheep Pox	Sheep	0.39

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

Vaccines against economically important livestock diseases such as 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 (ASCAD)" scheme. All the vaccinations are carried out free of cost.

Besides the vaccines mentioned above, Institute of Veterinary Preventive Medicine manufactures (IVPM) Ranikhet Disease vaccine, Fowl Pox vaccine and Duck Plague vaccines also. Vaccine for PPR disease is sourced from PPR-CP scheme by Government of India.

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, 17 rounds of FMD vaccination had been carried out in the State. During the 17th round of vaccination conducted during October 2019, 93.59 lakh cattle and buffaloes were vaccinated.

6.2.1 National Animal Disease Control Programme (NADCP)

During 2019-20, Government of India has introduced a new scheme namely "National Disease Control Programme for Foot and Mouth Disease and Brucellosis (NADCP)", where Central Government would provide 100% financial support to States /UTs and the objective of the programme is to control FMD by 2025 with biannual vaccination and its eventual eradication by 2030. This scheme, launched by the Hon'ble Prime Minister of India on 11.09.2019 at Mathura

is being implemented from January 2020 onwards all over the country.

The ongoing activities of Foot Mouth Disease Vaccination (FMDCP) and Brucellosis vaccination (Brucellosis CP) under the Centrally Sponsored 'Livestock Health and Disease Control (LHDC)' scheme will be hereafter carried out under NADCP with 100% central assistance as stated above.

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 shall undertake surveillance for the prevalence of Brucellosis in cattle and initiate a vaccination programme depending on the results of surveillance under NADCP.

6.2.2 All India Coordinated Research Project (AICRP) on Animal Disease Monitoring and surveillance (ADMAS) –National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI)

A new ADMAS-NIVEDI colloborating unit under Veterinary Epidemiology centre was approved for Tamil Nadu in the XII plan Expenditure Finance Committee (EFC) of ICAR-NIVEDI, Bengaluru and the same was started functioning from October 2016.

A MoU was signed between ICAR-NIVEDI, Bengaluru and Animal Husbandry Department for implementation of All India Coordinated Research Project (AICRP) on Animal Disease Monitoring and surveillance (ADMAS) in our state by utilizing the existing departmental staff and facilities including infrastructure and thereby carryout livestock and poultry disease surveillance and monitoring for the benefit of the farming community.

This scheme is fully funded by Government of India. The disease outbreak (OBR) and surveillance data's will be collected and shared to ICAR-NIVEDI for epidemiological analysis.

7. BREEDING SERVICES

All the field institutions of the department provide breeding services to the cattle population. Artificial insemination service is provided for cattle and buffaloes at Rs.10 per insemination. A total of 48.88 lakh Artificial inseminations were performed during the year 2019-20.

Frozen semen straws required for the artificial insemination programme is produced in three frozen semen production stations functioning from the departmental farms at Eachenkottai, Hosur and Udhagamandalam.

The Minimum Standard Protocol for Frozen Semen Production stations as prescribed by Government of India is strictly adhered to.

Breeding bulls of *Jersey, Holstein Friesian, Crossbred Jersey, Crossbred Holstein Friesian, Red Sindhi, Kangayam, Umblachery, Bargur, Pulikulam and Murrah breeds* are maintained in these stations.

The Frozen Semen Production Stations under the control of the Department have produced 18.88 lakh exotic, 32.28 lakh crossbred, 3.95 lakh indigenous and 2.10 lakh buffalo frozen semen during 2019-20.

Table 10: Frozen Semen Straws production during 2019-20

Sl. No	**Frozen Semen Station**	**Breeds**	**No. of Straws produced *(in lakh)***
1	**Exotic Cattle Breeding Farm, Eachenkottai**	Jersey, Jersey cross, Umblachery, Murrah	34.62
2	**District Livestock Farm, Hosur**	Jersey cross, Sindhi, Kangayam, Pulikulam, Bargur	9.46

Sl. No	Frozen Semen Station	Breeds	No. of Straws produced *(in lakh)*
3	**District Livestock Farm, Udhagamandalam**	Jersey, Jersey cross, Holstein Friesian, Holstein Friesian cross	13.13
Total			**57.21**

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

Table 11: District wise breeds of Frozen Semen Straws Supplied

Distribution of breeds							
S. No.	**District**	**Breeds used in AI programme**					
1	Ariyalur	Jersey,Jersey cross, HF cross and Red Sindhi breeds in all districts					Murrah Buffalo in all districts
2	Chennai						
3	Coimbatore		HF		KAN		
4	Cuddalore						
5	Dharmapuri		HF				
6	Dindigul		HF		KAN		
7	Erode		HF		KAN	BAR	
8	Kancheepuram						
9	Kanyakumari		HF				
10	Karur		HF		KAN		
11	Krishnagiri		HF				
12	Madurai						PUL
13	Nagapattinam			UMB			
14	Namakkal				KAN		
15	Perambalur						
16	Pudukottai						
17	Ramanathapuram						
18	Salem				KAN		
19	Sivagangai						PUL
20	Thanjavur			UMB			
21	The Nilgiris		HF				
22	Theni						
23	Tiruchirappali						
24	Tirunelveli						
25	Thiruppur		HF		KAN		
26	Thiruvallur						
27	Thiruvannamalai						
28	Thiruvarur			UMB			
29	Thoothukudi						
30	Vellore						
31	Villupuram						
32	Virudhunagar						PUL

*(UMB: Umbalachery KAN: Kangayam, BAR:Bargur, PUL: Pulikulam)

Table 12: District wise Artificial Insemination Target and Achievements

S. No.	District	19-20 Annual Target	Achievement (up to Feb' 2020)
1	Ariyalur	2600	1815
2	Chennai	273500	107509
3	Coimbatore	215100	152129
4	Cuddalore	313300	215996
5	Dharmapuri	340600	243020
6	Dindigul	340000	293601
7	Erode	234500	147479
8	Kancheepuram	124600	105806
9	Kanyakumari	156400	131765
10	Karur	211500	176126
11	Krishnagiri	254400	132995
12	Madurai	128300	104030
13	Nagapattinam	223100	197846
14	Namakkal	147300	130629
15	Perambalur	119000	111803
16	Pudukottai	183500	120797
17	Ramanathapuram	52000	43703
18	Salem	399400	247292
19	Sivagangai	77300	56902
20	Thanjavur	322300	215112
21	The Nilgiris	26600	15993
22	Theni	274800	196998
23	Thiruchirapalli	102400	72862
24	Thirunelveli	285300	230703
25	Thirupur	298100	156475
26	Thiruvallur	132400	134263
27	Thiruvannamalai	308900	249717
28	Thiruvarur	163600	107022
29	Thoothukudi	90700	68638
30	Vellore	369500	268456
31	Villupuram	447900	333748
32	Virudhunagar	175500	117231
	TOTAL	**6794400**	**4888461**

7.1 Conservation of indigenous breeds of cattle

Tamil Nadu is endowed with diverse fauna and flora which have evolved over generations to adapt the local agro climatic and socio-economic needs of the people. Tamil Nadu has the following native breeds of cattle viz. (a) *Alambadi*, (b) *Bargur* (c) *Kangayam*, (d) *Pulikulam* (e) *Umblachery* and (f) *Toda* Buffaloes. Thay 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 the utility of native cattle 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 crossbreeding which has resulted in dilution of the native germplasm. In order to arrest this depleting trend of native breeds, it is imperative to improve and conserve this valuable germplasm.

The genetic and molecular characterisation of all native breeds of cattle, buffalo, sheep, goat and dog is undertaken in collaboration with Tamil Nadu Veterinary and Animal Sciences University 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 their 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, Kangayam and Pulikulam breeds of cattle have been established by the Tamil Nadu Veterinary and Animal Sciences University.

7.2 Use of latest Genetic tools for breed improvement

7.2.1 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 sorted and eliminated and as a consequence only female calves are 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.

7.2.2 Use of imported Frozen Embryos

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

7.2.3 In Vitro Fertilization

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

7.2.4 Bovine Breeding Act

Bovine Breeding Act was promulgated to regulate bovine breeding activities including use of bovine breeding bulls for production of bovine semen; production, processing, storage, sale and distribution of bovine frozen semen; artificial insemination services in bovines based on the breeding policy of the State for improving the productivity of bovines. The Act has been notified in the State Gazette.

The salient features of this Bovine Breeding Act are:

- Registration, certification and monitoring of Bulls meant for frozen semen production.
- Registration and monitoring of Semen Production Stations.
- Registration of Artificial Insemination Service Providers and monitoring their performance.
- Registration of AI technicians and monitoring their performance.

- Recognition and monitoring of Artificial Insemination Training Institutes.
- Regulation of sale of frozen semen.
- Regulations for bovine breeding through natural service.

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 infrastructures 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 and also collaborating with research institutes like TANUVAS/ TNAU etc.

In order to address the requirement of cattle with high 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 has 95.19 lakh cattle and 5.19 lakh buffaloes as per the 20th Quinquennial Livestock Census. Out of this, 81.15% are crossbred and exotic cattle and 18.85% 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, crossbred and exotic frozen semen.

Table 13: Bovine Breeds maintained in the Departmental Farms

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

S No	Name of the Farm	Type of animal	Breeds maintained
5	District Livestock Farm, Pudukottai (Pudukottai District)	Cattle	Crossbred Jersey and Crossbred Holstein Friesian.
6	District Livestock Farm, Naduvur (Thanjavur District)	Cattle	Jersey, Crossbred Jersey and Crossbred Holstein Friesian
		Buffalo	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 2019-20, 442 calves were born in the Department livestock farms and 20 calves were sold to the livestock farmers for breeding purposes. The Departmental farms produced 3.69 lakh litres of milk during 2019-20.

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 (HGM) 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 has also introduced the usage of sex sorted semen through which only

heifer calves shall be produced. This technology is 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.

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 crossbred 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 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 management inputs and thus the entire cattle population in these villages were benefited. Skill development of the beneficiaries resulted in a multiplier effect with other farmers also benefiting from the improved management practices adopted by the beneficiaries of the scheme.

8.1.1.1 Salient Features

- The scheme is implemented in 21 districts from 2011-12 to 2017-18 and was extended to 9 more districts from 2018-19.

- The distribution of milch cows is taken up in those Village Panchayats where there were primarily no milk producers cooperative societies and non-functional milk producers co-operative societies in certain districts where milk producers co-operative societies formed already. Consequent to the distribution of milch cows, milk producers co-operative 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 / neighboring States and the beneficiaries themselves select their cows.
- Insurance of animals is done at Government cost at purchase spot itself.

8.1.1.2 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.

8.1.1.3 Achievements

Under Free Distribution of Milch Cows Scheme, since 2011-12 to 2019-20, 99,379 women beneficiaries were provided with 99,379 milch cows.

Approximately 1.99 lakh calves worth Rs.99.31 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 at free of cost for the year 2020-21.

8.1.1.4 Calf Management

Calf management starts before the animal is born. The pregnant dam should be provided with proper nutrition to ensure that the calf is born strong and healthy. Immediately after calving, ensure that the calf is breathing freely by wiping

off mucus from its nostrils. The calf's navel is then tied, cut and disinfected with 2 per cent iodine to prevent infection that may lead to navel ill.

Calf feeding is aimed at providing the required nutrients and encouraging rumen development. The calf may be weaned at 12 weeks of age. Weaning is the transition from milk to solid feed. Weaning should be done gradually by feeding calves with good quality fodder/hay and concentrates.

8.2 Sheep and Goat Development

In Tamil Nadu, Sheep and Goats are reared by 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 supply 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 infertility related issues besides up-gradation 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 14: Small Ruminant Breeds maintained in the Departmental Farms

S. No	Name of the Farm	Type of animal	Breeds
1	District Livestock Farm, Hosur (Krishnagiri Dist.)	Sheep	Mecheri
		Goats	Kodi Adu, Salem Black, Tellichery
2	District Livestock Farm, Abisegapatti (Tirunelveli Dist.)	Sheep	Kelakarisal
		Goat	Kanni Adu
3	District Livestock Farm, Pudukottai (Pudukottai Dist.)	Sheep	Ramnad White
		Goats	Jamunapari

S. No	Name of the Farm	Type of animal	Breeds
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 2019-20, 673 lambs and 745 kids were born in the Department Farms and 448 lambs and 408 kids were sold to the livestock farmers for breeding purposes.

8.2.1 Scheme for Free Distribution of Goat/ 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, targets were allotted to each village panchayat in the ratio of 1:50 of the population from 2011-12 to 2017-18.

During 2018-19, instead of restricting the targets to a 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 in the village benefitted and a cluster of goat/sheep farmers were created.

8.2.1.1. 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**.**

8.2.1.2 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.

8.2.1.3 Achievements

A total of 11,67,674 poorest of the poor women have been provided with 46,70,696 Goats / Sheep since 2011-12 to 2019-20.

Approximately 78.13 lakh kids worth Rs.1,953.44 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 free of cost during 2020-21.

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.

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 cluster and Tirunelveli,

Thoothukudi and Virudhunagar districts of Sankarankovil cluster.

In order to enhance the livelihood opportunities and promote entrepreneurship in rural areas 2,961 Broiler farms and 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.

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 supplied 50 numbers of Aseel birds along with night shelters free of cost to 77,000 women beneficiaries in the village panchayats in all districts of Tamil Nadu except

Chennai at a total cost of Rs.50 crore during 2018-19.

The scheme was extended to benefit poor women beneficiaries in Town panchayats also besides Village Panchayats in all the 31 districts as the scheme addressed poverty and livelihood issues in a positive way among poor for the year 2019-20 at a total cost of Rs.50 crore.

As per the scheme, it was envisaged to distribute 25 numbers of four weeks old Aseel chicks per beneficiary to 2.40 lakh women beneficiaries. A total of 60 lakh Aseel birds will be distributed. Till now 14,56,375 four weeks old Aseel birds have been distributed to 58,255 women beneficiaries.

8.3.1.1.1 Eligibility Criteria for Beneficiaries:

1. Women farmers with original Participatory Identification of Poor (PIP) allotment number as provided by Tamil Nadu State Rural Livelihood Mission in the rural

panchayats and women farmers with BPL number in town panchayats.

2. Women belonging to Self Help Groups registered with Tamil Nadu State Rural Livelihood Mission shall be given preference.
3. The beneficiary should be a permanent resident of that village /town panchayat.
4. The beneficiary should not have benefitted from free milch cow, goat/ sheep scheme or poultry schemes during previous years.
5. Preference will be given to widows, destitutes and physically challenged.
6. 30% of the beneficiaries selected should be from SC/ST category.

The birds reared in a backyard system require very little concentrate feed as they scavenge their feed from available sources making it as a very cost effective system of rearing. Each bird will lay an average of 1,000 – 1,250 eggs in their productive period

resulting in a revenue of around Rs.8,000 to 10,000.

In addition, the beneficiary will also benefit from sale of live birds. If the beneficiary ploughs back the profit derived from the unit and procures more birds, or hatches out chicks from the eggs produced, it will enable sustained revenue.

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

The Department is also encouraging rearing of Low input technology dual purpose birds (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 of production period, second batch of 200 birds will be provided to the same beneficiary so as to ensure the sustainability of the farm and for economic upliftment of farmers. The second set of 200 birds per beneficiary for 200 beneficiaries will be provided during the current year.

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

Besides this, an Innovative poultry productivity project for broilers was implemented in Tiruvannamalai district wherein 2001 beneficiaries were provided fund for

purchase of 600 birds in four batches of 150 birds.

A total fund of Rs.225 lakh was provided for construction of sheds, procurement of feed, feeder, waterer and to purchase 1,20,000 birds. The fund for the same was sourced from the National Livestock Mission with 60% assistance from Central Government and 40% from State Government.

A total of 200 beneficiaries are being selected from Villupuram district for implementing the above scheme at a total cost of Rs.225 lakh.

8.3.3 Poultry Units in Departmental Farms

The Department maintains poultry units in 4 farms. These farms act as model units for demonstrating best practices and scientific techniques to the poultry farmers.

Table 15: 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
3	District Livestock Farm, Chettinad (Sivagangai District)	Aseel
4	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 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 fund for the scheme has been sourced from the National Agriculture Development Programme.

8.3.3.2 Steps to ensure Maize availability for poultry feed

The Government took proactive steps to mitigate the difficulties faced by poultry farmers due to shortage in the production of maize.

Maize is an important constituent in poultry feed and maize crops that were grown in an area of 2.20 lakh hectares out of the total 3.55 lakh hectares in which maize crop was sown were affected by "Fall Army worm" in Tamil Nadu.

The non-availability of maize resulted in the increase in maize price and consequently, the cost of poultry feed also escalated putting the poultry farmers under severe hardship. The Government of Tamil Nadu addressed the Government of India to permit import of 10 lakh Metric tonnes of maize

by poultry farmers themselves for which the import duty may be waived as a special case so as to tide over the immediate need.

8.4 Pet Animal Oriented Services

A total of 80,660 castrations and 4,060 spaying surgeries have been performed by the veterinary institutions in the State during 2019-20.

A total of 58,517 dogs were also vaccinated against rabies as a public health initiative. A total of 8,867 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

Balanced nutrition is one of the most important factor that influences the performance, health and welfare of livestock. Feed and fodder are the largest input for livestock production, accounting 65-70% of total cost of production and thus any savings in feed and fodder cost would directly contribute to increase in profitability.

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

It has been the endeavour of the department to create awareness among livestock farmers that fodder crops are also cash crops since increased fodder production and feeding of green fodder reduces feeding cost and improves production. The fodder augmentation programmes have been

continuously supplemented by various initiatives since the year 2011-12.

Approximately 1.07 lakh hectare Meikal lands are available in Tamil Nadu (source: Season and crop report, 2015-16). 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 the 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.215 crore has so far been allocated.

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 perennial 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.

Consequently, about 3.96 lakh acres of farmers holdings have been brought under green fodder cultivation across the State, with a resultant production of approximately 252.61 LMT of green fodder. The inputs like fodder seeds/ planting materials are provided at 100% subsidy to the farmers.

Supplementing the cultivation efforts, the department is promoting mechanization in fodder

cultivation by distribution of chaff cutters to farmers with a view to reduce wastage of fodder as well as to improve its digestibility. So far, 14,703 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 bags for ensiling the surplus fodder. A total of 40,000 silage bags of 250 kg capacity 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, which is 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 in times of water scarcity, 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.

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 established in 385 veterinary institutions covering all the blocks in the State. This is done to promote the awareness regarding alternate fodder crops and alternate cultivation methods among farmers.

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.

A total of 1000 kgs of foundation class cowpea seeds was procured and distributed to farmers at a total cost of Rs.1 lakh in an area of of 125 acres for multiplication. A total of 16 MT of certified seeds were produced and bought back by the department at Rs.92.50 per kg. These seeds were processed at the department seed processing unit and distributed as certified seed under State Fodder Development Scheme during 2019-20.

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) Abishegapatti and Pudukottai (100 acres each).

A total of 1.95 lakh tree saplings of Kalyanamurungai, Neem, Subabul, Glyricidia, etc., is being planted thus serving the cause of fodder as well as an environment friendly initiative.

Table 16: Details of Fodder Production & Distribution in Departmental farms (2019-20)

S. No	Name of the Farm	Area of Farm Extent (in Acres)	Area under Fodder cultivation (in Acres)	Fodder Production (MT)	Fodder Slips distributed to farmers (nos)	Fodder seed distributed to farmers (MT)
1	DLF, Abhishegapatti	1283.64	60	814.705	0	0
2	DLF, Chettinad	1560.32	463	3350.560	788200	0
3	Sheep Farm, Chinnasalem	1866.28	15	926.64	0	0
4	ECBF, Eachenkottai	513.86	122	2544.00	365150	135
5	DLF, Hosur	1561.41	122	2880.476	.0	0
6	LF, Korukkai	490.68	48	1458.00	0	0
7	DLF, Udhagamandalam	129.38	31	933.798	0	0
8	DLF, Naduvur	700.00	58.75	1612.85	0	0

S. No	Name of the Farm	Area of Farm Extent (in Acres)	Area under Fodder cultivation (in Acres)	Fodder Production (MT)	Fodder Slips distributed to farmers (nos)	Fodder seed distributed to farmers (MT)
9	DLF, Pudukottai	694.08	41	864.00	0	0
10	Sheep farm, Sathur	151.00	39	212.185	32250	0
11	Sheep Farm, Mukunda-rayapuram	479.65	14.4	164	0	0
12	Padappai	17.00	12	12.86	10000	375
	Total	**9447.30**	**1026.15**	**15774.07**	**1195600**	**510**

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 fully address the gap between availability and demand of fodder in the State. The Department is in the process of evolving a fodder policy to give directions and guidelines to the fodder development activities to be undertaken in the State.

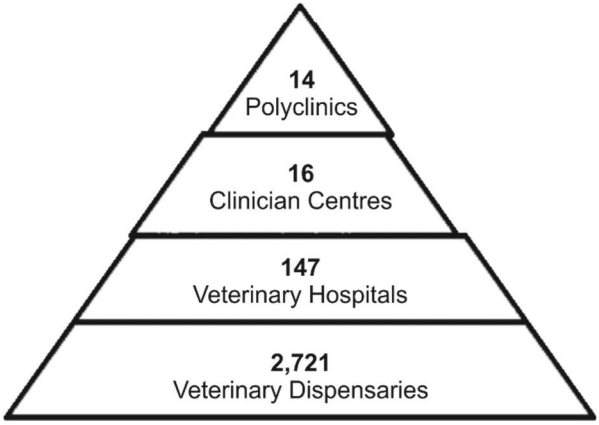
9. VETERINARY INFRASTRUCTURE

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 selective scientific breeding of livestock and they functions as live gene banks.

9.1 Establishment and Upgradation of Veterinary Institutions

Veterinary institutions are required to reach the various schemes to the farmers, implemented by the Government.



Most of the Veterinary Dispensaries, Rural Veterinary Dispensaries and Sub-Centres are established at village level to improve the economic status of farmers who live in villages.

Polyclinics and Clinician Centres are functioning at District Head Quarters and Corporations and Veterinary Hospitals are

functioning at Municipalities, Town Panchayats and Panchayat Unions and other important towns.

Through these institutions only, various activities like treatment, artificial insemination, castration, deworming and infertility treatment are being carried out.

Animal Husbandry Department under takes vaccinations against various diseases which occur due to seasonal and weather changes there by protect the livestock from diseases and reduce the economic loss.

More over, 56 Mobile Veterinary Units and 51 Visiting Subcentres are also functioning

9.2 Establishment of New Sub-Centres

As per Government norms, to establish a new Subcentre, the Cattle Units should be more than 3,000, the distance between the suggested place and nearby Veterinary Institutions should be 3 kms.

Every year based on Government policy, New Veterinary Sub centres are established. Totally 400 Sub-centres were created at a cost of Rs.12.45 crore in the past 9 years.

9.2.1 Norms for upgrading the existing Sub-Centres into Veterinary Dispensaries

- As per the National Commission on Agriculture (NCA), norms for creation of veterinary institution for every 5,000 Adult Cattle Units will be considered.
- One adult cattle unit includes one cow / bull / bullock /buffalo/ horse / donkey or 10 goats/ 10 sheep / 5 pigs or 100 poultry.
- The livestock population in a block will be converted into Adult Cattle Units and matched with the Veterinary Institutions already available in the block. Based on these criteria, Sub-centres will be upgraded.

9.2.2 The following are the additional criteria

- The Village Panchayat / Town Panchayat must provide 20 cents of land for construction of permanent building.
- The Village Panchayat / Town Panchayat must provide a rent free building with electrification for the temporary functioning of the Veterinary Dispensary for a minimum period of 3 years.
- The number of artificial inseminations done in the centre will be considered, as it will give an indication regarding the availability of breedable bovine population in the area.

So far,1,080 Veterinary Dispensaries were established in the past 9 years.

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 with 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 laboratory 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 constructed at Palladam in Tiruppur District to provide disease diagnostic as well as feed testing facilities to the poultry farmers in nearby districts.

Table 17: 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 9 year period from 2011-12 to 2019-20 repair and renovation works were carried out in 1,460 veterinary institutional buildings at an outlay of Rs.87.20 crore.

The improved infrastructure has resulted in increased caseloads at the Veterinary institutions from 222.45 lakh during 2017-18 to 266.56 lakh during 2019-20 and number of deworming performed increased from 272.42 lakh to 258.73 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 is being 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 farmer's income.

Landless and marginal farmers who hold a majority of the livestock under traditional management systems are being organized to follow best practices in livestock rearing. The farmers are imparted knowledge and skills on the best practices in feeding, breeding and management which will make livestock rearing a profitable avocation.

This objective is being 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 ensures 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 are being adopted by the farmers as 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.

10.1 Provision of Drinking water to Livestock / Cattle Troughs

Consequent to the declaration of Hydrological drought in 24 Districts of the State, the department 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 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. Further 1,658 water troughs will be constructed in the remaining institutions. 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 the main objective of improving the production and reproductive efficiency of cattle reared by farmers in dry land, animal husbandry component is being implemented under Mission on Sustainable Dry land Agriculture. The main activities are health management by distribution of mineral mixture, reproductive management to improve the conception rate and mastitis management by prevention and treatment.

The project was implemented in 25 districts during 2017-18 at a cost of Rs.19.95 crore as phase I, in 24 districts during 2018-19 at a cost of Rs.33.19 crore as phase II. The project is being implemented in 25 districts during 2019-20 at a total outlay of Rs.35.80 crore. Totally, 12 lakh cattle have been benefitted at a total cost of Rs. 88.94 crore.

10.2.1 Optimising nutrient profile of cattle

High genetic merit cows in dryland areas identified as nutritionally deficient are being provided with area specific mineral mixture at the rate of 14 kg per animal for one year to improve their general health status of the animal.

Phase	Animals benefitted (in lakh)
Phase I	2.00
Phase II	3.80
Phase III (Provisional)	3.20
Total	9.00

10.2.2 Optimising reproductive health

Cattle and buffaloes reared in dryland areas that are identified as problem breeders are provided with reproductive health package consisting of antibiotics, hormones, infusions and supportive medicine to improve the conception rate.

Phase	Animals benefitted (in lakh)
Phase I	0.60
Phase II	1.20
Phase III (Provisional)	1.20
Total	3.00

10.2.3 Optimising udder health of cattle

Cattle and buffaloes reared in dryland areas with poor milk production are tested for sub-clinical mastitis and provided necessary treatment. In addition, preventive measures are also taken in animals prone for mastitis.

Phase	Animals benefitted (in lakh)
Phase I	0.60
Phase II	1.20
Phase III (Provisional)	1.20
Total	3.00

10.3 Integrated Farming System

A pilot project for creating a total of 2,500 Integrated Farming units have been established in farmers' fields in five districts viz, Erode, Madurai, Thanjavur, Tirunelveli and Villupuram was implemented during 2018-19. Based on the success of the scheme the integrated farming system was extended to cover 28 districts during 2019-20.

Animal Husbandry Department provided technical assistance for purchase, insurance and health care of the animals in collaboration with department of Agriculture during 2018-19.

During the year 2019-20 Integrated Farming System (IFS) was implemented at a total subsidy cost of Rs.44.50 crore by converging the activities of Department of Agriculture, Horticulture, Plantation crops, Animal Husbandry and

Veterinary Services and the Department of Environment and Forest.

5,600 IFS units are established viz, 3,300 rainfed models and 1,000 wetland / garden land models in 28 districts except Kancheepuram, Kanyakumari, Ariyalur and Chennai.

Cows, goats and desi Birds, ducks, turkey, quails and rabbits were given to selected farmers at subsidised costs are as detaied below

10.3.1 Milch cows

Cow-subsidy for each cow is Rs.15,000 or 50% of the cost of milch cow. Age of the cow should not be more than 4 years.

10.3.2 Goats

Goat-subsidy for 9+1 goats / sheep - Rs.15,000 or 50% of the cost of goat. Age of the goat should be about 6 to 8 months.

10.3.3 Desi birds

Desi birds - subsidy for 20 birds was 50% of the total cost restricted to Rs.6,000. Mode of selection of beneficiaries and purchase of animals is as per the free milch cow / sheep and goat scheme in co-ordination with Agriculture Department.

10.4 Livestock Protection Scheme

Under Kalnadai Padhukappu Thittam (KPT), special veterinary health camps are conducted as a part of the extension endeavour of the department in which the veterinary services is taken to a remote inaccessible village and all the necessary services like treatment of ailing animals, deworming, vaccination, castration, etc., 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 2018-19.

During 2019-20, these special camps are being conducted at a total outlay of Rs.2.21 crore. A total of 5,500 camps have been conducted benefitting 48.97 lakh livestock and poultry were benefitted.

10.5 Establishment of Advanced Institute for Integrated Research on Livestock and Animal Sciences (AIIRLIVAS)

The Hon'ble Chief Minister announced on the floor of the Tamil Nadu Legislative Assembly on 13.02.2019 that an integrated Livestock Park will be established at Thalaivasal Koot Road in Salem district as per International standards. Consequent to the announcement, an Advanced Institute for Integrated Research on Livestock and Animal Sciences (AIIRLIVAS) is being established in approximately 1102.25 acres of land available with the Sheep Farm, Department of Animal

Husbandry and Veterinary Services at Thalaivasal, Salem District adjoining the National Highway 79. This Institute is being established at a cost of Rs.564.44 crores.

A Veterinary College will also be established adjacent to the AIIRLIVAS campus, at a financial outlay of Rs.196.36 Crores.

10.5.1 Objectives of Advanced Institute for Integrated Research on Livestock and Animal Sciences

1. To establish livestock and poultry farms on proven scientific technologies to be adopted by the farmers. While off-springs with superior genetic merit shall be given to farmers to improve their stock.
2. To carry out location specific and advanced research in the field of veterinary and animal sciences, dairy technology, poultry technology and food technology.

3. To utilise the advanced facilities in the AIIRLIVAS to impart Post Graduate courses and Doctoral Programmes in food technology, dairy technology, poultry production technology, veterinary and animal sciences courses.

4. To create window of opportunities to students and researchers to learn about the actual field demands, undertake research and find suitable remedial measures.

5. To upgrade skills among farmers and field veterinarians to organize need based training programmes in the field of livestock and poultry so as to meet the skilled manpower requirement of livestock and allied sectors.

6. To create a platform to nurture entrepreneurs / startups, technology holders, innovators and facilitate necessary forward and backward linkages for livestock enterprises.

Various interrelated activities will be clustered into ten major complexes as follows:

1. **Livestock Farm Complex** comprising indigenous cattle unit, sheep and goat unit, piggery unit, native dogs unit, animal quarantine and isolation facilities, farm veterinary hospital, clinical lab and poultry units.

2. **Dairy Processing and Product Manufacturing Complex** comprising cross bred dairy cattle unit, dairy processing and product manufacturing facility, cattle feed & mineral mixture manufacturing units.

3. **Fisheries Demonstration Complex** comprising intensive fish seed rearing with aeration facility, modern fish kiosk, aquaponics unit and ornamental fisheries unit.

4. **Post graduate Education Complex** comprising administrative block, academic block, laboratories, faculty rooms, hostels and staff quarters, instruments and equipment.

5. **Extension and Skill Development Complex** comprising skill development and training centre, instrumentation and fabrication centre, model livestock units, integrated farming systems and hostels for students and farmers.

6. **Research Complex** comprising livestock breeding and technology unit and research units.

7. **Business Incubation and Seamless Integration Complex** comprising business incubation centre and centre for seamless integration.

8. **Meat Production and Processing Complex** comprising separate slaughter and processing facilities for sheep and goat, poultry and pigs.

9. **Forage Research Zone** with demarcated areas for irrigated fodder, dry fodder, silage, silvipasture and fodder seed production.

10. **Public Interaction Zone** comprising public interaction zone including children's park, amphi theatre, interpretation centre with AR/VR facilities, car park, marketing facilities for livestock products, farm inputs, fodder inputs and farm equipment, food court and rest rooms, rest kiosk for public, bank branch and ATM.

10.5.2 Benefits

The outcome of the project for various stake holders is as below:

10.5.2.1 Training of Farmers, availability of genetically superior germplasm, providing market information

The farmers will be benefited by the availability of good genetic merit young-ones of livestock at affordable rates. Horizontal up-gradation of the genetic composition of the livestock will ensure increased per animal productivity.

Access to demonstrative models of innovative technologies will improve the profitability. Farmer producers will realize better prices for their produces through the facilities and will be provided facilitation for processing and products preparation.

The risk of dwindling population of native livestock breeds will be addressed through conservation efforts. Farmers will also be trained on the best practices in livestock rearing.

10.5.2.2 Training of Entrepreneurs, skill development and providing market Intelligence

Incubation facilities will enable translation of innovative ideas of budding entrepreneurs into commercially viable ventures in the livestock sector. Exposure to the innovative techniques of preservation, processing and value addition of the livestock products will open up newer vistas of business opportunities in the livestock value chain.

Demonstration of viable models of multi tropic integrated farming systems will attract potential entrepreneurs to foray into livestock sector.

Market intelligence will be available for entrepreneurs regarding the prices of various commodities in the markets within / outside the State. Export facilitation shall also be provided to entrepreneurs.

10.5.2.3 Providing world class facilities for learning to Students and Researchers

Research and Development in cutting edge technology areas will open up opportunities for students and researchers to work in reputed national and international institutes and organizations.

Skill up-gradation in advanced technology areas will help student community to acquire advanced skills leading to better employment and entrepreneurial opportunities.

Further, the students will get opportunities for collaborative research with reputed national and international institutes and organizations.

10.5.2.4 Consumers

The consumers will have access to hygienic and prime quality livestock products at reasonable rates. The marketing facilities will enable supply of wide variety of fresh and processed livestock

products including products from indigenous breeds.

This world class facility which is expected to give a fillip to the Animal Husbandry activities including production of livestock products, processing and marketing in Tamil Nadu was launched by the Hon'ble Chief Minister of Tamil Nadu on 09.02.2020.

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 2019-20, 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 Theni, Thoothukudi, Vellore, Virudhunagar, Coimbatore, Madurai, Tirunelveli, Salem, Karur, Kancheepuram and Tiruchirapalli 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, Kodaivizha in Nagapattinam and Mangani Fair in Krishnagiri Districts.

Apart from the fairs, the department participated in the 46th Trade Fair and Exhibition held during December 2019 to March 2020 at Island Grounds, Chennai and also in Republic Day Parade Pageantry at Chennai.

The Department organised and participated in the Farmers Conclave at Thalaivasal, Salem as a part of the inauguration function of Advanced

Institute for Integrated Research on Livestock and Animal Sciences and Veterinary College on 9.02.20 to 11.02.20. More than 4 lakh farmers, entrepreneurs and students attended the exhibition in which the Departments of Fisheries, Tamil Nadu Cooperative Milk Producers Federation, Agriculture, Agriculture Engineering, Agriculture Marketing, Horticulture, Public Works had put up 214 stalls explaining the various activities undertaken by the respective departments. Live demonstration, method demonstrations were also undertaken by the departments as well as private companies.

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

Animal Husbandry Department is one of the line department 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 34 districts at a total out lay of Rs.38 crore over a period of 6 years.

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 as phase-I and 16 sub basins covering 22 districts for Rs.11.81 crore for 5 years as phase II.

During 2019-20, the following activities are under implementation in 18 sub basins of Phase- I and 16 sub basins of phase II at a total cost of Rs.9.36 crore.

- 40 new Dairy Interest Groups (DIG) will be formed.
- 1.71 lakh artificial inseminations are planned to be performed at the farmer's doorsteps.
- Calf Management Demos by performing periodical deworming and providing

mineralized salt licks to 6,300 high merit female calves.

- Mastitis Management Demos by providing mastitis prevention kit to 7,560 milch animals and treatment kit to 2,268 milch animals.
- Infertility management Demos by conducting 1,008 fertility camps and programmed breeding in 10,080 animals.
- 2,223 acres of farmers land will be brought under fodder cultivation by supply of fodder cholam, fodder maize, Agathi and cow pea seeds at free of cost.
- 44 follow up meeting will be conducted for the 44 Dairy Interest Groups formed in the last year.
- Diagnostic services of 4 ADIU will be strengthened by supplying equipment like laminar air flow unit, autoclave and incubator.

- Documentation of project activities will be strengthened by providing computers and printers to 60 Offices (RJD, AD).
- Technical/diagnostic training will be provided to 116 veterinarians to improve their diagnostic skills.

10.8 Animal Mobile Medical Ambulance (AMMA)

Animal Mobile Medical Ambulance was initially operated by TANUVAS in 5 districts namely Kancheepuram, Madurai, Namakkal, Tiruchirapalli and Thanjavur since 2015-16 till 2018-19. The services have been extended to the remaining districts by the Department of Animal Husbandry and Veterinary Services.

Each district has been 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 veterinary care at farmers' doorstep.

Animals requiring institutional care will be shifted to Veterinary Care Centre. The scheme was launched by Hon'ble Chief Minister on 5.11.2019. So for 19,985 animals have been provided treatment by these ambulances.

10.9 Human Resource Development

The Department addressed the long standing issue of vacancies in the post of Veterinary Assistant Surgeons.

The appointment of Veterinary Assistant Surgeons through Tamil Nadu Public Service Commission is under process. In order to tide over this situation, the department appointed 818 Veterinarians on contract agreement basis with a maximum tenure of 11 months.

10.10 Kisan Credit Card facility to Animal Husbandry And Dairy Farmers

Kisan Credit Card (KCC) Scheme was launched in 1998 by Government of India with the aim of providing short-term formal credit to farmers. Farmers can avail loans to meet their agricultural needs under this scheme at attractive rate of interest. Regional Rural Banks, Co-operative Banks and Public Sector Commercial Banks have implemented the Kisan Credit Card Scheme in India for short term loans to farmers.

The Kisan Credit Card facility has been extended to cover livestock farmers also. A State Level Technical Committee meeting (SLTC) was conducted to fix the scale of finance for Working Capital requirements for the various avocations in Livestock rearing. The SLTC approved the recommendations with the following suggestions.

- For the existing KCC holder, the benefit of interest subvention and prompt repayment incentive will be admissible upto the credit

limit of Rs.3.00 lakh including animal husbandry and fisheries activities whereas the new KCC holder will have credit limit of Rs.2.00 lakh to meet out their working capital requirements.

- The interest subvention will be available for animal husbandry and fisheries farmers, as per the existing guidelines i.e., 2% per annum at the time of disbursal of loan and another 3% per annum, in case of prompt repayment as "prompt repayment incentive".

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 recent census namely 20th Quinquennial enumeration of the Livestock Census was conducted during the year 2019. The livestock census is 100% funded by the Central Government.

The department conducted the 20th livestock population in the State as per the guidelines provided by the Government of India using tablet computers.

The services of 3,887 enumerators, 785 supervisors and 130 scrutiny officers for the enumeration process was utilised for the purpose. 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 covering 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 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.

The Government of India released the All India data with Tamil Nadu as follows:

Table 18: Species wise share of 20th Livestock and Poultry Population Tamil Nadu with All India

S. No	Species	20th Livestock census of All India	20th Livestock census of Tamil Nadu	%
1	Exotic/Crossbred Cattle	51356405	7724719	15.04
	Indigenous/Non descript Cattle	142106466	1793941	1.26
	Total Cattle	**193462871**	**9518660**	**4.92**
2	Buffaloes	109851678	518795	0.47
3	Mithun	386305	0	0.00
4	Yak	57570	0	0.00
	Total Bovine	**303758424**	**10037455**	**3.30**
5	Exotic/Crossbred Sheep	4088133	277650	6.79

S. No	Species	20th Livestock census of All India	20th Livestock census of Tamil Nadu	%
	Indigenous sheep	70172482	4222841	6.02
	Total Sheep	**74260615**	**4500491**	**6.06**
6	Goats	148884786	9888746	6.64
7	Horses and ponies	342226	5417	1.58
8	Donkeys	123587	1428	1.16
9	Mules	84261	305	0.36
10	Camels	251956	7	0.00
11	Exotic/Crossbred pig	1896944	17106	0.90
	Indigenous Pig	7158544	49666	0.69
	Total Pig	**9055488**	**66772**	**0.74**
12	**Total livestock**	**536761343**	**24500621**	**4.56**
13	Dogs	9434039	1296655	**13.74**
14	Rabbits	549941	26513	**4.82**
15	Total Poultry Birds in Backyard poultry	317073357	21264570	6.71
	Farm Poultry	534736574	99516530	18.61
	Total Poultry	**851809931**	**120781100**	**14.18**

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 and Fisheries, 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 the 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 19: Estimated production of milk, egg and meat

Item	Unit	2018-19	2019-20* (summer and rainy season only)
Estimated Milk Production	lakh MT	83.62	58.05
Estimated Egg Production	lakh Nos.	1,88,422	132252
Estimated Meat Production	MT	6,33,802	436285

**provisional*

12. JALLIKATTU - The traditional and cultural identity of Tamil Nadu

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

Jallikattu events are to be 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, 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. Every year Jallikattu events are notified in the State Gazette from January till May as per the PCA (Tamil Nadu Amendment) Act 2017. Jallikattu events conducted in places which are not notified in the State Gazette are considered illegal events.

During 2019, 304 Jallikattu events were notified in the State Gazette and 228 events were conducted. First Information Report (FIR) were filed and necessary action were taken by the concerned District Administration against the defaulters during Jallikattu events as per the Prevention of Cruelty to Animals Act (Conduct of Jallikattu) Rules 2017.

13. ANIMAL WELFARE MEASURES

13.1 Activities of Animal Welfare Board of Tamil Nadu

Scientific discoveries led to the revelation that animals are sentient beings i.e., they are beings with the capacity to feel and hence their basic needs must be respected and met. Our Constitution of India in Article 51(A)(g) directs to ensure that the animals are treated with compassion and in a humane manner- "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". In reverence to the Constitution, the Government of Tamil Nadu constituted the 'Animal Welfare Board of Tamil Nadu" Vide G.O. (MS) No.208, dated 24.10.2018 and registered under the 'Tamil Nadu Societies

Registration Act, 1975' to monitor and address the animal welfare issues in the State.

The Animal Welfare Board of India, a statutory body of the Ministry of Fisheries, Animal Husbandry & Dairying is to fulfil the Principles of the Prevention of the Cruelty to Animals Act 1960 through the State Animal Welfare Boards in the respective States, i.e., State Animal Welfare Boards will be working in tandem with the AWBI.

The Tamil Nadu Animal Welfare Board is headed by the Hon'ble Chief Minister as the Chairman of the Board while the Hon'ble Minister of Animal Husbandry is the Vice-Chairman. The other members include the Chief Secretary, Principle Secretaries of concerned departments, Directors, Registrars and honorary members of the SPCA. The Board has a three level committee-General, Executive and Standing committee.

All the issues related to animal welfare, dealt under the Prevention of Cruelty to Animals Act, 1960 like Transportation of Livestock, Animal Market Regulation Rules, Dog Breeding Rules, Pet Shop Registration Rules, Animal Birth Control Rules, Establishment and regulation of Societies for Prevention of Cruelty to Animals (SPCA) are administered and monitored by the Board.

13.2 Society for Prevention of Cruelty to Animals

The Establishment and regulation of SPCA in all districts is notified by the Ministry of Social Justice and Empowerment No. S.O.271(E) dated 26.03.2001 in the Gazette of India, under sec.38, sub-section 1 of PCA Act 1960 (59 of 1960)

The function of the district SPCA is to aid the Government in enforcing the provisions of the PCA ACT 1960 and to make byelaws and

guidelines for efficient discharge of duties, setting up and monitoring of infirmaries, animal shelters.

All Pinjrapoles, cattle pounds owned & run by local authority shall be managed by such local authority jointly with Society or Animal welfare organisations.

The role of the TNAWB is to give directions to any SPCA to ensure smooth and efficient functioning. The State Government may in consultation with Board confer additional powers to any society for exercising the powers and discharging the functions assigned to it.

13.3 Animal birth control programme

This programme is being implemented to prevent the indiscriminate breeding of stray dogs and reduce incidences of Rabies disease. The Government of India have formulated the Animal Birth Control (Dogs) 2001 Rules, to control the

stray dog population by the Municipalities and local body authorities.

Stray dogs are caught in a humane manner, sterilized, vaccinated against rabies and relocated in the same place from where they were caught, under this programme.

The scheme is under implementation in all Corporations and Municipalities involving Municipal Administration Department, and Animal Welfare Board of India.

13.4 Pet Shop Registration

The Pet shops that are functioning across the State are trading without any regulations. Henceforth all pet shops in the State will be regulated by the State Animal Welfare Board with the involvement of the District administration as per Pet shop registration rules 2018, under notification G.S.R.844(E) from Ministry of

Environment, Forest and Climate Change, dt 06.09.2018.

The Rules mandate that the pet shop must register with the State Animal Welfare Board, by paying a non refundable sum of Rs.5,000 along with an application and affidavit after fulfilling all the conditions laid down in the rules.

The pet shop will then be inspected by the authorised Government Veterinarian and based upon his report, the registration will continue or be cancelled after giving notice to the owner.

License shall be issued only after registration by the Board.

Therefore, Tamil Nadu Animal Welfare Board (TNAWB) will issue notice, instructing all pet shop owners to register with TNAWB.

14. SUSTAINABLE DEVELOPMENT GOALS & PLAN OF ACTION

The Sustainable Development Goals (SDGs) are a collection of 17 Global Goals set by the United Nations General Assembly in 2015 for the year 2030. The main aim is to provide equitable living opportunity for all lives on the earth with the agenda of "leaving no one behind". The Government of Tamil Nadu has actively involved in taking necessary steps for achieving 17 Sustainable Development Goals in 2030 in line with Government of India.

The department places its commitment towards a holistic approach in achieving sustainable development Goal 1 – No poverty, Goal 2 – Zero hunger, Goal 3 – Good health and well being, Goal 4 – Gender equality, Goal 12 – Responsible consumption and production by implementation of various programmes for bringing more farmers under Animal Husbandry.

To achieve the target 1.1 – eradicate extreme poverty for all people, target 1.2 –

reduce at least half of the portion of poverty, target 1.3 – substantial coverage of the poor and vulnerable; the department is implementing schemes like free distribution of milch cows, goat/sheep and aseel birds, expanding risk coverage of livestock and promoting mini dairies; thereby improving per animal productivity and augmenting milk, egg and meat production.

Target 2.3 – Secure and equal access to land and other productive resources and inputs and non-farm employments is being achieved through creation of Farmer Producers' Organization (FPO) for poultry, sheep and goat farmers, augmenting conception and coverage in cattle and reducing disease incidence for guaranteed income.

The target 2.5 – maintain the genetic diversity of seeds, cultivated plants and domesticated animals and their wild species is addressed by conservation of indigenous breeds of livestock to arrest the depleting trend of native breeds and to improve and conserve valuable germplasm. The department is maintaining live

gene banks for various indigenous cattle, sheep and goat breeds and by genetically upgrading Mecheri sheep at the field level. Tamil Nadu has registered 4 cattle breeds, 2 buffalo breeds, 3 goat breeds and 10 sheep breeds with National Bureau of Animal Genetic Resources. The department has action plans for achieving this target viz., identification of new group of livestock with definable and identifiable characters, establish more live gene banks in the State, preserving the purity of registered breeds in open herds.

The department addresses the Goal 4 of SDG 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.

Goal 5 of SDG - gender equality is addressed by specifically targeting the women under various beneficiary oriented programmes since livestock rearing is a women centric avocation and thus the

cause of women empowerment which is SDG – 5 is achieved.

To achieve SDG goal -12 Responsible consumption and production, the department is implementing various schemes to improve per animal productivity thereby augmenting the milk, egg and meat production.

The department has formed SDG units vide G.O. (Ms) No.184, Animal Husbandry, Dairying and Fisheries (A&C2) Department, dated: 26.12.2019. This unit shall work in close coordination with SDG cell under Planning and Development Department, the Working Groups, State, District and Field Offices and other institutions working on SDG.

Achieving the Sustainable Development Goals, the department has given special emphasis for the development of this primary sector based activity for the upliftment of economic status of the rural poor.

15. CLIMATE CHANGE & RESILIENT SYSTEMS

Climate change refers to significant long-term changes in the global climate. Sustainable agriculture is one of the seven sectors identified under the Tamil Nadu State Action Plan for Climate Change (TNSAPCC) 2.0 for adaptation.

The major contributing factors under Animal Husbandry include livestock and poultry population and production of milk and eggs.

15.1 The adaptation strategies include

1. Ensuring year-round feed and fodder availability which is taken care by distribution of various grass / cereal / leguminous fodder, tree saplings, chaff cutters and Azolla units under State Fodder Development Scheme (SFDS), National Livestock Mission (NLM) and Tamil Nadu Irrigated Agriculture Modernisation Project (TN-IAMP).
2. Intensifying disease surveillance and develop forecasting of disease outbreaks for short and long terms taken care by Rinderpest and Avian

Influenza disease surveillance and preventive vaccination against diseases like Foot and Mouth, Black quarter, Haemorrahagic septicemia, Peste-des-petits-ruminants and Brucellosis.

3. Promote breeding with indigenous varieties to improve resilience to climate change is taken care by adopting artificial insemination with breeds relevant to the agro-climatic zone and programmed breeding.

4. Promote Dairy Development by training women in villages on animal care, animal disease reporting and nutrition for optimising milk production at household level of small and marginal farmers and enabling them to participate in milk co-operatives is taken care by providing necessary training to farmers under schemes like free distribution of milch cows and Tamil Nadu Irrigated Agriculture Modernisation Project.

State wise, district wise and division wise Climate Change Cells have been established in the department to coordinate the activities related to Climate Change.

16. KEY RESULT AREAS IN THE DEPARTMENT

The Department undertook an exercise of analysing the production and productivity of livestock during the past decade. Based on the analysis, detailed plans for increasing productivity were identified and the following Key Results Areas were identified**.**

16.1 Improving the per animal Productivity

The Department shall strive to increase the production of milk, egg and meat by 5% annually. Various strategies like improving the genetic potential of cattle, buffalo, sheep and goat population, reducing incidences of infertility and mastitis, improving the immune status, improving the animal housing environment are planned.

16.2 Availability of Fodder

District Level Committee consisting of officials from Animal Husbandry, Tamil Nadu Veterinary and Animal Sciences University, Agriculture, Tamil Nadu Cooperative Milk Producers Union shall be formed. The committee shall analyse the requirement and availability of fodder in the district and chalk out district specific strategies to improve fodder availability and specific non-conventional feed.

16.3 Increasing export of egg, poultry products and meat

The department shall provide an enabling environment to boost export of products of livestock origin by creating more disease free compartments. Conducive avenues shall be created to preserve meat and poultry products by establishing cold storage facilities.

16.4 Increasing facilities for processing and product diversification for better returns to farmers

The department shall facilitate the establishment of livestock processing units for milk, egg and meat products by entrepreneurs, establish business incubation centres and skill development centres within the Government domain.

16.5 Creating sustainable network systems for better marketing of farmers products

The Department shall endeavour to create Farmer Producer Organisations for Poultry, Sheep & Goat farmers so as to confer advantages like reduced input costs, availability of market intelligence, direct sale/ marketing of products and better bargaining power. At the primary level, Farmer Interest Groups (FIG) shall be formed at the village level for poultry / meat animals. At the secondary level, five such FIGs shall be integrated to form Farmer Producer Groups (FPG) from the

same village or from adjacent villages as a cluster. At the apex level, Farmer Producer Company / Organisation (FPC/FPO) shall be formed integrating such FPGs.

16.6 Reducing incidences of livestock diseases

It is necessary to strengthen the disease surveillance and control measures for livestock diseases for which various strategies like 100% vaccination coverage, using field level diagnostic kits, health management measures, deworming before vaccination, proper disposal of bio medical waste generated in the institutions shall be undertaken.

16.7 Improving facilities in grass root level institutions

The Department shall address the requirement of essential infrastructure requirements of various institutions. Facilities for conducting seminars and technical meetings for

farmers and veterinarians shall be created at the institutions. Veterinary institutions shall be provided with proper buildings and infrastructure like borewells, furniture, diagnostic and surgicals.

16.8 Widening the scope and reach of extension and outreach programmes

Wide publicity shall be given to the outreach programmes. IEC materials with appropriate pictures shall be printed as small booklets and pamphlets in vernacular language and distributed to farmers. The idea is to transform veterinary institutions into a knowledge resource centre for all issues relating to animal husbandry.

16.9 Achieving health indicators as per OIE standards

The department shall facilitate production of livestock products to comply with International Standards so as to compete in the world market. Intensive screening and surveillance for livestock

diseases in collaboration with TANUVAS shall be taken up.

16.10 Conserving indigenous livestock

There is a need for conservation and propagation of indigenous livestock breeds in their native tracts. Artificial insemination technique needs to be expanded to small ruminants.

16.11 Augmenting conception and coverage in cattle

The Department shall endeavour to increase the artificial insemination coverage and conception rate by creation of new Artificial Insemination centres in needy areas, optimizing female reproductive health by suitable interventions, employing software applications for tracking reproductive performance, identification and traceability of all breedable bovines.

16.12 Animal welfare as a core area

The Tamil Nadu State Animal Welfare Board shall implement the animal welfare rules like

Regulation of Livestock Market Rules, Dog Breeding and Marketing Rules, Care and Maintenance of Case Property Animals Rules, Pet Shop Rules, Transportation of Animals Rules. The Animal Birth Control and Anti Rabies Vaccination programme shall also be monitored. All the SPCAs shall be activated and ensured that they are fully functional.

16.13 Expanding risk coverage of livestock

The Department shall continue the Livestock Insurance Scheme to all types of livestock and poultry.

17. INTER DEPARTMENTAL COORDINATION/ INTERSTATE COORDINATION

17.1 District Level Forum

District Level Forum comprising of officials from Animal Husbandry Department, Tamil Nadu Co-operative Milk Procurers' Union and Tamil Nadu Veterinary and Animal Sciences University

have been constituted in all Districts. The District Level Forum shall Discuss the needs and necessary steps to be taken in attaining the above key result areas identified for the Animal Husbandry Department.

The forum shall also discuss about other specific issues the district encounters and counter measures that need to be taken. If necessary, other Government departments like Agriculture Department, Economics and Statistics Department, Revenue Department, etc. are requested to attend the above meeting.

17.2 Interstate Coordination

Livestock diseases cause huge economic losses and hence it is imperative to prevent such disease outbreaks. Prevention of livestock diseases can be achieved by proper vaccination. In the absence of regulations in animal movements, simultaneous vaccination of the

endemic border districts of neighbouring States becomes essential.

Sharing of information regarding disease outbreaks on real time basis, exchange of critical information like focus of infection, species of livestock affected, control measures adopted defining of alert and surveillance zones would help in devising appropriate control operations as it is done in the case of outbreaks of Highly Pathogenic Avian Influenza.

Quarterly meetings are conducted with the nodal officials of the Animal Husbandry Department of Southern States for sharing of information on disease occurrence and control measures.

A separate meeting is convened once in a year between the disease investigation officials of the border districts of the States of Andhra Pradesh, Kerala and Puduchery to discuss the issues related to control of Anthrax disease. It is also planned to have regular interactions at the

level of the Principal Secretaries to discuss Inter State issues that are of mutual interest.

17.3 Movement of Livestock across Borders:

The movement of livestock across State borders for commercial considerations by individuals / agencies happens throughout the year. With unbridled movement of livestock across the State borders for grazing, trade in livestock and products, the threat of transmission of diseases is very real.

Violations of existing legal provisions regarding transport of animals are being suitably dealt. Interstate border check-posts are established in times of outbreaks of notifiable livestock diseases. Adequate precautions are taken for disinfection of vehicles, livestock products, raw materials, at the check-posts so as to safeguard our livestock from diseases.

18. ANIMAL MANAGEMENT DURING DISASTER

Natural calamities like floods, cyclones in coastal districts and drought are the commonly encountered disasters in the State. Each of these calamities require common preparedness and certain specific requirements. Calamities result in deprivation of life, resources, life support resources, mobility, owners' health and hygiene of the animals.

Apart from death of livestock and the injuries they sustain, any disaster leads to reduced production/ productivity due to stress, abortions, spread of endemic livestock diseases, hospitalization and care of survived animals, disposal of carcass.

The losses experienced by farmers are in the form of livestock, lack of fodder resources, exposure to stress related disease conditions etc.,

The 12 coastal districts of Tamil Nadu are the most vulnerable in times of disasters like floods, cyclone etc. As and when the state experienced

various calamities of flood, drought, tsunami, etc, the Department provides relief measures by distribution of fodder by establishing fodder depots and disease control measures by vaccination and deworming.

A systematic and well thought out mechanism is in place that minimises the after effects of disasters and ensures that the affected farmers well being is protected.

Preparedness for natural calamities would include exposure to the veterinarians on mechanisms of various natural calamities, local communities awareness improvement to manage the disaster as efficiently as possible.

The department ensures that adequate stock of vaccines and facilities for effective communication, mobilization of vaccines, fodder and personnel is undertaken.

Further, the department organises temporary animal shelters with potable water to the livestock.

19. TAMIL NADU LIVESTOCK DEVELOPMENT AGENCY (TNLDA) ACTIVITIES

Bovine breeding is an essential activity in livestock management, bovine development, improving production and productivity. To pursue bovine breeding activities with diligence and to implement the programme of bovine breeding, Tamil Nadu Livestock Development Agency (TNLDA) was established during 2002-03 and is implementing cattle and buffalo breeding programmes from 9.1.2003 onwards.

19.1 Objectives of the Agency

The primary objective of the agency is to enable the improvement in milk production and productivity by bringing all the breedable age cattle and buffaloes under defined breeding programme.

19.2 Activities

To achieve the objective, programmes for the extension of artificial insemination network, strengthening of Artificial Insemination Centers,

strengthening of the facilities for distribution of frozen semen and liquid nitrogen, improvement of skill of Artificial Insemination workers, skill development programmes, facilitation of the supply of high genetic merit bulls for the frozen semen production stations.

Also assisting in implementing Embryo Transfer Technology to produce genetically superior calves and increasing the rate of genetic improvement, for animal identification, conservation of indigenous breeds, facilitating the molecular screening of bulls, up-gradation of non descript indigenous cattle with High Yielding Indigenous Breed semen and Artificial Insemination programme at the doorstep of the farmers as per breeding policy to increase coverage of animals under artificial insemination and livestock insurance for risk management.

19.2.1 Extension of Artificial Insemination network

A programme to expand the artificial insemination network by training and equipping 175 Rural Youth to function as *Aa-mithrans* (Multi Purpose Artificial Insemination Technician for Rural India –MAITRI) has been taken up at a cost of Rs.140.00 lakh.

Under the programme, 85 rural youth have completed training and 50 youth are under training. The training of the remaining 40 would be completed during June 2020.

19.2.2 Strengthening of Artificial Insemination centres

To deliver quality artificial insemination services, the strengthening of 1,000 Artificial Insemination centres by making available frozen semen containers of 0.5L, 3-4L, and 30-35L capacity and other Artificial Insemination kits have been taken up at a cost of Rs.250.00 lakh.

19.2.3 Strengthening of semen banks and distribution network

The liquid nitrogen and frozen semen storage and distribution network was strengthened by supply of semen doses distribution vehicles to 13 semen banks and installation of three 3,000 lts capacity bulk liquid nitrogen storage silos in three semen banks.

19.2.4 Facilitation of the supply of high genetic merit bulls for the frozen semen production stations

A total of 50 High genetic merit bulls were made available to the three semen production stations of the State (19 Crossbred Holstein Friesian and seven Crossbred Jersey for District Livestock Farm, Udhagamandalam, five Murrah Buffalo and eight Crossbred Jersey for Exotic Cattle Breeding Farm, Thanjavur - and seven Kangayam and four crossbred Jersey Bulls for District Livestock farm, Hosur)

19.2.5 Embryo Transfer Technology (ETT)

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 (Red Sindhi-34, Kangayam-20, Umblachery-10, Pulikulum -10, and Bargur-10) and 85 bull mothers (Red Sindhi-35, Kangayam-20, Umblachery-10, Pulikulum -10, and Bargur-10) over a period of three years.

For embryo transfer work, 5 Kangayam Milk recorded cows, one Bargur milk recorded cow and two Pulikulam milk recorded cows were selected and purchased. A total of 19 donor (11 Red Sindhi, 5 Kangayam, 2 Pulikulam and 1 Bargur) cows have been flushed, 69 embryos (Red Sindhi 61, Kangayam-6, Pulikulum-2) have been collected, 43 embryos (Red sindhi-37, Kangayam-4, and Pulikulum-2) have been transferred and 26 embryos have been stored.

Further, embryo transfer programme for the production of 105 Kangayam and 55 Bargur cattle is being implemented through the Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Sciences University at a total cost of Rs.251 lakh.

19.2.6 Identification and traceability of animals

Under National Mission on Bovine Productivity (NMBP), Pashu Sanjivini Scheme is being implemented with the target of ensuring identification and traceability of 33.29 cattle and buffalos at an outlay of Rs.893.598 lakh.

So far a total of 29.39 lakh bovines have been tagged and health cards distributed and 13.81 lakh data entered in Information Network on Animal Production and Health (INAPH) software.

19.2.7 Establishment of Sex Sorted Bovine Semen Production facility at District Livestock Farm, Udhagamandalam

Farmers prefer more number of heifer calf births and to cater to the farmers' need, the process of establishment of Sex Sorted Bovine Semen production facility at District Livestock Farm, Udhagamandalam for production of eight lakh doses of sex sorted frozen semen doses over a period of three years at a total cost of Rs.4,750 lakh has been initiated and is under way.

19.2.8 Capacity building

500 Rural Youth were given Skill Development Training for a period of five days on various aspects of animal husbandry practices such as breeding, nutrition, awareness on common diseases affecting livestock and the measures to control diseases, bio-security measures, disaster management during natural calamities.

In addition, training in clean milk production, sanitation and hygiene, modern management practices, deworming and vaccination and its importance, livestock and poultry management, calf rearing, carcass disposal, zoonotic diseases, humane handling of animals, ration balancing, importance of feeding fodder, existing fodder cultivation practices and recent developments in fodder development activities (azolla, hydroponics, vermi-compost, etc.) through KVKs/VUTRCs of TANUVAS under State Fodder Development Scheme have been imparted at a total cost of Rs 17.50 lakh.

19.2.9 Conservation of indigenous breeds

A programme for the establishment of Cattle Research Station for Bargur cattle at Andhiyur, Erode District for conservation and development of the indigenous Bargur breed of cattle over a period of 5 years has been taken up through the Tamil Nadu Veterinary and Animal Sciences University at a total cost of Rs.516.50 lakh. A sum

of Rs.328 lakh was released during 2018-19 and a sum of Rs.50 lakh has been released for the year 2019-20 to the TANUVAS for purchase of Bargur heifers, fencing, land reclamation, installing micro irrigation facility and purchase of equipment. A total of 92 Bargur animals are being raised in the centres (69 cows/heifers and 23 bulls/young bulls).

For the supply of frozen semen doses of Kangayam, 7 Kangayam bull calves born under the Field Performance Recording Programme were procured for frozen semen production at District Livestock Farm, Hosur.

19.2.10 Genetic up gradation programme through use of High Yielding bulls semen for quality Artificial Insemination delivery at farmers doorstep

A programme for artificial insemination of bovine with semen from high yielding bulls is being implemented from 15.09.2019 to

15.03.2020 in 300 villages, in each of the districts of Chennai, Cuddalore, Kancheepuram, Nagapattinam, Pudukottai, Ramanathapuram, Sivagangai, Salem, The Nilgiris, Thiruvallur, Thiruvannamalai, Virudhunagar and Villupuram to cover a total of 2,44,990 (20,000 each in 12 districts 4,990 in Chennai) cattle and buffaloes with a total financial outlay of Rs.907.40 lakh under the National Artificial Insemination Programme. Under the programme, 1.69 lakh animals have been covered and the programme is in progress.

19.3. National Livestock Mission

19.3.1 Risk mitigation and risk management

Under the National Livestock Mission, Livestock Insurance is being implemented in all the Districts of Tamil Nadu. The programme for insuring 2.70 lakh cattle units (including cattle, buffalo, sheep, goat and pigs) is implemented in all the districts of Tamil Nadu at a total outlay of Rs.14.31 crore.

19.3.2 Fodder development

Under the National Livestock Mission, the programme for the procurement and supply of 3,000 Nos. of chaff cutters at a total outlay of Rs.4.50 crore is being implemented.

19.4 Mission on Sustainable Dry land Agriculture

Under the Mission on Sustainable Dry land Agriculture, the procurement and supply of teat care product from Translational Research Platform for Veterinary Biologicals (TRPVB), Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) for maintenance of udder health of cows at an outlay of Rs.2.26 crore is implemented.

20. TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) was established in 1989 with the following objectives:

- To impart quality education to undergraduate, post-graduate and doctoral students in different fields of Veterinary and Animal Sciences and Food Sciences
- To carry out research in livestock and poultry production, protection and value addition of products
- To 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

20.1 Units of TANUVAS

Table 20: Constituent Colleges of TANUVAS

Sl. No.	Colleges	Admission Strength
1.	Madras Veterinary College, Chennai	120
2.	Veterinary College and Research Institute, Namakkal	80
3.	Veterinary College and Research Institute, Orathanadu	80
4.	Veterinary College and Research Institute, Tirunelveli	80
5.	Veterinary College and Research Institute, Salem	40
6.	College of Food and Dairy Technology, Koduveli	60
7.	College of Poultry Production and Management, Hosur	40
	Total	**500**

20.1.2 New Veterinary College at Salem

The Hon'ble Chief Minister announced on the floor of the Tamil Nadu Legislative Assembly on 13.02.2019 that an Integrated Livestock Park will be established at Thalaivasal Koot Road in Salem district. Consequent to the announcement, an Advanced Institute for Integrated Research on Livestock and Animal Sciences (AIIRLIVAS) is being established and a new Veterinary College and Research Institute is also being established adjoining the AIIRLIVAS complex under the Tamil Nadu Veterinary and Animal Sciences University.

An area of 73.80 acres has been allocated for establishing this fifth Veterinary College and Research Institute in Tamil Nadu at a financial outlay of Rs. 196.36 crores. At present, the Government has sanctioned a sum of Rs.82.13 crores for construction of an administrative building, eight academic blocks with class rooms, Clinical Teaching Complex, separate hostel blocks

for boys and girls, library building, cafeteria, quarters for Dean and Hostel wardens and guest house.

A total of 15 departments including laboratories and separate Dairy and Meat production and processing facilities, an educational livestock farm complex to explain livestock production technologies and an advanced clinical block with teaching veterinary hospital to impart clinical training to students will be established.

The new Veterinary College will offer undergraduate course (B.V.Sc. & A.H.) and will function from the academic year 2020-21. A total of 40 students will be admitted during 2020-21, 60 students during 2021-22 and 80 students from the year 2022-23 onwards.

Table 21: Peripheral Research Stations, Laboratories and Centres of TANUVAS

S. No.	District	Research Stations / Laboratories / Centres
1.	Chennai	➢ Poultry Research Station, Madhavaram ➢ Livestock Farm Complex, Madhavaram ➢ Central University Laboratory, Madhavaram ➢ Viral Vaccine Research Centre, Madhavaram ➢ Bacterial Vaccine Research Centre, Madhavaram ➢ Zoonoses Research Laboratory, Madhavaram ➢ Centralised Clinical Laboratory, Vepery ➢ Laboratory Animal Medicine, Madhavaram ➢ Centre for Stem Cell Research and Regenerative Medicine, Vepery

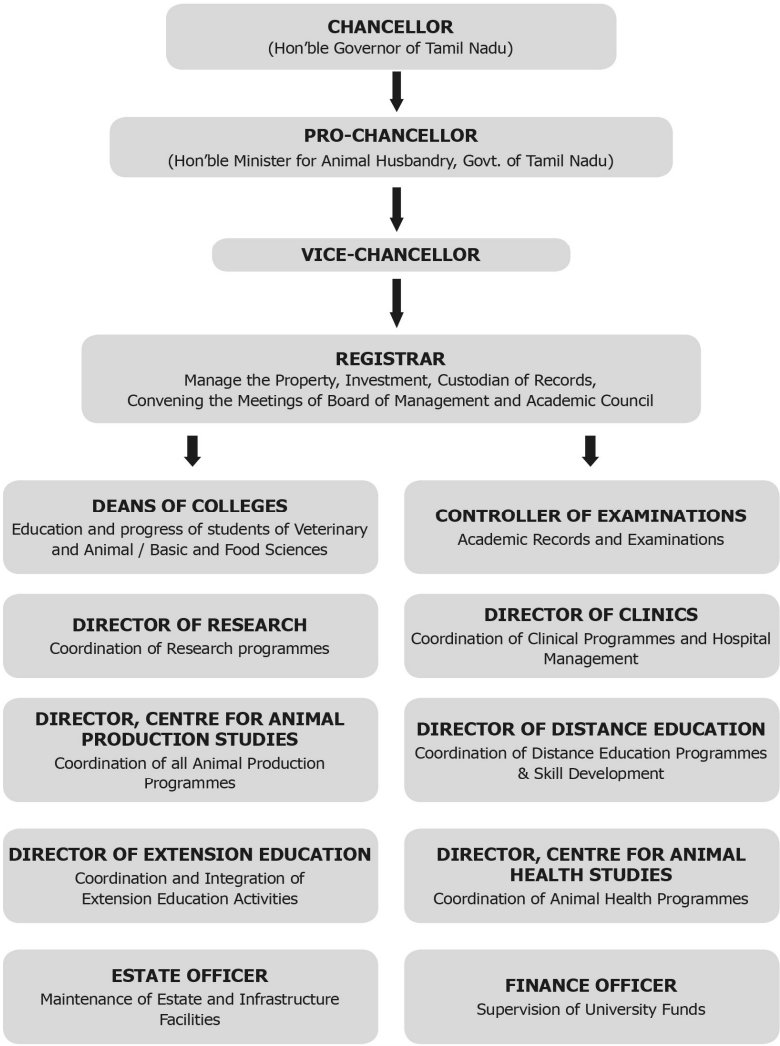
S. No.	District	Research Stations / Laboratories / Centres
		➢ Pharmacovigilance Laboratory for Animal Feed and Food Safety, Madhavaram ➢ Translational Research Platform for Veterinary Biologicals, Madhavaram ➢ Biosafety Level III Laboratory, Madhavaram
2.	Kancheepuram	➢ Post Graduate Research Institute in Animal Sciences. Kattupakkam ➢ Institute of Animal Nutrition, Kattupakkam ➢ Central Feed Technology Unit, Kattupakkam ➢ Krishi Vigyan Kendra, Kattupakkam ➢ Farmers Training Centre,
3.	Dharmapuri	➢ Alambadi Cattle Research Station ➢ Veterinary University Training and Research Centre

S. No.	District	Research Stations / Laboratories / Centres
4.	Villupuram	➢ Veterinary University Training and Research Centre ➢ Krishi Vigyan Kendra
5.	Salem	➢ Mecheri Sheep Research Station, Pottaneri ➢ Veterinary University Training and Research Centre ➢ Avian Disease Laboratory, Thalaivasal
6.	Erode	➢ Bargur Cattle Research Station, Bargur ➢ Kangayam Cattle Research Station ➢ Veterinary University Training and Research Centre
7.	Nilgiris	➢ Sheep Breeding Research Station, Sandynallah

S. No.	District	Research Stations / Laboratories / Centres
8.	Namakkal	➢ Poultry Disease Diagnostic and Surveillance Laboratory ➢ Animal Feed Analytical and Quality Assurance Laboratory ➢ Ethnoveterinary Herbal Research Centre for Poultry ➢ Krishi Vigyan Kendra
9.	Sivagangai	➢ Pulikulam Cattle Research Station, Manamadurai ➢ Krishi Vigyan Kendra, Kundrakudi
10.	Pudukottai	➢ Regional Research and Education Centre
11.	Madurai	➢ Veterinary University Training and Diagnostic Centre
12.	Theni	➢ Farmers Training Centre
13.	Tiruvarur	

14.	Ramanathapuram	➢ Veterinary University Training and Research Centres
15.	Kanyakumari (Nagercoil)	
16.	Chengalpattu	
17.	Vellore	
18.	Thiruvannamalai	
19.	Krishnagiri	
20.	Cuddalore	
21.	Perambalur	
22.	Tiruppur	
23.	Coimbatore	
24.	Karur	
25.	Thanjavur	
26.	Nagapattinam	
27.	Dindigul	
28.	Tiruchirappalli	
29.	Virudhunagar (Rajapalayam)	

20.1.3 Organogram



20.2 Education

Table 22: Degree and diploma courses offered by the University with admission strength

Degree and diplomaCourses	Admission strength
Bachelor degree in Veterinary Science and Animal Husbandry	400
Bachelor degree in Technology (Food Technology)	40
Bachelor degree in Technology (Poultry Technology)	40
Bachelor degree in Technology (Dairy Technology)	20
Master degree in Veterinary Science	120
Master degree in Technology (Food Technology)	10
Master degree in Technology (Dairy Technology)	3

Degree and diplomaCourses	Admission strength
Master degree in Technology (Dairy Chemistry)	3
Master degree in Technology (Poultry Technology)	3
Master in Philosophy (Biotechnology)	8
Master in Science (Bioinformatics)	10
Master in Science (Biostatistics)	3
Master in Science (Biotechnology)	5
Master in Business Administration (Fisheries and Livestock Business Management)	10
Doctorate in Philosophy (Veterinary)	98
Doctorate in Philosophy (Biotechnology)	5

Doctorate in Philosophy (Food Technology)	5
Post Graduate Diploma (Animal Sciences)	17

20.2.1 Convocation

The Twenty-first Convocation of TANUVAS was held at Anna Auditorium, Madras Veterinary College on 10.12.2019. Hon'ble Governor of Tamil Nadu and Chancellor of the University presided and conferred degrees and diplomas to 356 candidates in person and 210 candidates *in absentia* and administered the pledge to the graduands.

20.2.2 Institutional Development Plan of TANUVAS

With the financial assistance from ICAR under National Agricultural Higher Education project, "Institutional Development Plan of TANUVAS" with a budget outlay of Rs.2495.13 lakhs is in operation at TANUVAS from 2018. Under this scheme, in 2019, 16 students of final year B.V.Sc & AH were sent for overseas clinical internship training for a period of two months to Washington State University, USA and Oklahoma State University, USA; two faculty members visited Washington State University, USA for overseas training; two faculty members visited Royal Veterinary College, London to obtain knowledge on robotics and learning assessment centre in order to establish the same in TANUVAS.

Six adjunct faculties were identified from Washington State University, Royal Veterinary College and North Dakota State University to

serve as resource persons for student and faculty development trainings and workshops at TANUVAS. Trainings on "Veterinary Education" and "Market intelligence" were given for faculty members and Training programmes on "Communication and soft skills" and industrial training programmes at various private concerns were also organized for UG students.

20.3 Research

The University has a strong research base. There are 10 research stations and 15 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 33 research projects to the tune of Rs.2178.07 lakh have been sanctioned by various national and international funding agencies during

2019-20 for carrying out research activities at TANUVAS.

20.3.1 Schemes in progress

The Govt. of India is giving impetus to the conservation of native breeds and in line, the Govt. of Tamil Nadu has sanctioned a project "Establishment of a Small Ruminant Research Centre for *in situ* conservation of the native germplasm of Chevaadu, Ramnad white and Katchaikatty black sheep breeds at Southern Tamil Nadu" with a budget of Rs.80 lakhs and TANUVAS is in the process of establishing this Research centre at Veterinary College and Research Institute, Tirunelveli.

In order to improve the reproductive potential in dairy cattle, Government of Tamil Nadu has sanctioned a project on "Augmenting reproductive and production potential through adoption of assisted reproductive techniques using sexed

semen in dairy cattle" with a budget outlay of Rs.208 lakh under National Agricultural Development Programme. Tamil Nadu Veterinary and Animal Sciences University implements this project in Thiruvallur, Kancheepuram, Vellore, Thiruvannamalai and Villupuram Districts. Under this project, genetically superior female calves will be produced using sexed semen under field conditions to improve the productivity of dairy cattle by adopting comprehensive reproductive health cover in the above five districts.

To keep in phase with Government of India's Policy on doubling the farmers' income by 2022, the Government of Tamil Nadu has sanctioned a project on "Genetic improvement of Kanni Adu, Kodi Adu and Salem Black indigenous goat breeds through production of goat semen straws for artificial insemination in 1000 goats for doubling farmers' income" with a budget outlay of Rs.149 lakh.

To ensure sustainable income for the small and marginal poultry farmers through scientific rearing and value addition, the Government of Tamil Nadu has sanctioned a project on "Development of poultry entrepreneurship in hatchery management, poultry meat processing and value addition among 200 native chicken farmers for food safety and security" with a budget outlay of Rs.87 lakh. Under this scheme, TANUVAS has initiated to select scheme beneficiaries in five districts *viz.*, Dharmapuri, Krishnagiri, Thanjavur, Sivagangai and Theni to give skill development training on improved desi bird rearing technologies.

Under the scheme on "Establishment of low cost hydroponic fodder production device in landless / small farmer households for sustainable livestock farming in drought affected districts of Tamil Nadu", training for 320 beneficiaries in Tiruvallur, Tiruvannamalai, Kancheepuram and

Villupuram districts were completed and 320 units of hydroponic fodder devices were also distributed. Fodder production through hydroponic fodder devices will help to meet the scarcity during drought season for sustainable livestock farming.

Conservation centre has been established at Livestock Farm Complex, Madhavaram to conserve Rajapalayam, Chippiparai and Kanni breeds of dogs.

Siruvidai and Peruvidai chicken breeder units have been established at Poultry Research Station, Madhavaram.

With an aim to provide solutions to ensure safety and security of food from poultry origin besides controlling zoonotic diseases that could emerge from poultry, TANUVAS has obtained a multi-institutional project on "One health poultry hub" with a budget outlay of Rs.579 lakh from

United Kingdom Research & Innovation under Global Challenges Research Fund.

20.4 Technologies

Technologies on Evans syndrome flow cytometry staining kit for dog; ProBeads; Bovine Masti Cure Plus; Nano-Herbal Methicone Lotion; Nano Sarcoid Cream; AMS Green Tea Beads for Coccidia and AMS Beads for Coccidia; Solar tick trap with pheromone impregnated vapour patch and Value added milk products like Ghee residue Candy with orange peel, Milk protein fortified fibre enriched noodles, Low cost whey concentrate enriched Instant Powder mix Protein, Ghee residue chocolate, Papaya kalakhand, Choco bar etc. are ready for commercialization.

20.5 Capacity building programmes

TANUVAS initiated various capacity building programmes for students as well as faculty members to update their knowledge in latest

advancements in Veterinary, Animal and Food Sciences.

20.5.1 Initiatives for Students

- First Intra University Students Clinical Case Conference on Companion, Domestic and Wild Animal Practice was organized at VC & RI, Orathanadu on 05.04.2019. A total of 67 final year UG students from MVC and VC & RIs at Namakkal, Orathanadu and Tirunelveli presented the clinical cases.

- TANUVAS conducted the 11th Clinical Case Conference on "Farm and Companion Animal Practice for Veterinary Students" at MVC on 30.08.2019 and 31.08.2019. A one day pre-conference workshop on "Clinical updates in veterinary practice" exclusively for postgraduate students was organized on 29.08.2019.

- ♣ TANUVAS organised a TANUVAS intra university webinar on "Ultrasonography in large animal practice" for the IV B.V.Sc. & A.H. students of constituent colleges of TANUVAS through video conferencing at VC&RI, Namakkal on 12.10.2019. A total of 292 students attended the programme.

20.5.2 Initiatives for Faculty members

- ♣ An International Seminar on "Innovative Extension Management for uplifting Livelihood of Farmers – Status, Initiatives and Way forward" was jointly organized by TANUVAS and National Institute of Agricultural Extension Management (MANAGE), Hyderabad on 27.06.2019 and 28.06.2019 at MVC, Chennai and 220 scientists including delegates from Bangladesh, USA, Ethiopia, Sri Lanka and Nigeria participated in the programme.

- TANUVAS and Washington State University (WSU), USA jointly organised an international workshop on `Livestock Gene Editing' on 07.08.2019 at MVC, Chennai. A total of 124 scientists at national level participated.

- A workshop on 'Robotics based learning system development' under ICAR-NAHEP scheme for 'Institutional Development Plan for TANUVAS' was conducted at MVC from 29.07.2019 to 31.07.2019 and at VC&RI, Namakkal from 01.08.2019 to 03.08.2019. A total of 60 faculties attended the programme.

- An international conference on "Current scenario and future strategies of disease control for augmenting livestock and poultry under changing climate conditions" was conducted from 20.11.2019 to 22.11.2019 at VC & RI, Namakkal. A total of 127

research scientists participated in the conference.

20.6 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 2,44,887 animals were treated as out-patient cases and 3,680 animals as in-patient cases during the year 2019-20. Referral facilities with ultrasonography, endoscopy, electrocardiography, orthopaedics, haemodialysis, ophthalmology, dermatology, canine blood bank, etc. are also available. CT scan facility is also available in Madras Veterinary College and Veterinary College and Research Institute, Namakkal.

Six AMMA Ambulances were mobilized to provide essential veterinary care and treat the ailing animals by TANUVAS in the GAJA cyclone

affected three delta districts of Tiruvarur, Thanjavur and Nagapattinam and a total of 12,978 animals were treated during the post cyclone period from 23.11.2018 to 02.12.2018

20.6.1 Regional Referral Farm Animal Clinic

To render round the clock 24x7 hours hospital service to the emergency and critically ailing animals for the benefit of farming communities in and around Namakkal, the Government of Tamil Nadu has sanctioned Rs. 500 lakhs for the establishment of Regional Referral Farm Animal Clinic at Veterinary College and Research Institute, Namakkal with advanced diagnostic facilities and clinical services for rural farmers upliftment.

20.7 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 on dairy farming, sheep and goat farming, poultry farming, pig farming, milk and milk products and feed and fodder cultivation.

Table 23: Trainings conducted during 2019

Sl. No.	Location of the Centres	No. of Trainings	Persons benefitted
	Veterinary University Training and Research Centres (VUTRC)		
1	Coimbatore	66	2782
2	Dharmapuri	74	2105
3	Dindigul	50	1344
4	Erode	41	941
5	Karur	45	1706
6	Melmaruvathur	59	1268

Sl. No.	Location of the Centres	No. of Trainings	Persons benefitted
7	Cuddalore	64	2065
8	Rajapalayam	55	453
9	Salem	124	6503
10	Tiruchirapalli	62	3149
11	Thanjavur	69	3472
12	Tirupur	41	934
13	Vellore	31	995
14	Nagercoil	46	1413
15	Villupuram	56	1675
16	Tiruvannamalai	76	2546
17	Krishnagiri	50	1781
18	Nagapattinam	29	670
19	Perambalur	34	1340
20	Ramanathapuram	151	3765
21	Veternary University Training and Diagnostic Centre, Madurai	66	4196

Sl. No.	Location of the Centres	No. of Trainings	Persons benefitted
	Krishi Vigyan Kendras (KVK)		
22	Kattupakkam	219	5369
23	Kundrakudi	281	8054
24	Namakkal	112	5228
	Farmers' Training Centres (FTC)		
25	Tiruvarur	26	289
26	Kancheepuram	103	5054
27	Theni	60	1410
	Total	**2090**	**70507**

20.7.1 Distance Education courses

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, 15 skill development and 10 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.

Table 24: Distance Education courses conducted during 2019

Sl. No.	Title of the courses	No. of students enrolled
I	**PG Diploma Courses for Veterinarians**	
1	Ethno Veterinary Practices (PGDEVP)	7
2	Feed Manufacturing Technology (PGDFMT)	9
3	Commercial Poultry Production and Management (PGDCPPM)	3
4	Regenerative Medicine (PGDRM)	2
5	Small Animal Diagnostic Ultrasound (PGDDUS)	10
6	Zoonoses (PGDZ)	1

Sl. No.	Title of the courses	No. of students enrolled
7	Bovine Infertility and its Management (PGDBIM)	2
8	Wild Animal Disease Management (PGDWADM)	4
9	Veterinary Endoscopy (PGDVEN)	2
10	Advanced Reproductive Biotechnology in Animal Models (PGDARB)	8
11	Post Harvest Technology and Quality Assurance of Meat and Meat Products (PGDQAMP)	1
II	**Skill Development courses**	
1.	Milk and Milk Products Quality Control Assistant	6
2.	Livestock Farm Manager	20
3.	Poultry Farm Manager	2
4.	Poultry Vaccinator	9

Sl. No.	Title of the courses	No. of students enrolled
III	**Self Employment courses**	
1.	Dairy farming	348
2.	Sheep Farming	1
3.	Goat Farming	245
4.	Preparation of fermented dairy product	10
5.	Rabbit Farming	7
6.	Pig Farming	26
7.	Japanese Quail Farming	7
8.	Desi Bird Rearing	298
	Total	**1029**

20.8 Awards / recognitions

- **National Accreditation Board for Testing and Calibration Laboratories, Government of India (NABL) Accreditation ISO/IEC 17025:2017** of Pharmacovigilance Laboratory For Animal

Feed and Food Safety, Chennai and Animal Feed Analytical and Quality Assurance Laboratory, Namakkal has been renewed for two more years (2019 – 2021).

- Krishi Vigyan Kendra, Namakkal received **"BEST NICRAKVK AWARD 2019"** in recognition and appreciation of its best efforts in implementing the NICRA – Technology demonstration Component of Indian Council of Agricultural Research on 06.06.2019.
- Krishi Vigyan Kendra, Namakkal was awarded the **"Pandit Deendayal Upadhyay Rashtriya Krishi Vigyan Protshahan Puraskar – 2018"** award for the best KVK of Zone X of ICAR on 16.07.2019 in recognition of its identified performance and commendable achievements.

- **Patents** granted for - "**An improved egg candler", "An improved bird cage"** and **"RYZ cream"** during 2019.
- A total of 35 graduates of TANUVAS obtained ICAR PG scholarships in the recently held All India Postgraduate Entrance Examination conducted by the Indian Council of Agricultural Research, New Delhi.

20.9 Infrastructure created at TANUVAS during 2019-20

- The Hon'ble Chief Minister of Tamil Nadu Thiru. Edappadi K. Palaniswami inaugurated the "Puratchi Thalaivi Amma Arangam" established at a cost of Rs.1,276 lakh at TANUVAS Head quarters, Madhavaram Milk Colony, Chennai through video conferencing on 24.06.2019.
- Hon'ble Minister for Animal Husbandry, Government of Tamil Nadu

Thiru. Udumalai K.Radhakrishnan inaugurated the newly constructed administrative building of Pulikulam Cattle Research Station at Mangulam village, Manamadurai taluk in Sivagangai district on 21.11.2019. Hon'ble Minister for Khadi and Village Industries, Govt. of Tamil Nadu Thiru. G. Baskaran also graced the occasion and released a book in Tamil on "Pulikulam Breed"

- Hon'ble Minister for School Education, Youth Welfare and Sports Development, Government of Tamil Nadu, Thiru. K.A.Sengottaiyan inaugurated the newly constructed administrative building of Kangayam Cattle Research Station at Uppupallam village, Baguthampalayam, Sathyamangalam Taluk, Erode District on 25.11.2019. Hon'ble Minister for Animal Husbandry, Government of Tamil Nadu

Thiru. Udumalai K.Radhakrishnan and Hon'ble Minister for Environment and Pollution Control, Government of Tamil Nadu, Thiru. K.C.Karuppanan, participated in the inaugural function and delivered the special address.

- Hon'ble Minister for Higher Education, Government of Tamil Nadu, Thiru. K.P.Anbalagan and Hon'ble Minister for Animal Husbandry, Thiru. Udumalai K. Radhakrishnan participated in the Bhoomi Pooja function and laid the foundation stone on 28.11.2019 at Hanumanthapuram village of Dharmapuri district for the establishment of Alambadi Cattle Research Centre.
- 500 numbers of modern trevises have been supplied to the Department of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu for usage in veterinary dispensaries / veterinary hospitals.

20.10 Sustainable Development Goals - TANUVAS

The following are the strategies of TANUVAS towards achieving the Sustainable Development Goals:

- *In-situ* conservation units to be initiated for the breeds of Alambadi cattle, Trichy black sheep, Coimbatore sheep and four Dog breeds *viz,* Rajapalayam, Chippiparai, Kanni and Kombai
- Strengthening of the existing conservation units of cattle, sheep and goat
- Creation of a "Centralised Genome Resource Bank" for native livestock species
- Creation of awareness among the livestock keepers

20.11 Start-ups in Livestock sector

To nurture Start-ups and entrepreneurs in the area of veterinary, animal sciences and allied sectors, TANUVAS established a Veterinary Incubation Foundation (VIF) in the year 2019 with the financial support of Entrepreneurship Development and Innovation Institute (EDII), Chennai, a Govt. of Tamil Nadu undertaking. The salient activities of VIF are:

- ♣ Nine startups incubated at VIF @ TANUVAS to develop novel veterinary products/ services.
- ♣ VIF @ TANUVAS and TRPVB along with an incubatee of VIF @ TANUVAS, M/s.Illume Gene India LLP launched the doorstep diagnostic service for detection of haemoprotozoan parasites in canines on 18.10.2019.
- ♣ With the assistance of VIF, two of its incubates were selected for the grant-in-aid

(Rs. 2.00 lakh each) under the Innovation Voucher program (IVP) of Tamil Nadu Government to develop vaccine delivery prototypes

- VIF@TANUVAS also promotes student-entrepreneurship through Vetpreneurship Grant Opportunity (WeGrow) and Student - Incubatee Linkage (SIL) program. Eleven student-teams presented their innovative ideas and selected ideas are being supported through Pre-Incubation Support to Promote Entrepreneurship (PISPE). One such idea is 'combined cream separator cum butter churn' that has been developed at VCRI, Namakkal through PISPE and available for dairy entrepreneurs.
- During 2019-20, Government of Tamil Nadu has also sanctioned a sum of Rs.71.94 lakh to strengthen the VIF @ TANUVAS to facilitate more start-ups.

20.12 Industry-Institute Linkage

To ensure research and academic collaboration with industries/Institutes, TANUVAS executed Memorandum of Understanding with the following:

- ♣ K.J. Research Foundation (KJRF), Chennai on 25.04.2019 to carry out collaborative programmes in research and development on the broad common areas of mutual interest and benefit for a period of five years.
- ♣ Sri Ramachandra Institute of Higher Education and Research (SRIHER), Porur, Chennai on 15.05.2019 to collaborate in teaching and research programmes in the core competent areas with special focus on health care education for a period of five years
- ♣ Government Stanley Hospital (Stem Cell Research Centre), Chennai on 03.06.2019 to

have joint research projects, sharing expertise and conduct of training programmes in regenerative medicine and biotechnology for a period of 10 years

- GVK Emergency and Research Institute (GVK-EMRI), Secunderabad on 25.06.2019 to work for common interest including training, animal care and academic research for a period of three (3) years.
- BAIF Development and Research Foundation, Pune on 08.07.2019 to facilitate for collaboration in the field of education, research and translational research for a period of five years.
- Tamil Nadu Agricultural University, Coimbatore on 11.07.2019 for facilitating students' training / post graduate research for a period of three (3) years.

- ♣ Remount Veterinary Services, New Delhi on 06.01.2020 for giving training to Army vets and also allow TANUVAS students to visit Dog Breeding Centre at RVC centre and College and Equine Breeding Institutions for a period of five (5) years.

20.13 International Collaboration

A delegation led by Thiru. Udumalai K. Radhakrishnan, the Hon'ble Minister for Animal Husbandry, Govt. of Tamil Nadu comprising Thiru A. Gnanansekaran, I.A.S., Director of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu and Dr. C. Balachandran, Vice-Chancellor, TANUVAS visited the selected education institutions in Australia and New Zealand from 06.09.2019 to 15.09.2019.

The specific objectives of the visit are to demonstrate the academic, research and extension capabilities of TANUVAS to foster faculty, scientist and student exchange and

research collaboration with Australian and New Zealand Institutes; to identify mutual research interests in the selected fields of veterinary science and also to identify novel strategies to improve animal health in face of climate change and for potential adoption of cross-cultural farm management practices for sustainable farming in Australia, New Zealand and India.

Clinical externship training was imparted to the students from the following Universities at the various units of Teaching Veterinary Clinical complexes of TANUVAS during 2019-20.

- Six students from Oklahoma State University from 19.06.2019 to 21.07.2019.
- Fifty-nine students from Chittagong Veterinary and Animal Sciences University, Chittagong, Bangladesh from 19.06.2019 to 19.07.2019.

- Four students from Washington State University, Washington, USA from 11.08.2019 to 07.09.2019.

20.14 Priorities for 2020-21

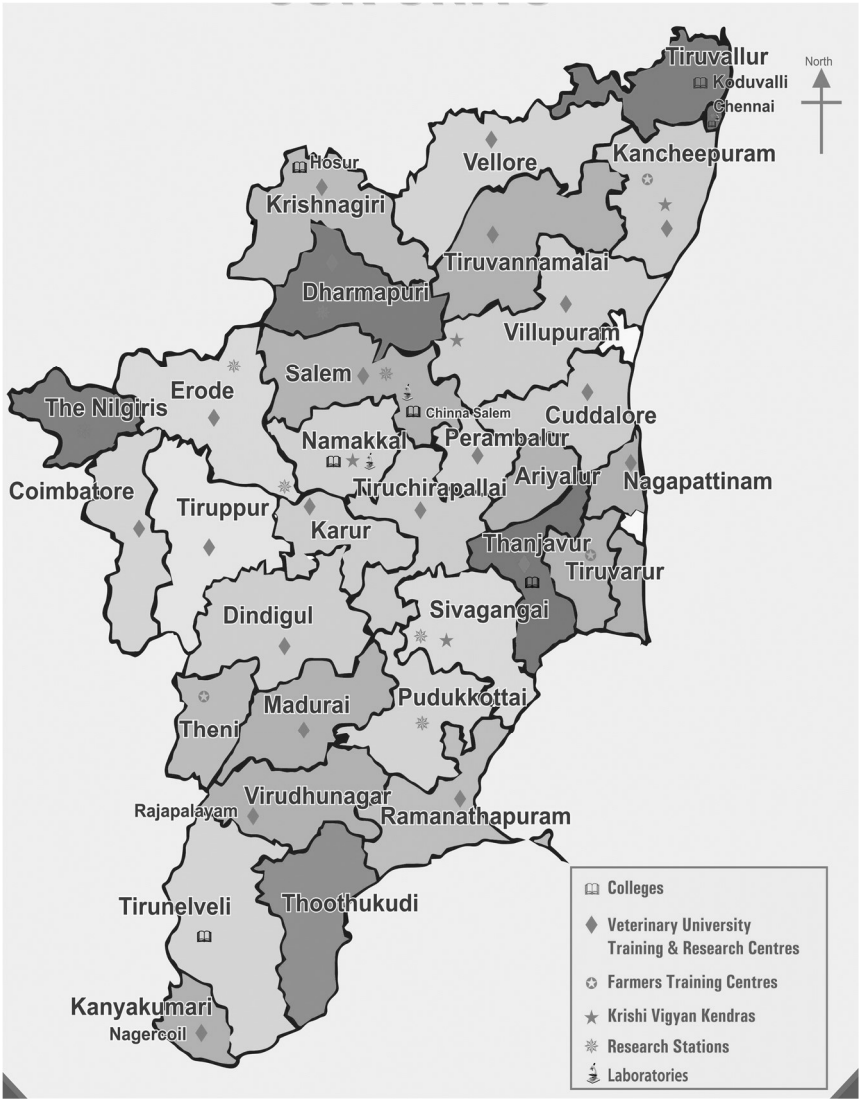
- To establish industry-university collaborative research consortium, to facilitate industry driven research and to promote start-ups
- Nurturing start-up companies in livestock sector
- Enhancement of livestock productivity through nutritional supplement
- To promote TANUVAS GRAND feed supplement among dairy farmers in Tamil Nadu to improve milk production and reduce methane production.
- To conserve the breeds of animals and poultry that are native to the State of Tamil Nadu

- ♣ Supply of germplasm from the institute to the field for breed improvement and enhancement of farmers income
- ♣ Establishment of fodder banks and promotion of seasonal and perennial fodder cultivation among farmers
- ♣ Adoption of cross-boundary livestock management practices such as shelter management and mechanization of farm operations
- ♣ 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
- ♣ Skill development training on animal husbandry activities to unemployed youth and rural women

- ♣ Strengthening of e-governance initiatives through development of management systems and user apps.
- ♣ Capacity building programme for Veterinary Professionals
- ♣ Developing climatic stress amelioration strategies / techniques for livestock
- ♣ Development of standard operating procedures to mitigate aflotoxin in milk

The Tamil Nadu Veterinary and Animal Sciences University will further the advancement of learning in veterinary and animal sciences besides undertaking research and extension services for the betterment of livestock, poultry and food sector in the state.

TANUVAS CENTRES



21. THE WAY FORWARD

Livestock rearing has an important place in the rural economy which is culturally and economically integrated into the society. Livestock provides dietary protein, ensures livelihood of the rural poor and provides draught power.

Livestock provides insurance against crop production risks and a coping mechanism to face livelihood shocks. Rural women play a significant role in the rearing of livestock and are responsible for most of the operations relating to feeding, breeding, management, and health-care of the livestock. The rapidly increasing demand for livestock products creates opportunities for the empowerment of women.

This sector has been consistently outperforming itself every year in terms of production of milk, eggs and meat during the past decades. However, minimum availability of land for feed and fodder has been a major impediment

in determining the size of livestock holding and hence, the increase in production has not been exponential.

Promotion of marketing and processing of products of livestock origin, conservation of Indigenous Breeds, improvement in healthcare system, digitization are some of the areas identified for interventions in the sector.

As many pockets/clusters in the State largely rely on this sector as a major source of income, it is important to increase the incomes generated through livestock so as to achieve the goal of doubling farmer's income by 2022.

21.1 Challenges to the livestock industry

The land is only common resource acting as the platform for the development of human and animals. Ever-increasing competition between human and animal for food is a critical challenge in animal rearing.

The percolation of extension services regarding animal husbandry is a challenge. To address this, the Department is conducting various awareness programmes on a mission mode. Issues like lack of nutrition, mastitis and reproductive health are addressed during camps conducted for the purpose.

The low production potential of the indigenous varieties of animals is also an added issue. Degraded pastures, increased climatic changes, decrease in monsoon rains also makes the animal husbandry vulnerable.

Technological backwardness, financial constraints are few issues that hinder the progress in the sector.

21.2 Opportunities

The major segments in animal husbandry market, performance of the animal husbandry market so far and its expected performance in the

coming years will be assessed. The various stages in the value chain of the animal husbandry industry and the key driving factors, degree of competition and challenges in the animal husbandry industry will be studied. This would give an account of the scope for commercialisation of certain segments in this sector, which would pave the way for exponential growth.

There are plenty of entrepreneurial opportunities in the processing sector. Thanks to the various initiatives of the State Government, the production of products of livestock origin is increasing every year.

The consumption of milk products has also increased which has fostered opportunities for milk processing. Food processing being the sunrise sector offers immense scope for development and such opportunities will be

provided to entrepreneurs for starting new ventures or scaling up their existing ventures through necessary tie ups.

The per capita consumption of meat in India is fairly low compared to the developed markets suggesting that a significant share of the market still remains unpenetrated.

Although the share of processed meat in the entire meat industry is currently fairly small, it represents a sector that is expected to grow very fast in the coming years. A continuous growth in disposable incomes coupled with changing food habits is expected to increase the consumption of meat in the coming years.

21.3 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, value addition and strengthening the value chain in collaboration with other Government agencies. The Department shall integrate fodder development as a primary activity within the livestock sector.

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 and produce certified fodder seeds by the departmental fodder banks as well as through PPP mode through farmer's 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 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 on 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.

The following are the thrust areas identified:

1. Micro nutrient management of milch animals with supplementation of minerals and management of animals shall be undertaken to augment milch animal's productivity. Focus would be continued on ensuring the udder health and reproductive health management of milch animals 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. Emphasis shall be laid 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. Animal Health Insurance programme shall be expanded to include Sheep and Goats.

8. The Tamil Nadu Animal Welfare Board would strive to ensure humane treatment of livestock.

9. Herd health management would be prioritised and cluster based approach covering all aspects of breeding, feeding and management of the livestock would ensure higher returns and bargaining power for the small producer.

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. Providing equitable and inclusive opportunities for 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. Collective Farming System enables collective Purchase of quality inputs by farmers which considerably reduces input cost.

12. Collective husbandry practices translates into enhanced productivity and collective marketing enables the FPCs to collectively market with or without value addition directly

to consumers, eliminating middle men thus ensuring good economic returns.

13. 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, intensifying

disease surveillance and forecasting of disease outbreaks, promoting cross breeding with indigenous varieties to improve resilience of crossbreds to climate change and promoting dairy development in villages by training more women on animal care.

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.

15. Investments in food processing infrastructure like establishing meat value chains, rural slaughter houses, establishment of cold storage facilities to store meat/eggs, refrigerated vehicles for transport of carcasses and/or meat etc. poultry processing centres, cold storage facilities to store eggs shall be encouraged.

16. 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.

17. Skill development programmes and training Needs of the rural livestock farmer / entrepreneur shall be a major focus area of the Department. Further, training of 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.

18. Rejuvenation of natural pastures and grasslands, ensuring access to institutional credit facilities for animal husbandry related avocations, ensuring rigorous veterinary extension services, promoting research in organic livestock farming are also identified as focus areas.

22. BUDGET ALLOCATION FOR THE YEAR 2020-21

A sum of Rs.1,678.2697 crore has been provided in the budget for 2020-21. Out of this, projected revenue expenditure is Rs.1,450.7885 crore, capital expenditure is Rs.227.2312 crore and loan amount is Rs.0.25 crore.

23. CONCLUSION

The livestock sector supports the State's economy as well as the socio-economic growth.

The livestock sector is performing well in the manner of production, value addition and export of dairy, poultry and other products. However, there are some threats that need to be factored which have to be addressed as we approach the global market with our own livestock products.

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 providing income generating assets to assetless poor women, position fodder crops as cash crops by providing inputs to augment fodder production in farmers own lands, to create and encourage entrepreneurs at village level, make the veterinary institution at the village level as a multi functional, multi dimensional resource centre, ensure livestock health through appropriate 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.

Food processing is a priority sector for the Government of Tamil Nadu as well as one of the focus sectors. 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.

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.

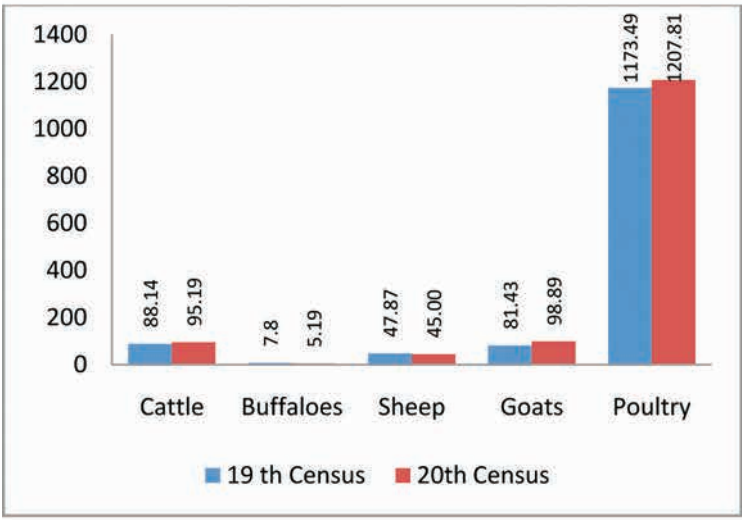
Tamil Nadu has inherent advantages in terms of human capital, positive industrial climate, strong macro-indicators and production base for

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.

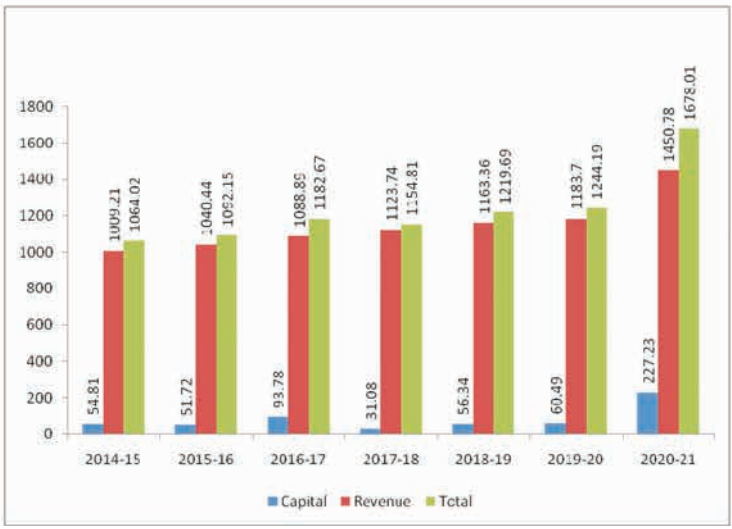
Issues like exclusion of chemicals and antibiotic residues that are seen as barriers to trade in livestock products can be addressed at the level of farmers to ensure quality of products. Continuing education programme for all the stake holders will surely ensure economic gains for the farmers.

UDUMALAI K. RADHAKRISHNAN
Minister for Animal Husbandry

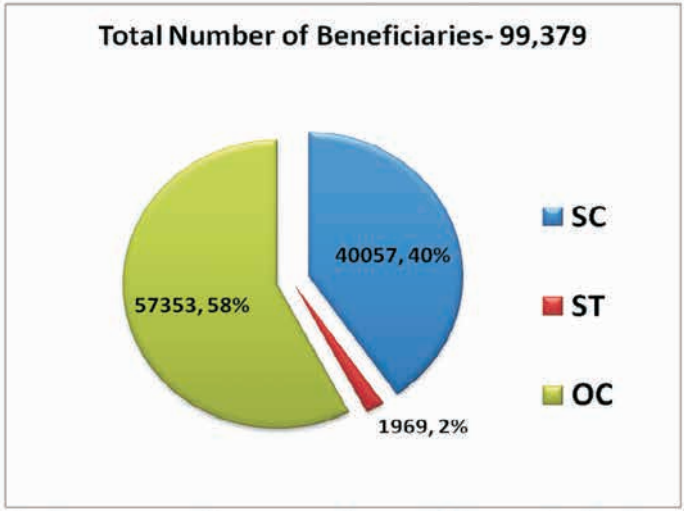
Livestock Population In Tamil Nadu (In lakh)



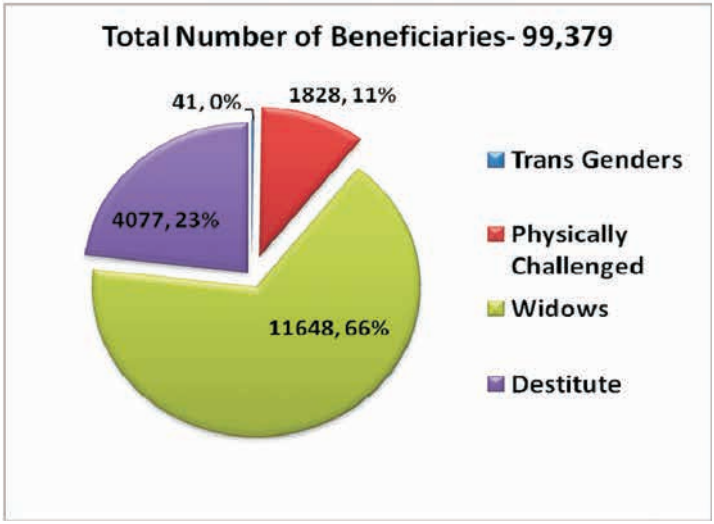
Budget Allocation (Rs. in crore)



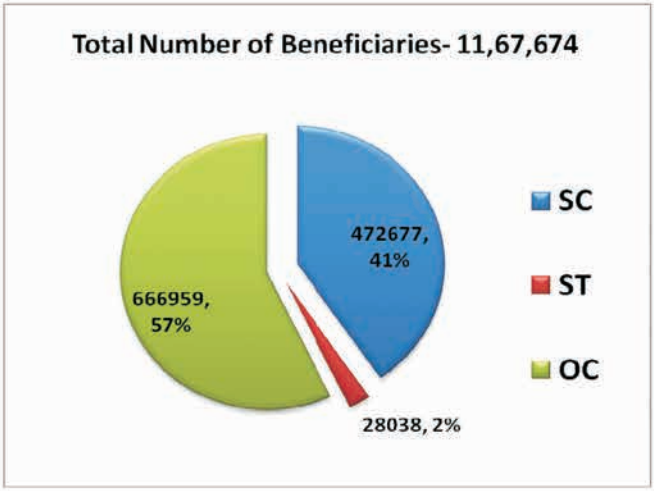
Community-wise number of beneficiaries benefitted under Free distribution of Milch cows Scheme



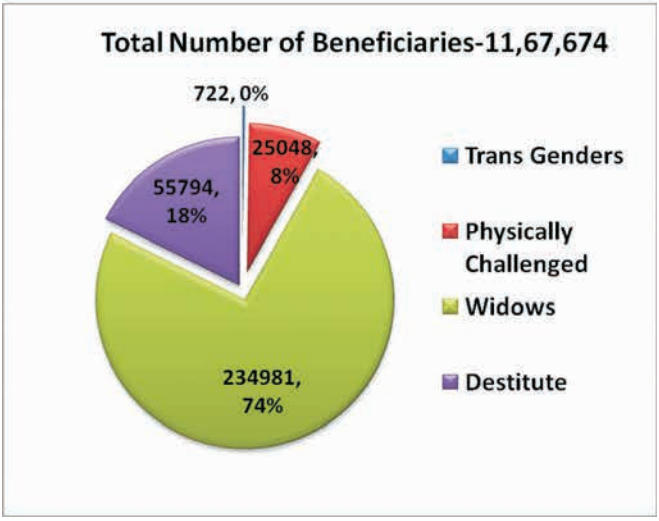
Category-wise number of beneficiaries benefitted under Free distribution of Milch cows Scheme



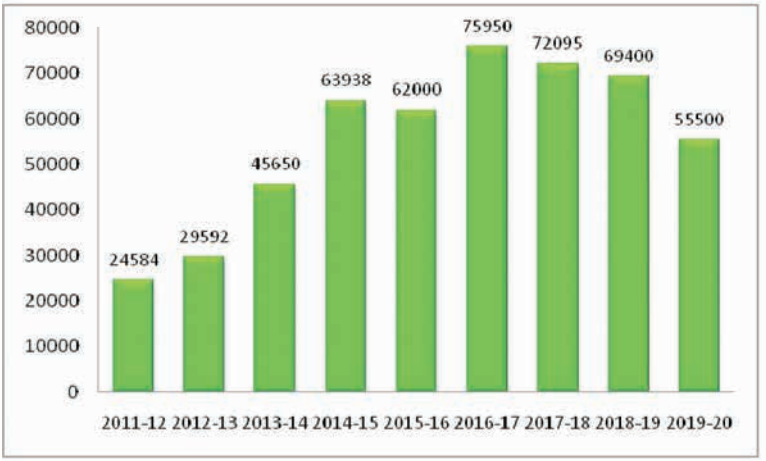
Community-wise number of beneficiaries benefitted under Free distribution of Goats/Sheep Scheme



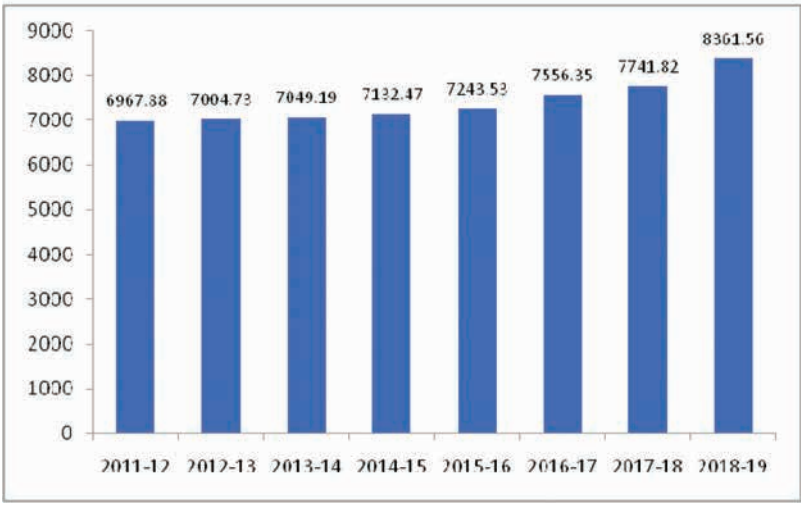
Category-wise number of beneficiaries benefitted under Free distribution of Goats/Sheep Scheme

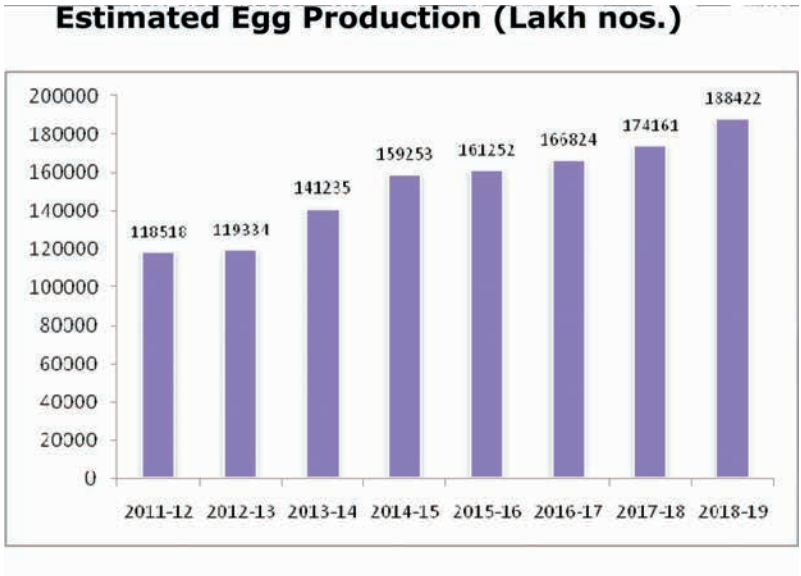


Area covered under Fodder Development Scheme (in acres)

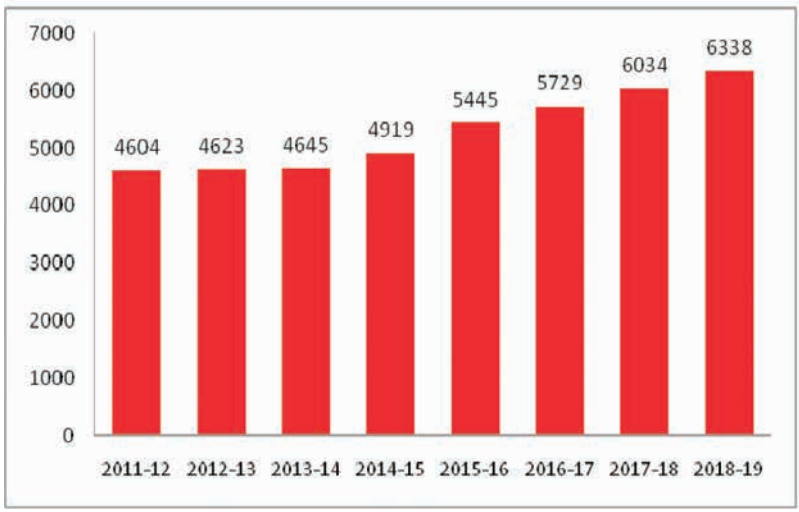


Estimated Milk Production (Lakh Metric Tonne)





Estimated Meat Production (Lakh Kgs.)



Hon'ble Chief Minister laying foundation in the presence of Hon'ble Deputy Chief Minister and Hon'ble Animal Husbandry Minister for AIIRLIVAS and Veterinary College and Research Institute, Thalaivasal in Salem District.

Hon'ble Chief Minister inaugurating AIIRLIVAS PROJECT in the presence of Hon'ble Deputy Chief Minister and Hon'ble Ministers.

Hon'ble Chief Minister, Hon'ble Deputy Chief Minister and Hon'ble Minister for Animal Husbandry releasing AIIRLIVAS LOGO

Hon'ble Chief Minister addressing the gathering at the AIIRLIVAS inaugural cum Farmers conclave function

Hon'ble Chief Minister, Hon'ble Deputy Chief Minister at the Livestock exhibition in the AIIRLIVAS foundation stone laying function

Hon'ble Chief Minister, Hon'ble Deputy Chief Minister and Hon'ble Minister for Animal Husbandry visiting the stalls at the AIIRLIVAS inaugural cum Farmers Meet

Hon'ble Chief Minister launching Animal Mobile Medical Ambulance (AMMA) services on 05.11.2019

Hon'ble Chief Minister in the presence of Hon'ble Minister for Animal Husbandry and Chief Secretary releasing Animal Welfare Board Information banner on 23.09.2019

Hon'ble Chief Minister, Hon'ble Deputy Chief Minister and Hon'ble Minister for Animal Husbandry giving Aseel birds to Women beneficiaries under State Poultry Development Scheme.

Counselling for Under Graduate Admission for 2019-20 held at Madras Veterinary College, Chennai from 25.07.2019 to 27.07.2019. Thiru. Udumalai K. Radhakrishnan, Honourable Minister for Animal Husbandry, Govt. of Tamil Nadu awarded Admission to the top 15 candidates on 26.07.2019

Krishi Vigyan Kendra, Namakkal was awarded the “Pandit Deendayal Upadhyay Rashtriya Krishi Vigyan Protshahan Puraskar- 2018” award for the best KVK of ICAR on 16.07.2019

Honorable Minister for Higher Education, Thiru. K.P.Anbalagan and Honourable Minister for Animal Husbandry, Thiru. Udumalai K.Radhakrishnan participated in the Bhoomi puja function and laid down the foundation stone at Alambadi Cattle Research Centre, Dharmapuri on 28.11.2019.

Students from Oklahoma State University, USA who came on Clinical Externship programme at TANUVAS and Students of TANUVAS who are on Externship programme at Washington State University, USA sought the good wishes from Thiru. Edapadi K. Palanisamy, Honourable Chief Minister of Tamil Nadu on 03.07.2019

The Twenty-first Convocation of TANUVAS was held at Anna Auditorium, Madras Veterinary College on 10.12.2019. Hon'ble Governor of Tamil Nadu and Chancellor of the University presided and conferred degrees and diplomas to 356 candidates in the presence of Hon'ble Minister for Animal Husbandry / Pro chancellor of University.

EXOTIC BREEDS OF CATTLE

HOLSTEIN FRIESIAN

JERSEY

NATIVE BREEDS OF CATTLE

ALAMBADI

KANGAYAM

NATIVE BREEDS OF CATTLE AND BUFFALO

BARGUR

PULIKULAM

UMBLACHERY

TODA BUFFALO

NATIVE BREEDS OF SHEEP

MADRAS RED

KILAKARISAL

MECHERI

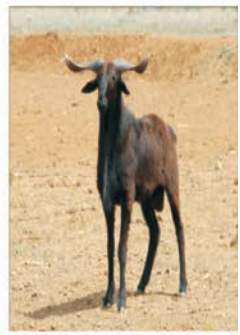
CHEVAADU

COIMBATORE

TIRUCHI BLACK

VEMBUR

RAMNAD WHITE



KATCHAIKATTY

NATIVE BREEDS OF GOATS

KANNI ADU

SALEM BLACK

KODI ADU

NATIVE BREEDS OF DOGS

RAJAPALAYAM

CHIPPIPARAI

KOMBAI

KANNI