ANIMAL HUSBANDRY, DAIRYING, FISHERIES AND FISHERMEN WELFARE DEPARTMENT

ANIMAL HUSBANDRY

POLICY NOTE
2022 - 2023

DEMAND No. 6

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"The greatness of a nation and its moral progress can be judged by the way its animals are treated. I hold that the more helpless a creature the more entitled it is to protection by man from the cruelty of humankind."

Mahatma Gandhi

I N D E X

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1. INTRODUCTION

Livestock has been an integral part of the Indian rural economy since time immemorial. Intertwined with the religious, social and cultural ethos of the people, their importance transcends civilisation. Besides complementing and supplementing crop agriculture, animal agriculture has often been providing succour and sense of security to farmers even during the failure of crop agriculture due to vagaries of monsoons.

Livestock represents 40% of the global value of agricultural production that sustains almost one billion of the world's most impoverished inhabitants.

Income growth, along with urbanization has changed the pattern of household expenditure

and food consumption substantially. Rural and urban household expenditure patterns have shifted away from cereals and towards livestock products; livestock products account for up to 25% of the food basket. Food expenditure pattern varies across economic classes and the percentage share of total food expenditure in lower economic classes has changed more prominently in favor of livestock products.

In the recent past, the Animal Husbandry has transformed into a major activity from its subsidiary status as the value of milk output has surpassed that of cereals and pulses together.

As per the 77th survey conducted by the National Statistical Office (NSO) during 2019, the livestock sector has grown at a cumulative annual growth rate of 8.15% over the last five years ending 2019-20. The sector has been a stable source of income across groups of agricultural households accounting for about 15 per cent of

their average monthly income. Livestock rearing also minimises the migration of population as it provides meaningful employment at their farm gate and provides assured income and ensures better utilization of human resources. It provides employment to a substantial number of rural and urban populations, many of whom are women who play a major role in the care and management of livestock. As days are in, more and more youths are taking up animal husbandry as a primary occupation as it provides stable and regular income throughout the year. India, with a predominant smallholder production system, the distribution of livestock wealth more equitable with 48% marginal farmers have more than half of the cattle population and two thirds of small ruminants against their share of 24% in land, leading to a much more equitable distribution of gains from livestock production.

Livestock provide the much needed balanced nutritious animal protein in the form of milk, meat and egg and improve the house hold's food security and also contribute in improving the national nutritional standards. Livestock products contribute 17 per cent to kilocalorie consumption and 33 per cent to protein consumption globally.

India has the largest livestock inventory in the world and generated outputs worth Rs. 11596.36 billion (2019). As per the estimates of National Accounts Statistics (NAS) 2020 for sector wise Gross Value Added (GVA) of agriculture and allied sectors, the contribution of livestock to national total agriculture and allied sector GVA (at constant prices) has increased from 24.32% (2014-15) to 29.35% (2019-20). Furthermore, the Livestock sector alone has contributed 4.35% of country's total GVA in 2019-20. Similarly, with a Gross State Value Added (GSVA) of Rs.939.97 billion in 2020-21,

the share of livestock in Tamil Nadu has increased from 3.78 per cent in 2011-12 to 5.43 per cent in 2020-21, while its contribution to the State agriculture and allied activities has increased from 29.86 per cent to 42.79 percent.

As per the 20th Livestock census (2019), India's livestock sector is one of the largest in the world, with a share of 11.6% of world livestock population. The huge livestock population of 536.76 million in India includes 193.46 million cattle, 109.85 million buffaloes, 74.26 million sheep, 148.88 million goats and 9.06 million pigs, besides 851.81 million poultry. The total livestock population in India has increased by 4.6% over the previous census.

Tamil Nadu has 9.52 million cattle, 0.52 million buffaloes, 4.50 million sheep, 9.89 million goats, 0.07 million pigs, 1.29 million dogs and 120.78 million poultry sharing considerable proportion to national livestock wealth. The State

ranks 1st in respect of poultry, 4th in sheep, 7th in goats, 13th in cattle and 14th in buffalo population in the country. The cattle population in Tamil Nadu rose to 95.19 lakh from 88.14 lakh between 19th and 20th Livestock census periods. The population of goats has increased to 98.89 lakh from 81.43 lakh during this period. The concerted efforts of the State Government have contributed to this laudable growth.

India ranks first in global milk production, accounting for 20.17 percent. India's milk production in 2019-20 was 198.44 million tonnes with per capita availability of 406 grams per day. Tamil Nadu ranked 11th in milk production in 2019-20 with 8.76 million tonnes with a share of 4.41% and per capita availability of 316 grams per day. Milk production in Tamil Nadu has increased by 4.75% over the previous year.

Egg production in India has increased from 45.2 billion in 2004-05 with a per capita

availability of 42 eggs per annum to 114.38 billion in 2019-20 with a per capita availability of 86 eggs per annum. Among the States, Tamil Nadu ranks second in egg production, with a share of 17.5% of the total eggs produced in the country. During 2019-20, Tamil Nadu produced 20.02 billion eggs with a per capita availability of 265 eggs per annum.

The total meat production in India in 2019-20 was 8.6 million tonnes with contribution of poultry meat by 50.5%. Tamil Nadu produced 0.66 million tonnes of meat in 2019-20 with the share of 7.72% in total meat production and ranks sixth in the nation.

The Animal Husbandry Department with a vast network of veterinary institutions, has been engaging in all the spheres of Livestock growth and development activities, positively improving the livelihood of the poor and downtrodden.

2. AIMS OF THE DEPARTMENT

- ❖ Upgrading local stock of cattle and buffaloes by artificial insemination using exotic and cross bred semen for cattle and Murrah semen for buffaloes
- ❖ Conserving and propagating 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 Union 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 advanced animal husbandry practices to farmers and entrepreneurs
- ❖ Developing and imparting Entrepreneurial skills among youth

3. MILESTONES OF THE DEPARTMENT

1799	➢ Veterinary aid in India started when East India Company of the British brought five Veterinary Surgeons from London to improve the breeding of horses and camels in India.

1892	➢ Civil Veterinary Department was inaugurated as a separate department manned by Military personnel.
1903	➢ Establishment of Madras Veterinary College
1924	➢ Hosur Cattle Farm was taken over from army and cattle breeding station was established.
1948	➢ The Head of the Department was designated as Director of Animal Husbandry. Artificial Insemination using Liquid Semen was introduced in the State.
1959	➢ Mobile Veterinary Dispensaries established.
1969	➢ A distinct, Directorate of Veterinary Education and Research was formed.
1970	➢ The Department was reorganized.

1975	➢ Introduction of Artificial Insemination with Frozen Semen.
1977	➢ Animal Disease Intelligence Units were established.
1981	➢ Poultry Disease Diagnostic Laboratory was established at Erode.
1989	➢ The first Veterinary University in South Asia, the TANUVAS was established.
1999	➢ Directorate of Veterinary Services was formed.
2003	➢ Tamil Nadu Livestock Development Agency (TNLDA) was created under the National Project on Cattle and Buffalo Breeding (NPCBB).
2005-2006	➢ Infrastructure of Veterinary Institutions was strengthened through National Bank for Agricultural and Rural Development (NABARD) Rural Infrastructure Development Fund (RIDF) X.

2006-2007	➢ Livestock Insurance Scheme was introduced in five selected districts.
2007-2008	➢ Tamil Nadu Veterinary Infrastructure Improvement Project (TANVIIP) was launched with funds sourced from NABARD RIDF XI.
2008-2009	➢ Livestock Insurance scheme was extended to five more districts.
2009-2010	➢ Livestock Insurance scheme extended to five more districts, thus the coverage extended to 15 districts.
2011-2012	➢ Hon'ble Chief Minister's Special Schemes viz., Free distribution of Milch Cows and Free distribution of Goats/ Sheep were inaugurated ➢ State Fodder Development Scheme (SFDS) launched to promote Fodder Production. ➢ 585 Sub-Centres were upgraded as Rural Veterinary Dispensaries.

	➢ The number of Animal Husbandry Divisions was increased from 65 to 76 to match the number of Revenue Divisions. ➢ Infrastructure improved in 360 Veterinary Institutions and 12 Livestock Farms through NABARD RIDF XVII. ➢ Upgrading Bacterial Vaccines Laboratory to Good Manufacturing Practices (GMP) standards at the Institute of Veterinary Preventive Medicine (IVPM) was sanctioned under NADP.
2012-2013	➢ Scheme for Poultry Development was launched. ➢ Five new Joint Director Offices of Animal Husbandry were created to match the number of Districts (except, Chennai). ➢ Embryo Transfer Technology (ETT) was introduced successfully at District

	Livestock Farm (DLF), Hosur and at field level in eight districts. ➢ 19th Quinquennial Livestock Census was conducted ➢ Two new Veterinary College and Research Institutes were established under TANUVAS at Orathanadu of Thanjavur district and at Tirunelveli.
2013-2014	➢ Directorate of Animal Husbandry and Veterinary Services was awarded with the "**Best Practices Award"** for improvement of quality Delivery System ensuring Good Governance". ➢ 100 Sub-Centres were upgraded to Veterinary Dispensaries. ➢ 11 Cattle Breeding and Fodder Development Units (CBFDs) were created. ➢ 53 Ultra Sound scanning equipment were installed at Clinician Centres,

	Livestock Farms and Cattle Breeding and Fodder Development Units (CBFDs). ➢ Portable Ultrasound scanning equipment was provided to five Veterinary Polyclinics. ➢ Steps initiated for conservation of indigenous breeds of livestock such as Kangeyam, Umbalachery and Bargur. ➢ Slatted Floors were installed for rearing Goats at five Departmental Livestock Farms with funding under "Integrated Development of Small Ruminants and Rabbits" (IDSRR) Scheme. ➢ An acute and extensive outbreak of Foot and Mouth disease was effectively controlled through measures taken on a war footing.

	➢ Rural Backyard Poultry Scheme was extended to all districts (except Chennai). ➢ Infrastructure of Dog Breeding Unit at Saidapet was strengthened. ➢ 450 Veterinary Institutions were constructed through NABARD RIDF XIX. ➢ "Stem Cell Research Centre for Animals", the first of its kind in the country, was established on 19.06.2013 at TANUVAS, Chennai. ➢ Silver Jubilee celebrations of TANUVAS.
2014-2015	➢ Assistant Director Offices of Animal Husbandry at Srirangam, Iluppur and Ambattur were created newly. ➢ Animal Disease Intelligence Units (ADIUs) at Pudukkottai and Thiruvannamalai were created.

	➢ 100 Sub-Centres were upgraded to Veterinary Dispensaries. ➢ 50 new Sub-Centres were created. ➢ Contained and effectively controlled to prevent the entry and spread of Avian Influenza from Kerala into Tamil Nadu. ➢ 500 Rural Youth were trained on artificial insemination techniques and provided inputs for establishing Artificial Insemination Centres. ➢ Cattle Insurance Scheme expanded to all the districts of the State under National Livestock Mission. ➢ Buildings for 226 Veterinary Institutions were constructed through NABARD RIDF XX.
2015-2016	➢ Animal Mobile Medical Ambulance Scheme was introduced in five districts.

	➢ 100 new Sub-Centres were established. ➢ The Chief Executive Officer post of TNLDA was upgraded to Additional Director cadre.
2016-2017	➢ Feed and Water Analytical Laboratory was established at Palladam, Tiruppur District. ➢ Integrated office buildings for the Regional Joint Director and Assistant Directorate Kancheepuram were constructed. ➢ Animal Disease Intelligence Units (ADIUs) at Tiruppur and Tiruvallur were established. ➢ Veterinary Epidemiology Centre was created at Saidapet, Chennai.
2017-2018	➢ 100 new Sub-Centres were created. ➢ Animal Disease Intelligence Units (ADIUs) at Perambalur and Theni were established.

	➢ 16 new Administrative Officer posts at Regional Joint Director Offices were created. ➢ Pulikulam Breed Research Station was established in Sivagangai District. ➢ Kangeyam Breed Research Station was established in Erode District.
2018-2019	➢ Tamil Nadu Animal Welfare Board (TNAWB) was established. ➢ Livestock and Poultry Feed Technology Centre at Tirunelveli was established. ➢ Alambadi Breed Research Station was established in Dharmapuri District.
2019-2020	➢ Integrated Livestock Park along with VC & RI, Salem was established at Chinnasalem. ➢ Buildings for Animal Disease Intelligence Units (ADIUs) were constructed at Tiruvarur and Namakkal.

	➢ Animal Disease Intelligence Units (ADIUs) were established at Ariyalur, Kanniyakumari and Namakkal. ➢ Building for Veterinary Polyclinic was constructed at Tiruppur. ➢ New office building for Regional Joint Director, Thanjavur was constructed.
2020-2021	➢ Goat Research Station was established at Tenkasi. ➢ Tiruchi Black Sheep Research Station was established at Dharmapuri. ➢ Veterinary University Training and Research Centre was established at Thoothukudi. ➢ Two new Veterinary College & Research Institutes, one at Theni and another at Udumalpet were created.

4. LIVESTOCK WEALTH IN TAMIL NADU

Underpinning the Arabian proverb, "A land poor in livestock is never rich, a land rich in livestock is never poor", Tamil Nadu has a rich and diversified livestock wealth. Animal Husbandry has been remaining as an integral part of lives of agrarian communities in Tamil Nadu. Livestock play a pivotal role in rural livelihoods and the economies of under privileged in Tamil Nadu. They are generator of income and employment for producers and others working in, sometimes complex, value chains. They are a crucial asset and safety net for the poor, especially for women and vulnerable groups, and they provide an important source of nourishment for rural and urban households.

Tamil Nadu has 245 lakh of various major species of animal heads, besides 1207.80 lakh poultry (2019 census).

Table 1: Livestock and Poultry Population As per the 20th Livestock Census in State

Species	Population (In lakh Nos.)
Cattle	95.19
Buffalo	5.19
Sheep	45.00
Goat	98.88
Pigs	0.67
Others(Horses, Ponies, Mules, Donkeys and Camel)	0.07
Total Livestock	**245.00**
Fowls and other birds (Farm)	995.16
Fowls and other birds (backyard poultry)	212.64
Total Poultry	**1,207.80**

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

The State is endowed with native breeds of cattle such as Kangeyam (Tiruppur, Erode, Coimbatore and Karur districts), Umbalachery (Thanjavur, Tiruvarur, Nagapattinam and

Cuddalore districts), Alambadi (Dharmapuri, Erode and Salem districts), Pulikulam (Sivagangai, Madurai, Dindigul and Theni districts), Bargur (Erode District) and Toda buffaloes (The Nilgiris District). Apart from these native cattle breeds, high milk yielding cross bred of Jersey (in plains) and Holstein Friesian (in hills) are being reared extensively by farmers.

Similarly, the State possesses native breeds of sheep like Mecheri (Salem and Erode districts), Ramnad White (Thoothukudi and Ramanathapuram districts), Madras Red (Chennai, Kancheepuram and Tiruvallur districts), Kilakarisal (Ramanathapuram, Virudhunagar, Madurai and Dindigul districts), Vembur (Thoothukudi district), Tiruchi Black (Perambalur, Ariyalur, Tiruchirappalli and Villupuram districts), Coimbatore (Coimbatore and Tiruppur districts) and Nilgiri (The Nilgiris district) and native goat breeds like Kanni Adu (Virudhunagar, Thoothukudi

and Tirunelveli districts), Kodi Adu (Thoothukudi and Tirunelveli districts) and Salem Black (Salem, Dharmapuri and Krishnagiri districts).

5. ADMINISTRATIVE SET UP

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

The Commissioner / Director is assisted on technical subjects by five Additional Directors, two Joint Directors, one Deputy Director and nine Assistant Directors at the Commissionerate / Directorate. Besides, Commissioner / Director is also assisted by one Joint Director (Admin), one Deputy Director (Personnel) and two Administrative Officers on the administration.

A Financial Controller and a Chief Accounts Officer deputed from Finance Department; an Accounts Officer and Assistant Accounts Officer deputed from Treasuries and Accounts

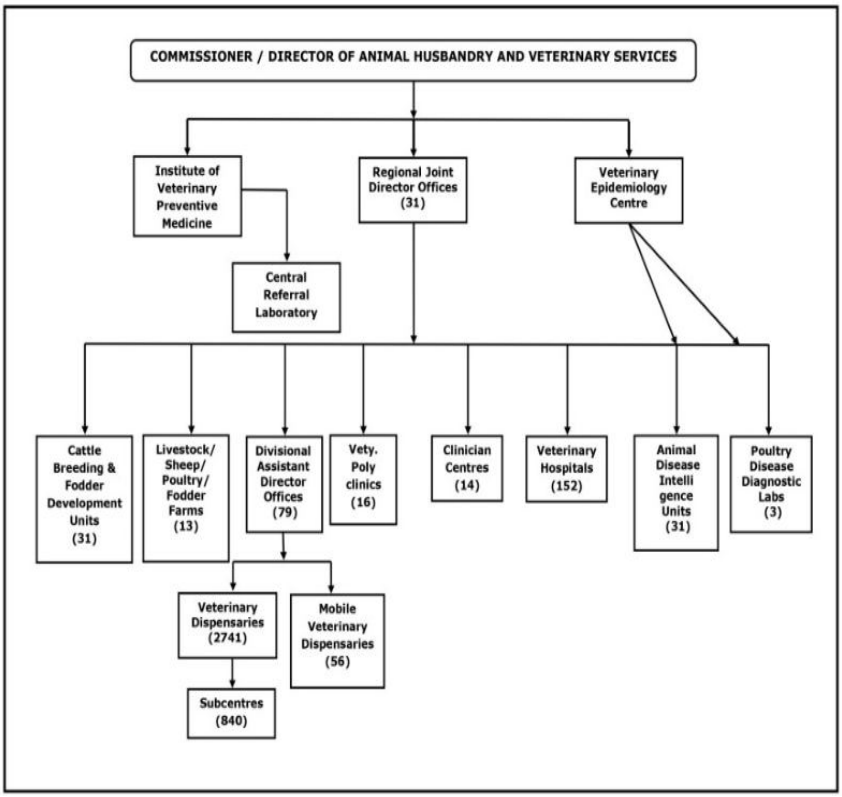
Department; Assistant Director (Agri.) from Agriculture Department; and Deputy Registrar from Co-operative Department provide assistance to the Commissioner / Director on the issues concerned.

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, which manufactures Vaccines and Veterinary Biologicals, is headed by a Director in the cadre of an Additional Director.

The Veterinary Epidemiological Centre (VEC), headed by a Joint Director, functioning from Veterinary Polyclinic campus, Saidapet, Chennai coordinates and monitors the work of the Animal Disease Intelligence Units (ADIUs) and Poultry Disease Diagnostic Laboratories.

DEPARTMENT ORGANISATIONAL CHART



6. VETERINARY SERVICES

Animal Husbandry Department extends timely and efficient health coverage to the livestock and poultry population of the State to

augment their production and productivity. The number of veterinary institutions under the ambit of the Department has expanded from a modest 120 during 1950-60's to 2979 in the year 2020-21. The Department has 16 Veterinary Polyclinics, 14 Clinician Centres, 152 Veterinary Hospitals, 2,741 Veterinary Dispensaries and 56 Mobile Veterinary Dispensaries. They provide various veterinary services to the livestock and poultry in the State that includes medical, surgical, gynaecological and infertility treatments, deworming and immunization.

- Veterinary Polyclinics, headed by a Clinician is assisted by Veterinary Assistant Surgeons, function round the clock, and provide specialised services.
- Clinician Centres, headed by a Clinician is assisted by a Senior Veterinary Livestock Supervisor provide specialized services.

- Veterinary Hospitals, headed by a Veterinary Surgeon is assisted by a Senior Veterinary Livestock Supervisor, provide veterinary services to the farmers.
- Veterinary Dispensaries, headed by Veterinary Assistant Surgeons provide veterinary and outreach services and implement Government welfare schemes.
- Mobile Veterinary Dispensaries, headed by Veterinary Assistant Surgeons provide veterinary services at the doorsteps of the farmers on a scheduled programme.
- Sub-Centres, manned by Livestock Inspectors, provide Artificial Insemination, first-aid and minor clinical services.

The species-wise work done by the above Veterinary Institutions during 2021-22 is as follows:

Table 2: Work done in the Veterinary Institutions during 2021-22

ACTIVITIES (2021-22)		Numbers in lakh
1	Cases treated (inc. first aid)	377.39
2	Artificial Insemination	44.62
3	Vaccination	405.18
4	Castration	8.66
5	Deworming	385.92
7	Calves Born	22.96

Table 3: District-wise Veterinary Institutions and Sub-Centre details

Sl. No.	District	VPC	CC	VH	VD	Sub Centres	MVD
1	Ariyalur	0	0	2	44	9	1
2	Chennai	1	0	1	0	0	1
3	Coimbatore	1	1	15	98	26	2
4	Cuddalore	0	1	5	92	56	1
5	Dharmapuri	0	1	3	80	10	2

Sl. No.	District	VPC	CC	VH	VD	Sub Centres	MVD
6	Dindigul	1	0	5	106	63	1
7	Erode	2	0	6	106	24	3
8	Kancheepuram	0	1	0	45	14	1
9	Chengalpattu	0	1	1	61	24	1
10	Kanyakumari	1	0	2	49	15	2
11	Karur	0	1	2	72	12	1
12	Krishnagiri	1	0	2	79	14	1
13	Madurai	1	0	4	96	53	1
14	Nagapattinam	0	0	3	34	14	1
15	Mayiladuthurai	0	2	1	38	7	1
16	Namakkal	0	0	5	105	8	3
17	Perambalur	0	0	0	37	5	0
18	Pudukottai	0	1	4	101	32	2
19	Ramnad	0	0	4	55	14	0
20	Salem	1	0	7	149	9	6
21	Sivagangai	0	0	2	79	47	0
22	Thanjavur	1	1	7	105	28	3
23	Theni	0	0	3	53	46	1
24	The Nilgiris	0	1	2	29	7	3
25	Tiruppur	2	0	7	102	39	1
26	Tiruvallur	0	0	5	88	26	1
27	Tiruvannamalai	0	1	5	124	21	3
28	Tiruvarur	0	1	10	72	30	1

Sl. No.	District	VPC	CC	VH	VD	Sub Centres	MVD
29	Thoothukudi	1	0	2	70	41	1
30	Tiruchirappalli	1	0	8	103	34	2
31	Tirunelveli	1	0	5	51	16	1
32	Tenkasi	0	0	3	61	19	0
33	Vellore	1	0	4	38	7	1
34	Tirupathur	0	0	2	37	9	2
35	Ranipet	0	0	2	46	10	1
36	Villupuram	0	0	5	101	6	2
37	Kallakurichi	0	1	2	53	18	2
38	Virudhunagar	0	0	6	82	27	0
TOTAL		**16**	**14**	**152**	**2741**	**840**	**56**

7.MEDICINES, EQUIPMENT AND CHEMICALS

The Department of Animal Husbandry is procuring medicines, equipment and chemicals through Tamil Nadu Medical Services Corporation (TNMSC). The finance distribution is given in Table below.

Table 4: Fund Allocation -2021-22

Sl. No	Items	Fund Allotted (Rs. in Lakh)
1	Medicine	2,582.08
2	Equipment and surgical suture materials	321.17
3	Intensive health plan	105.00
4	Mineral mixture	496.77
5	Alternative medicine	160.59
6	Reserve fund	209.29
	TOTAL	**3,874.90**

Distribution of medicines to all the Veterinary Institutions including sub-centres is undertaken by adopting the norms of monetary ceiling scrupulously.

8. INSTITUTE OF VETERINARY PREVENTIVE MEDICINE, RANIPET (IVPM)

The Institute of Veterinary Preventive Medicine, Ranipet, a unit of the Department of Animal Husbandry and Veterinary Services,

Government of Tamil Nadu. IVPM is engaged in the production of Veterinary Biologicals and Pharmaceuticals for use by the field Veterinary Institutions in the State.

GENESIS

- The Institute was started as **'SERUM INSTITUTE'** in 1932 at Madras Veterinary College.
- In March 1948, the Institute was shifted to the present campus at Ranipet with an area of 70.961 acres.
- From 1954, it was renamed as **Institute of Veterinary Preventive Medicine** (IVPM).

PIONEER OF VETERINARY BIOLOGICALS IN INDIA

- The Institute of Veterinary Preventive Medicine has been consistently proving itself to be a pioneer Institute among all Veterinary Biologicals in India.

- IVPM was the first to step in modification of the vaccine production facility to Good Manufacturing Practices (GMP) as per the mandatory requirement of Drug licensing authority of the Union Government.

- The Poultry vaccine production facility has been upgraded to GMP compliance and the full fledged GMP facility with Fermentor is completed for production of Bacterial Vaccines viz., Black Quarter Vaccine (BQV), Haemorrhagic Septicaemia Vaccine (HSV) and Entero Toxaemia Vaccine (ETV).

- Preparatory work for Anthrax Spore Vaccine production GMP facility and Test and Quality control Good Laboratory Practices (GLP) facility are completed and these facilities will be commissioned soon at IVPM with GMP/GLP Standards.

OBJECTIVES

- Prevention of animal diseases by proper vaccination coverage thereby augmenting the production potential of Livestock and poultry in the State.
- Ensuring the timely availability of necessary vaccines for animal health coverage thereby uplifting the livelihood of rural poor.
- Undertaking Surveillance for Foot and Mouth disease (FMD) through FMD regional centre and reducing economic losses to farmers due to FMD.
- Undertaking various disease surveillance programmes throughout the State by Central Referral Laboratory at IVPM through ADIUs in every district.
- Upgrading of vaccine production facility and Quality control lab to GMP/GLP Standards so as to meet the recommended standards in production and testing of vaccines.

ACTIVITIES OF THE INSTITUTE

- The Institute is producing four Bacterial vaccines, five viral vaccines, six Diagnostic kits, nine pharmaceutical products and one diluent.

- The vaccines are produced based on the Assistance to State for the Control of Animal Diseases (ASCAD) vaccination target and also based on the demand from the farmers and Veterinary Institutions during disease outbreaks and disasters.

Pharmaceutical Products

OINTMENTS	LINIMENTS
1. Boric acid 2. Iodine with Methyl Salicylate 3. Sulphur 4. Zinc Oxide 5. Whitfield	1. Turpentine 2. Methyl Salicylate 3. Benzyl Benzoate 4. Weak Solution of Iodine.

FMD Regional centre

- This centre is aided by ICAR through its All India Co-ordinated Research Project on Foot and Mouth Disease (AICRP on FMD). During FMD outbreaks, investigation and virus typing will be carried out by this centre.

PRESENT ACTIVITIES

- Maintenance of seed and virulent biological material.
- Routine production of Bacterial vaccines, Viral vaccines, Diagnostics and diluents for field supply for general and specific demand under ASCAD scheme.
- Selling of vaccines to various States of India.
- Freeze drying of viral vaccines by Industrial type Freeze dryer at FDV section of IVPM.
- Maintenance of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) licensed Small animals

section with Guinea pigs, Mice and Rabbits for testing of vaccines by Quality control section.

- In-house laboratory testing of vaccines and other products including animal testing.
- Packaging and dispatch of biological products.
- Epidemiological study of Foot and Mouth disease in Tamil Nadu and Pondicherry by AICRP of FMD regional centre at IVPM, Ranipet.
- Supply of diluent and vaccine for conducting Pulse RD (Ranikhet Disease) programme in the State.
- Educating veterinary students from TANUVAS and other Universities of neighbouring States on vaccinology.
- Conducting training programmes for lab technicians.

Major Projects completed at IVPM, Ranipet:

1. Upgrading Bacterial vaccine Facility to GMP Standards.

- Funded by - National Agricultural Development Programme (NADP)
- Total fund - **Rs.12.02 crore**
- Bacterial Vaccine production has commenced in the new GMP lab

2. Construction of Biosecurity wall

- Funded by - NADP
- Total fund - **Rs.2.07 crore**
- Biosecurity wall completed

3. Provision of Water connection to IVPM, Ranipet

- Funded by - NADP
- Total fund - **Rs.1.02 crore**
- Project completed and water supply is regularly supplied to the Institute.

4. Upgrading Poultry vaccine Facility to GMP Standards.

- Funded by - NADP
- Total fund - **Rs.3.00 crore**
- Poultry Vaccine production has commenced in the new GMP lab

Projects currently under implementation at IVPM, Ranipet:

1. **Establishment of Anthrax Spore Vaccine Lab (ASV)**

   - NADP project sanctioned in 2012-13
   - Total cost – **Rs.57.98 crore**
   - Project implemented by National Dairy Development Board (NDDB), Anand through TANUVAS.
   - Construction commenced by August 2018 and at present, entire civil work is completed.
   - Commissioning work is under progress.

2. **Establishment of Quality Control lab (QC lab)**
   - Funded by - NABARD
   - Total cost – **Rs.19.925 crore**
   - Project implemented by NDDB, Anand through TANUVAS.
   - Construction commenced from August 2018 and at present, entire civil work is completed.
   - Procurement of major equipment is under progress.

3. Establishment of GMP standard Pharmaceutical Lab

- Budget Announcement of 2018-19
- Project cost – **Rs.10.00 crore**
- TANUVAS identified GMP consultant and the design for the project had been approved by the Committee members.
- Finalisation of equipment for the facility based on the production capacity is under progress.
- Once the same is completed, civil works will be carried out by NDDB, Anand.

Future Projects for implementation at IVPM, Ranipet:

1. Up-gradation of *Brucella* and Diagnostics unit with GMP compliance.
   (Estimated Project cost – Rs.28.00 crore)

2. Up-gradation of Sheep pox vaccine production facility with GMP compliance.
   (Estimated Project cost – Rs.35.00 crore)

Table 5: Biological Production details 2021-22

Sl. No	Biological produced	Doses (in lakh)
A.	**Bacterial Vaccines**	
1	Anthrax spore vaccine	30.00
2	Black quarter vaccine	3.98
3	Enterotoxaemia	0.59
4	Haemorrhagic septicaemia	0.59
B.	**Viral Vaccines**	
1	Sheep Pox vaccine	2.24
2	Duck Plague vaccine	165.26
3	Ranikhet disease vaccine 'F'	-
4	Ranikhet disease vaccine 'K'	405.04
5	Ranikhet disease vaccine *'Lasota'*	-
C.	**Diagnostics (in ml)**	
1	CMT Antigen	900
2	Brucella abortus Coloured Antigen	990

Sl. No	Biological produced	Doses (in lakh)
3	Brucella abortus plain Antigen	1500
4	Brucella abortus MRT Antigen	1250
D.	**Diluent (in litres)**	
1	Phosphate Buffer Saline	4500

The various vaccine production facilities of the Institute are in the process of being upgraded to GMP standards in collaboration with NDDB and TANUVAS.

Construction of the Quality Control / Quality Assurance lab and Anthrax Spore Vaccine Production lab with GMP standards, Small Animals Testing facilities with GLP standards is presently underway at IVPM, Ranipet.

9. DISEASE PREVENTION, DIAGNOSIS, CONTROL AND ERADICATION

Various bacterial, viral, protozoal, parasitic diseases affect livestock and poultry cause

substantial economic loss to the farmers. Control and eradication of livestock diseases is essential, not only for profitable livestock production, but also to make livestock and livestock products globally acceptable.

For this purpose, 31 Animal Disease Intelligence Units (ADIUs), three Poultry Disease Diagnostic Laboratories (PDDLs) and one Veterinary Epidemiology Centre (VEC) and one Central Referral Laboratory (CRL) are functioning in the State.

9.1 Animal Disease Intelligence Units (ADIU)

Preventing major livestock diseases through vaccination, surveillance and monitoring are imperative to ensure livestock health. ADIUs play a pivotal 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), Brucellosis, etc.,

These units are also responsible for monitoring the efficiency of vaccination, assessing 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 Encephalopathy, etc.

Sophisticated instruments such as haematology 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 31 districts (except Chennai and

newly formed districts namely, Tenkasi, Kallakurichi, Tirupathur, Ranipet, Chengalpattu, and Mayiladuthurai). These newly formed districts are covered by the ADIUs of Tirunelveli, Villupuram, Vellore, Kancheepuram and Nagapattinam respectively.

9.2 Poultry Disease Diagnostic Laboratory (PDDL)

To cater to the needs of farmers in areas of high poultry production, Poultry Disease Diagnostic Laboratories are functioning at Andagalur Gate in Namakkal and Erode districts. 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, Infectious Bursal Disease, Infectious Bronchitis, Avian Leucosis Complex, common bacterial diseases like *Salmonella*, *E. coli* and parasitic infestations.

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

Another PDDL with laboratory facilities for water and feed testing has been constructed in collaboration with NDDB and TANUVAS at Palladam, Tiruppur district for catering to the needs of numerous broiler farmers.

9.3 Veterinary Epidemiology Centre (VEC)

Veterinary Epidemiology Centre was established in September 2017 at Saidapet, Chennai-35. It is the State level apex body carrying out the surveillance, monitoring and forecast of livestock and poultry diseases in Tamil Nadu.

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

VEC periodically monitors the activities of ADIUs and PDDLs at District level and offers technical guidance regarding diseases outbreak and vaccination and ensures that the impact of the disease is mitigated at the earliest.

The VEC is actively involved in testing of Stud bulls maintained in the three frozen semen production stations of the departmental farms [District Livestock Farm (DLF), Hosur, Exotic Cattle Breeding Farm (ECBF), Eachenkottai and District Livestock Farm (DLF), Ooty] along with the Regional Disease Diagnostic Laboratory as per the Minimum Standard Protocol (MSP) prescribed by Union Government to ensure that Frozen Semen straws intended for Artificial Insemination are distributed from a disease free herd.

VEC coordinates the inspection of poultry farms/establishments with respect to Compartmentalization against Avian Influenza as

per the instructions issued by Union Government from time to time to ensure that the compartmentalized farms/ establishments have adhered to the principles of Compartmentalization prescribed by Office International des Epizooties (OIE) and maintains all necessary bio security and bio safety standards.

In the year 2021-22, the VEC has attended 39 disease outbreaks in the State besides carrying out the monitoring of Foot and Mouth Disease Control Programme (FMD-CP) and ASCAD vaccinations.

9.4 Central Referral Laboratory (CRL)

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

This laboratory plays a major role in disease confirmation by OIE approved laboratory techniques and provides technical guidance to the

ADIUs and PDDLs to control livestock and poultry diseases.

9.5 Disease Prevention Services

The vaccinations are done at or near the farm gate by the field veterinarians. Every year, disease forecasting is done based on the outbreak of diseases during the preceding 5 years. Vaccination is being carried out before the expected onset of monsoon.

PPR vaccine has been procured under Union Government schemes (PPR-CP). Vaccines against economically important livestock diseases such as Anthrax, Black Quarter, Haemorrhagic Septicaemia and Sheep Pox are produced in the IVPM, Ranipet. The funds for the same are sourced from the Union Government sponsored ASCAD scheme. All the vaccinations are carried out free of cost.

Table 6: Vaccination carried out during 2021-22

Name of the Disease	Type of animals Vaccinated	No. of animals vaccinated (nos. in lakh)
Anthrax	Cattle, Buffalo, Sheep and Goat	29.430
Black Quarter	Cattle	4.500
Foot and Mouth Disease (2^{nd} round)	Cattle, Buffalo	63.300
Haemorrhagic Septicaemia	Cattle and Buffalo	0.810
Peste des Petits Ruminants	Sheep and Goat	12.000
Rabies	Pet animals	1.250
Sheep Pox	Sheep	0.039
Total		**111.329**

Foot and Mouth disease, a highly contagious, viral, vesicular disease of cloven-footed animals, that causes heavy economic loss, is controlled by implementing FMDCP funded jointly by the State and Union Governments.

So far, 17 rounds of FMD vaccination had been carried out successfully in the State under the FMDCP scheme covering approximately 94 lakh eligible bovine population in every round of vaccination at six months interval.

9.5.1 National Animal Disease Control Programme - Foot and Mouth Disease and Brucellosis (NADCP)

Vaccination against Foot and Mouth Disease is being carried out for the entire eligible bovine population in the State under the 100% funding of Central Sector scheme of NADCP.

Under the scheme, in the first round of FMD vaccination, 87.03 lakh eligible bovines were vaccinated during 2020-21.

During 2021-22, in the ongoing second round, about 63.30 lakh eligible bovines were vaccinated as on 29.03.2022.

Brucellosis vaccination of eligible heifer calves under NADCP will be carried out during 2022-23 after the receipt of *Brucella* Vaccine from Union Government.

10. LIVESTOCK DEVELOPMENT

10.1 Departmental Farms

The Department maintains 8 Livestock Farms, 3 Sheep Farms, one Poultry Farm and one Fodder Seed Production Farm. These Livestock Farms act as model units for demonstrating best practices and scientific techniques to the Livestock farmers. Fodder slips, fodder seeds and good quality germplasm are being supplied to the farmers at nominal rates fixed by the Government.

Table 7: Location of Departmental Farms and the animals maintained

Sl. No	Name of the Farm	Species	Breeds
1	Exotic Cattle Breeding Farm, Eachenkottai (Thanjavur District)	Cattle	Jersey, Crossbred Jersey, Umbalachery
		Buffaloes	Murrah

Sl. No	Name of the Farm	Species	Breeds
2	District Livestock Farm, Hosur (Krishnagiri District)	Cattle	Crossbred Jersey, Crossbred Holstein Friesian, Sindhi, Kangeyam, Bargur, Pulikulam
		Sheep	Mecheri
		Goats	Tellicherry, Kodi Adu, Salem Black
		Pigs	Large White Yorkshire
		Poultry	Aseel
		Horses	Kathiawar and Thoroughbred
3	District Livestock Farm, Abishekapatti (Tirunelveli District)	Cattle	Crossbred Jersey, Sahiwal
		Sheep	Kilakarisal
		Goat	Kanni Adu
		Pigs	Large White Yorkshire, Landrace
		Poultry	Vanaraja, Aseel
4	District Livestock Farm, Udhagamandalam (The Nilgiris District)	Cattle	Jersey, Crossbred Jersey, Holstein Friesian, Crossbred Holstein Friesian
5	District Livestock Farm, Pudukottai (Pudukottai District)	Cattle	Crossbred Jersey, Crossbred Holstein Friesian
		Sheep	Ramnad White
		Goats	Jamnapari
		Pigs	Landrace, Large White Yorkshire
6	District Livestock Farm, Naduvur (Thanjavur District)	Cattle	Jersey
		Buffalo	Murrah
7	District Livestock Farm, Chettinad (Sivagangai District)	Cattle	Crossbred Jersey, Holstein Friesian, Crossbred Holstein Friesian, Tharparkar, Sahiwal
		Sheep	Ramnad White

Sl. No	Name of the Farm	Species	Breeds
		Goats	Jamnapari, Tellicherry
		Pigs	Large White Yorkshire
		Poultry	Aseel
8	Livestock Farm, Korukkai (Tiruvarur District)	Cattle	Umbalachery
9	Sheep Farm, Chinnasalem (Kallakurichi District)	Sheep	Mecheri, Madras Red
		Goats	Salem Black, Tellicherry
10	Sheep Farm, Mukundarayapuram (Vellore District)	Sheep	Madras Red
11	Sheep Farm, Sathur (Virudhunagar District)	Sheep	Vembur
		Goats	Kanni Adu
12	Poultry Farm, Kattupakkam, (Chengalpattu District)	Fowls	Vanaraja, Nicobari, Kadaknath, White Leghorn, Aseel, Rhode Island Red.
		Turkey	Beltsville white
		Quail	Japanese Quail
13	Fodder Seed Production Farm, Padappai (Kancheepuram District)		Fodder Sorghum CoFS-31, Cumbu Napier Co-4, Co-5, Desmanthus, Agathi

10.2 Frozen Semen Production

In order to ensure the availability of semen with high genetic merit, there are 3 Frozen Semen Production Stations operating, one each at Exotic Cattle Breeding Farm, Eachenkottai, District

Livestock Farms at Hosur and Ooty. In these Frozen Semen Production Stations, the minimum standardization guidelines laid down by the Union Government, with a view to produce quality frozen semen are fully followed. In addition, I.S.O certification has been issued by the Bureau of Indian Standards (BIS) for Eachenkottai and Ooty Frozen Semen stations. These stations produce suitable frozen semen straws to ensure better fertility, conception rate and rapid genetic improvement in the livestock maintained by the farmers.

There are 31 Cattle Breeding and Fodder Development (CBFD) Units in operation to distribute the frozen semen straws to all Veterinary Institutions and Sub Centres located at various parts of Tamil Nadu.

These units are also involved in augmenting fodder development through distribution of fodder

seeds, fodder slips and tree fodder seedlings to the needy farmers.

Table 8: Frozen Semen Production (In lakh doses)

Sl. No	Frozen Semen Station	2018-19	2019-20	2020-21	2021-22
1	Exotic Cattle Breeding Farm, Eachenkottai	29.33	38.42	49.13	28.79
2	District Livestock Farm, Hosur	11.05	16.05	14.84	10.73
3	District Livestock Farm, Ooty	18.43	10.34	11.74	10.30
Total		**58.81**	**64.81**	**75.73**	**49.82**

11. SCHEMES

Animal Husbandry provides sustainable livelihood opportunities to millions of small / marginal farmers and landless poor. Proper implementation of Employment generation schemes can ensure higher levels of economic

activity, leading to sustainable growth and development in rural areas. Keeping this in mind, the Department is implementing various beneficiary-oriented schemes for the economic upliftment and welfare of the poor and downtrodden.

11.1 Specialized Veterinary Health Care and Awareness Camp

Kalnadai Pathukappu Thittam scheme was started on 18.01.2000 at Tirukazhukkundram in Chengalpattu district and has been under continuous implementation since then. Now the scheme is realigned as Specialized Veterinary Health care and Awareness Camps and during 2021-22, 7760 camps to be conducted throughout the State at a total cost of Rs.7.76 crore to provide veterinary health care facilities (both preventive and curative) to livestock and poultry, free of cost. Further, awareness on advanced scientific animal husbandry practices will be

created among farmers. In these camps, treatment of ailing animals, deworming, vaccination against diseases, castration, Artificial Insemination, infertility treatments, pregnancy verification, minor surgeries like CLP, specialized gynaecological assistance etc., are being carried out along with distribution of mineral mixtures at free of cost.

So far, 7760 Specialized Veterinary Health care and Awareness Camps were conducted throughout the State. Through these camps, 76.54 lakh livestock and poultry of 8.06 lakh farmers were benefitted.

11.2 Fodder Development

Balanced nutrition is one of the most important factors that influence the health and productivity of livestock. The objective of improving milk production can be met only by ensuring the availability of good quality fodder in

a balanced ratio. Green fodder being an economic source of nutrients for the dairy animals, it helps in maintaining good health and improving breeding efficiency of animals. Increased use of green fodder in the ration of animals will reduce cost of milk production, thereby increase the profit.

The demand for both green and dry fodder is increasing day by day. Livestock production is more efficient from cultivated fodder than from the fodder obtained from degraded grazing lands. Shrinkage of cultivable land under fodder is observed due to pressure on agricultural land for food and cash crops.

11.2.1 Limitations in fodder production

Limited availability of high yielding fodder varieties, lack of quality seeds of improved fodder varieties, poor quality of dry fodder, changing cropping pattern in favour of cash crops etc., are

the major limitations in increasing the area under fodder crops. Besides, low priority efforts to invest in fodder production, lack of post-harvest management for surplus fodder, poor management of pasture lands and inadequate extension and manpower support for fodder development substantially increased the deficit situation of fodders.

To reduce the gap between demand and availability of green fodder, there is a need to improve green fodder yield through enhanced use of certified seeds / quality planting material of improved high yielding varieties of fodder crops. For ensuring year round green fodder production, it is essential that every dairy farm must preserve the surplus fodder either in the form of silage or hay. Further, the seasonal availability of green fodder necessitates preservation of fodder in order to feed the animals throughout the year.

11.2.2 Initiatives of the Department for Sustainable fodder production

The Department is focusing on augmenting fodder production, conservation and management of available fodder resources to overcome fodder scarcity, particularly during the lean period and natural calamities including droughts/floods by implementing various State and Union shared schemes *viz.,* State Fodder Development Scheme (SFDS), National Livestock Mission (NLM), Accelerated Fodder Production Programme under NADP, National Mission on Sustainable Agriculture (NMSA) and Tamil Nadu Irrigated Agriculture Modernisation project (TNIAMP), etc.

- **Awareness creation** – wide publicity and awareness on the importance of balanced ration, feeding of nutritive green fodder, nutritional management of animals and green fodder production in each and every farm holding has been created through the

"Specialised Veterinary health care and Awareness camps" conducted at micro level.

- **Demonstration Programme in Farmers Field** – To demonstrate the cultivation and feeding of balanced nutritive fodder among the farmers, 100 numbers of demonstration units comprising sorghum CSV 33, *Stylo scabra, Stylo schofield* and fodder cowpea Kits were distributed to 5 Districts Viz., Salem, The Niligris, Krishnagiri, Dharmapuri and Namakkal.

- **Commercial fodder production** – In order to encourage farmers / rural youths in commercial fodder production and preservation techniques, 150 acres of farmers field in Dharmapuri, Krishnagiri, Salem, Namakkal, Virudhunagar, Erode and Tiruppur districts were brought under Maize/Sorghum cultivation and 50% subsidy towards cost of cultivation including seeds (except harvesting cost) were

provided to the farmers and harvesting of fodder crops were taken up by the Department. Around 712 MT of green fodders were procured @ Rs.3.50/Kg and are baled (11,700 bales) and stored in District Livestock Farm, Hosur, Chettinad, Pudukkottai and Sheep farm, Sattur for use during exigencies.

- **Rejuvenation of Meikkal / Grazing land on Scientific lines** - The small and marginal farmers have traditionally relied in the common grazing land / meikkal land for meeting the significant portion of the fodder requirements of their livestock. As a pilot mode 1,000 acres of meikkal land is identified in 31 districts in the State for rejuvenation at an outlay of Rs. 1.67 crore and implemented in convergence with Department of Rural Development and Panchayat Raj. After bush clearance and completion of reclamation works, the identified lands were divided into

paddoks / plots and tree fodders like Subabul, Neem, Velvel were planted in the border and sowing of high yielding perennial forage species Cenchrus / Stylosanthas were taken as intercrops. The grazing land will not be permitted for grazing during first year of establishment. From the second year onwards grazing will be regulated to ensure satisfactory regeneration, so that, high yielding Perennial grass and legumes will be made available to the livestock throughout the year there by increasing the milk and meat production.

- **Promoting alternate fodder (Azolla) -** Use of alternative fodder for livestock will address the fodder shortages and reduce feed costs. Azolla is one such alternate fodder and a balanced fodder for all types of livestock. To enlighten the farmers on importance of feeding alternate fodder and its cultivation method

30,958 Azolla units were established in the farmers' field during last year.

- **Promoting alternate fodder production techniques (Hydroponics) -** Due to the low rainfall pattern and shrinkage of cultivable area, the farmers are unable to allocate the farm area for fodder production. Fodder production through hydroponics is a viable and cost-effective method. To demonstrate this, 3,600 units were established in the farmers' field during last year.

- **Establishment of Model Silvipastoral system –** In order to educate the farmers on the importance of feeding of tree fodders, pasture grasses and legumes to the animals and to bridge the fodder deficit decisively, a model Silvipasture is being established at Sheep Farm, Sattur located at Virudhunagar district.

11.2.3 Fodder Preservation / Conservation Activities

- **Establishment of Silage Making units** – To demonstrate the supply of green fodder throughout the year by preserving the green fodder produced in excess during monsoon season by the farmers themselves through Silage making and utilised during the lean period, 125 Silage making units are being established in the clusters identified by Department of Agriculture / Horticulture in Rainfed Area Development under National Mission for Sustainable Agriculture (NMSA) in 30 districts as a demonstrative unit in the farmers' field at an outlay of Rs. 1.17 crore.

- **Conservation by minimizing wastage**- It is reported that about 15-20% of the offered fodder was not taken by the animals and being wasted when it is fed as a whole fodder. Hence, chaffing is essential to minimize the

fodder wastage. Keeping in view of the constraints in fodder production and usage, emphasis is given for efficient utilization of available fodder by minimizing the wastage through distribution of 1,000 Nos. of Chaff cutters to the livestock farmers at 75 % subsidy.

- **Promotion of Farm Mechanization** - Fodder production and utilization are labour intensive, time consuming and is considered as high energy intensive operation. Most of the fodder crops are multi-cut and has to be fed to animals in high volume. Appropriate mechanization in fodder harvesting is essential to optimize the fodder production and increase productivity per unit area. To reduce drudgery in farm operation and making farm work more attractive 2,500 numbers of grass cutters were distributed to farmers at 75% subsidy for harvesting the fodder crops.

11.2.4 Fodder Development in Departmental Farms

The departmental farms ensure timely production and supply of green fodder, fodder slips, fodder tree saplings and vermicompost to farmers at a reasonable cost. Green fodder is mainly propagated through slips / rooted slips. The major fodder cultivated in our State is Bajra Napier Hybrid grass. Due to the persistent efforts of the department over the years, the concept of fodder slip propagation has been popularized among the farmers. This has promoted production and supply / exchange of quality fodder slips among the farmers themselves. Further, a Baler unit was procured at a cost of Rs. 9.50 Lakh for District Livestock Farm, Chettinadu and green fodder produced during cropping season are harvested, baled and stored for utilization by the needy farms during lean period. During 2021-22, an area of 965 acres was brought under fodder cultivation in 12 departmental farms. Around

18,500 MT of green fodder were produced and 28.19 lakh nos. of fodder slips were distributed to the needy farmers at subsidised cost during last year.

Through all these fodder development measures the department has successfully driven home the concept of fodder cultivation in farmers' own land, Meikkal land and also promotes commercial fodder production which over a period of time would significantly reduce the demand-supply gap of fodder in the State.

11.3 Free distribution of Sheep / Goat scheme

Scheme for creation of Women Entrepreneurship by providing 5 goats/sheep at 100% subsidy to 38,800 rural poor Widows/Deserted, Destitute Women and Transgender at a cost of Rs.75.63 crore is under implementation for the year 2021-22. The scheme

would aid in sustainable livelihood avenue at their home, thereby reducing the incidence of poverty.

11.4 Poultry Development

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

The Department is 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. This scheme is being implemented under the NLM with financial assistance of 60% from Union Government and 40% from State Government in Dharmapuri and Ramanathapuram Districts at a total outlay of Rs. 140 lakh during 2018-19 and 2019-20 and in Pudukkottai and Virudhunagar Districts at an outlay of Rs. 100 lakh during 2020-21.

Under this scheme, 200 beneficiaries were selected from each district and provided funds for procurement of 200 dual purpose (meat and egg) birds each along with night shelter in the first year and after a gap of 72 weeks of production period, a second batch of 200 birds will be provided to the same beneficiary, so as to ensure the sustainability of the farm and thus for the economic upliftment of farmers. For the second year, 200 birds per beneficiary are being distributed in Dharmapuri and Ramanathapuram districts and the selection of beneficiaries is under progress in Pudukkottai and Virudhunagar districts.

Besides this, an Innovative Poultry Productivity Project for broilers was implemented in Tiruvannamalai district during 2018-19, wherein 200 beneficiaries were provided funds for purchase of 600 numbers of day-old chicks in four batches of 150 chicks each. A total fund of Rs. 225 lakh was provided for construction of

sheds, procurement of feed, feeder, waterer and to purchase 1,20,000 chicks. The scheme is being implemented in Villupuram and Theni districts covering a total of 400 beneficiaries at a total cost of Rs.450 lakh. The scheme is creating major employment opportunities and creating interest among others to start such poultry enterprises.

11.4.2 Entrepreneurship Development through Native Chicken Rearing

In order to improve the socio-economic status; to encourage poultry entrepreneurs in rural areas; and to popularize native chicken rearing, 1,925 poultry farmers in 388 blocks are being provided 50% subsidy to procure each 1,000 native chicks, one-month feed and an incubator at a total cost of Rs. 14.73 crore. This scheme is implemented under NADP and has resulted in better livelihood and nutritional security to the rural farmers.

11.4.3 Poultry Units in Departmental Farms

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

Table 10: 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, Abishekapatti (Tirunelveli District)	Vanaraja, Giriraja
3	District Livestock Farm, Chettinad (Sivagangai District)	Aseel
4	Poultry Farm, Kattupakkam, (Kancheepuram District)	Vanaraja, Aseel, Nicobari, Kadaknath, White Leghorn, Rhode Island Red, Beltsville WhiteTurkey, Japanese Quail.

11.4.3.1 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 grower, layer houses and hatchery complex has been established in the District Livestock Farm, Hosur, Krishnagiri District, at a total outlay of Rs.6.74 crore, under NADP. In this breeding complex, structural facilities are constructed to grow native chicks under intensive system of poultry rearing to produce and supply approximately 10 to 12 lakh chicks annually.

11.4.3.2 Native Chicken Breeding Complex and Hatchery Unit at District Livestock Farm, Abhishegapatti

With the objective of providing good quality native chicken to the farmers, a Native Chicken Breeding Complex and Hatchery Unit will be established at the District Livestock Farm

Abhishegapatti in Tirunelveli District under NADP in 2021 -22 with financial assistance from Union and State Governments in the ratio of 60:40 at a total cost of Rs.942.31 lakh. As first instalment, Rs. 471.16 lakh has been released and this will be used for construction of Native Chicken Breeding Complex and Hatchery Unit. Through this native chicken breeding farm, 10,000 chicks will be produced per week and about 5 lakh chicks will be distributed to farmers per annum.

11.5 World Bank Assisted Tamil Nadu Irrigated Agriculture Modernisation Project (TN IAMP)

Animal Husbandry Department is one of the line departments involved in implementation of World Bank Assisted Tamil Nadu Irrigated Agriculture Modernization Project. Animal Husbandry activities are to be implemented in 66 sub-basins covering 34 districts at a total outlay

of Rs.38 crore over a period of 6 years. The main animal husbandry activities implemented are formation of Dairy Interest Groups (DIG), Calf Management, Mastitis Management, Fertility-cum-healthcare camps, programmed breeding, performing artificial insemination at farmers' door step and Fodder Development.

So far, 98 DIGs consisting 2450 farmers have been formed in 43 sub basins; 16,950 female calves have been dewormed and provided with Mineralized salt licks; 26,397 cows were treated for mastitis; 2,700 fertility-cum-healthcare camps were conducted; 26,453 cows have been covered under programmed breeding; 6,28,208 Artificial Inseminations have been performed at the farmers' doorstep; and 2,944 ha have been brought under fodder cultivation. By the above activities, 2.56 lakh farmers were benefitted with the production of 1.45 lakh calves.

During 2022-23, animal husbandry activities are to be extended in 9 more sub basins. It is proposed to deworm and distribute mineralized salt licks to 9,300 female calves; to treat 15,366 cows for mastitis; to conduct 1,488 fertility-cum-healthcare camps; to cover 14,880 cows under programmed breeding; to perform 2,15,900 Artificial Inseminations at the farmers' doorstep; and to bring 1,607 ha under fodder cultivation, at a total outlay of Rs. 8.78 crore, during 2022-23.

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

An Advanced Institute for Integrated Research on Livestock and Animal Sciences (AIIRLIVAS) is being established in 1,102.25 acres at Thalaivasal, Salem District adjoining the Salem-Chennai National Highway. This Institute is being established at a cost of Rs.564.44 crore.

11.6.1 Objectives

1. To establish livestock and poultry farms on proven scientific technologies, which could be adopted by the farmers. Superior genetic merit off-springs shall be given to farmers to improve their livestock /poultry wealth.
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 veterinary and animal sciences, dairy technology, poultry production technology and food technology.
4. To create a 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.

AIIRLIVAS is poised to become a world-reputed organisation with education, research, production and processing facilities, skill development, and promotion of entrepreneurship for veterinary sector expansion all under one umbrella. The various interrelated activities will be divided into ten main campuses 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 unit with aeration facility, Aquaponics unit, ornamental fishery unit and modern fish kiosk.

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

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, silvi-pasture and fodder seed production.

10. **Public Interaction Zone** comprising children's park, amphitheatre, 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, bank branch and ATM.

Infrastructure facilities for Skill Development Complex, Research Complex, Business Incubation and Seamless Integration Complex, Meat Production and Processing Complex, PG Education Complex and Poultry units of Livestock Farm Complex and iconic structures such as Administrative Building, VIP guest house and entrance arch are taken up by the Public Works Department (PWD) and works are under progress.

Construction of Public Interaction Zone is also taken up by the PWD.

Infrastructure facilities for Indigenous Cattle unit, Sheep and Goat unit, Native dog breeding unit, Animal Quarantine facility, Isolation facility, Farm veterinary hospital, Clinical laboratory, piggery unit, poultry units (Hatchery & Feed mill) of Livestock Farm Complex and Construction of Instrumentation & Fabrication centre, Integrated livestock farms, Model livestock units of Skill Development Centre are taken up by Tamil Nadu Veterinary and Animal Sciences University and works are under various stages of progress.

Construction of Intensive fish seed rearing unit is taken up by the Department of Fisheries and Fishermen Welfare. Aquaponics unit and Ornamental fishery unit are taken up by the TamilNadu Fisheries University.

TWAD, TANGEDCO, Highways Department and Agriculture Engineering Department are also involved in the execution of various components of the project.

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

The farmers will be benefited by the availability of genetically high quality young-ones of livestock at affordable prices. Horizontal up-gradation of the genetic composition of the livestock by application of modern tools will ensure increased animal productivity.

Access to demonstrative models of innovative technologies will improve the profitability. Farmer producers will realise better prices for their produce 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. Sustained efforts will also be made to improve their production performance over the years. Farmers will also be trained on the best practices in livestock rearing.

11.6.3 Training of Entrepreneurs, Skill Development and providing Market Intelligence

Multi-purpose integrated farm facilities will be an opportunity for energetic entrepreneurs to explore unique opportunities in the field of Animal Husbandry.

Entrepreneurs get insights on the prices of various commodities in markets within and outside the State. Export opportunities will also be facilitated to entrepreneurs, by training them on adherence to quality and providing inputs on available overseas markets.

11.6.4 Providing world class facilities for learning to Students and Researchers

Students and researchers opting to get into the field of research and development will have excellent experimental units and laboratory facilities. Their quality research publications will get them good employment opportunities in reputed national and international institutions. They can also engage in collaborative research with overseas research institutions of repute in the field of veterinary and animal sciences.

11.6.5 Consumers

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

In addition to this, a Veterinary College and Research Institute is established in AIIRLIVAS campus, under the aegis of TANUVAS at a financial outlay of Rs.196.36 crore.

A project of such magnitude requires copious and uninterrupted water supply for smooth functioning. In order to meet the water requirement of around 10 Million Litres per day, the Government of Tamil Nadu has sanctioned a special water supply project at a financial outlay of Rs.262.16 crore. The TWAD Board executed the special water project to carry water through pipelines from Mettur Dam and the work is completed.

11.7 Dog Breeding Unit, Saidapet

Tamil Nadu possesses excellent native dog breeds such as Rajapalayam, Chippiparai, Kombai and Kanni. To conserve and propagate these native breeds, a Dog Breeding Unit is functioning at Saidapet, Chennai since 1980. Puppies

produced are being sold to the public based on their registration seniority at the price fixed by the Government vide G.O. (D) No. 297 AHDF and FW Dept (AH4) dt.18.11.2021.

12. VETERINARY INFRASTRUCTURE

The Department provides veterinary services like health cover, disease prevention, clinical services, disease eradication and breeding support through an array of veterinary institutions like Polyclinics, Clinician Centres, Veterinary Hospitals, Veterinary Dispensaries, Animal Disease Intelligence Units, Poultry Disease Diagnostic Laboratories and Veterinary Epidemiology Centre. There are 13 farms, including 8 livestock farms, 3 sheep and goat farms, one exclusive poultry breeding farm and one fodder farm.

The veterinary institutions have transformed themselves from being a facility for providing treatment for ailing livestock to being a

Knowledge Resource centre and Extension centre. Farmers can access any veterinary institution within their vicinity for availing any of these services. Hence, it is imperative that all the institutions are provided with necessary required infrastructure. With the ultimate aim of rural development, the Department's infrastructure is being developed with assistance from NABARD Rural Infrastructure Development Fund (RIDF), NADP, Establishment and Strengthening of Veterinary Hospitals and Dispensaries (ESVHD) and State funds.

Under these Schemes, buildings for 2,076 Veterinary Institutions were newly constructed at a total cost of Rs.631.72crore and construction is under progress for 80 more Veterinary Institutions at a cost of Rs.52.31 crore. Further, G.O. has been issued to construct new buildings for 88 Veterinary Institutions under NABARD RIDF XXVII assistance at a total cost ofRs.57.46 crore.

Construction of water trough for 1,658 Veterinary Dispensaries is also under process at a cost of Rs.3.95 crore for providing drinking water facility to animals at Veterinary Dispensaries.

Table 11: Scheme-wise fund allocation for Infrastructure Development

S. No	Name of the Scheme	No. of Buildings	Total Allocation (Rs. in crore)
1	State Fund	34	60.67
2	ESVHD	256	25.51
3	NADP	100	28.66
4	NABARD	1,854	626.66
Total		**2,244**	**741.50**

13. LIVESTOCK CENSUS AND INTEGRATED SAMPLE SURVEY

13.1 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 20thQuinquennial enumeration of the Livestock Census was conducted during the year 2019 as per the guidelines provided by the Union Government using tablet computers. The Livestock Census is 100% funded by the Union Government.

13.2 Integrated Sample Survey (ISS) Scheme

Annual sample surveys are being carried out under Integrated Sample Survey from the year 1977-78 onwards with 50% financial assistance from Union Government.

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 *namely* summer, rainy and winter seasons for studying the seasonal fluctuations in production. The survey covers 15% of villages in each district as per the guidelines of Union Government.

The results of Integrated Sample Survey are highly useful in evolving; monitoring and evaluating the developmental schemes implemented for the economic development of the livestock farmers over a period of time and helps to assess the impact of its efforts.

14. JALLIKATTU - THE TRADITIONAL AND CULTURAL IDENTITY OF TAMIL NADU

Jallikattu, 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.

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

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.

The Department ensures 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, it is ensured

that the bulls are not subjected to unnecessary pain and suffering during the events.

The organisers and other stakeholders are sensitised by the District Collectors regarding the procedures to be adopted for conducting Jallikattu. Banners spelling out the responsibilities of the bull owners/ participants / organisers, including dos and don’ts, are displayed at strategic places as well as the venues of Jallikattu events.

A checklist such as activity, Bull holding area, Bull run area, Bull collection yard, Examination of Bulls, Arena, Setting up of gallery, Medical examination of participants and Law and order specifying the steps to be taken before, during and after the conduct of Jallikattu is followed meticulously. All these measures have ensured that no untoward incident occurs during the conduct of Jallikattu events in the State.

During 2022, 221 Jallikattu events were conducted. First Information Reports (FIRs) 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.

15. ANIMAL WELFARE MEASURES

15.1 Activities of Tamil Nadu Animal Welfare Board (TNAWB)

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. The 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, AHD&F Dept. dated 24.10.2018 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 vested with the responsibility of fulfilling the principles of the Prevention of Cruelty to Animals Act 1960 through the State Animal Welfare Boards in the respective States.

The Tamil Nadu Animal Welfare Board is headed by the Hon'ble Chief Minister as the Chairman, while the Hon'ble Minister of Fisheries-Fishermen Welfare and Animal Husbandry is the Vice-Chairman. The other members include the Chief Secretary, Principal Secretaries of concerned departments, Directors, Registrars and honorary

members of the SPCA. The Board has three committees–the General, Executive and Standing committee.

All issues related to animal welfare, dealt under the Prevention of Cruelty to Animals Act (1960), Transportation of Livestock Act (1978), Regulation of Livestock Markets Rules (2016), Dog Breeding and Marketing Rules (2016), Pet Shop Rules (2018), Animal Birth Control (2001), Establishment and Regulation of Societies for Prevention of Cruelty to Animals (SPCA) are administered and monitored by the Board.

15.2 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 section 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 by-laws and guidelines for efficient discharge of duties, setting up and monitoring of infirmaries and animal shelters.

All Pinjrapoles, cattle pounds, etc. owned and run by local authorities shall be managed by such local authority jointly with the Society or Animal Welfare Organisations (AWO).

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 the Board, confer additional powers to any society for exercising the powers and discharging the functions assigned to it.

15.3 Animal Birth Control Programme

This programme is being implemented to prevent the indiscriminate breeding of stray dogs

and reduce incidence of Rabies. The Union Government has formulated the Animal Birth Control (Dogs) Rules (2001) to control the stray dog population by the Corporations, Municipalities and local bodies.

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

The scheme is under implementation in all Corporations, Municipalities and local bodies involving Municipal Administration Department, Rural Development Department, Animal Husbandry Department and Animal Welfare Board of Tamil Nadu.

15.4 Pet Shop Registration

As per the Union Government Ministry of Environment, Forest and Climate Change, under notification G.S.R.844 (E) dated 06.09.2018 and

Pet Shop Registration Rules 2018, the Pet shops that are functioning across the State were trading without any regulations should be regulated by the State Animal Welfare Board with the involvement of the District administration and Animal Husbandry Department.

The pet shops must be registered with the State Animal Welfare Board, by paying a non-refundable sum of Rs.5000 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. So far, 391 pet shops are registered, and licences issued by the board.

Tamil Nadu Animal Welfare Board (TNAWB) has issued notice instructing all pet shop owners to register with the Board.

16. SUSTAINABLE DEVELOPMENT GOALS AND PLAN OF ACTION

Sustainable Development Goals (SDGs) are a collection of 17 Global Goals set by the United Nations General Assembly in 2015 for the year 2030. Animal Husbandry Department contributes towards achieving Goal 1: No Poverty, Goal 2: Zero Hunger, Goal 3: Good Health and Well-Being, Goal 5: Gender Equality and Goal 12: Responsible Consumption and Production under SDGs through various welfare schemes.

The Department addresses Goals 1, 2, 3 and 5 of SDG by providing sustainable livelihood opportunities and income generation by providing priceless goats/sheep to rural poor widows / deserted / destitute women and transgender. In order to achieve Goal-12:

Responsible Consumption and Production, the Department is extending veterinary services, breeding support and fodder development, besides disease monitoring, prevention and control through the network of Veterinary Institutions, and augments livestock production.

SDGs Cells have been established in the Department, District-wise and division-wise, to coordinate the activities.

17. REDUCTION OF REGULATORY COMPLIANCE BURDEN ON EASE OF DOING BUSINESS

Steps are being taken to facilitate ease compliance of regulatory norms and to ease of doing business.

In this connection, arrangements are being made to register all the pet shops online with the Tamil Nadu Animal Welfare Board. This would save time and improve the ease of registration.

Efforts are being made to develop a digital management system for veterinary care and to bring the veterinary services, scheme activities of the Department into a single window system and to improve, integrate and provide better veterinary services. This will ensure that the information about veterinary treatment management, veterinary surgeons, field staff, office staff availability, stock position and availability of medicines at veterinary institutions, treatment of animals at farmer's doorstep, details of scheme activities of State and Union Governments, veterinary health camps, various vaccination camps, Global Positioning System (GPS) Location notification and other tasks such as date and time forecasts are easily accessible to the farmers.

It is also recommended to remove the following outdated laws in order to facilitate operations in the Department:

1. Acts recommended for Repeal which comes under the Prevention and control of infectious and contagious disease in animals (PCICD) Act, 2009 (Central Act of 27 of 2009) and came into force in the State from 24.4.2009.
    - Tamil Nadu Cattle Disease Act, 1866(Tamil Nadu Act ,XI 1866)
    - Tamil Nadu Rinderpest Act, 1940(Tamil Nadu Act ,XIX 1940)
    - Tamil Nadu Cattle Disease (Amendment Act) Act, 1963 (Tamil Nadu Act ,29 of 1963)
    - Tamil Nadu Rinderpest (Amendment Act) Act, 1963(Tamil Nadu Act ,14 of 1964)
    - The Glanders and Farcy Act,1899, Central Act 13 of 1899
    - The Glanders and Farcy (Tamil Nadu Amendment Act) Act,1965, (Tamil Nadu Amendment Act 36 of 1965)

2. State Law Commission has recommended to repeal the following Acts
    - Tamil Nadu Registration of Veterinary Practitioners Act,1957 (Tamil Nadu Act, XXI of 1957)
    - Tamil Nadu Registration of Veterinary Practitioners Amendment Act,1993

    Action will be taken by the Government to repeal the above Acts.

3. Tamil Nadu Livestock Improvement Act, 1940 will be subsumed with Bovine Breeding Act, 2019.

18. TAMIL NADU LIVESTOCK DEVELOPMENT AGENCY (TNLDA)

Cattle and buffalo breeding is a basic essential activity for increasing the milk production and productivity of the bovines. The Tamil Nadu Livestock Development Agency was established in 2003 and is implementing Cattle and Buffalo breeding programmes in the State.

1. Objectives of the Agency

The Primary Objective of the Agency is to bring all the breedable female cattle and buffaloes under defined breeding and to increase the milk production and productivity of the animals.

2. Activities

- The strengthening of Artificial Insemination centres, the strengthening of Semen Storage and Distribution Centres and strengthening of Semen Production Stations through procurement and supply of Liquid Nitrogen

containers, frozen semen storage and transport containers, equipment and other inputs.

- Facilitating the availability of High Genetic Merit bulls for frozen semen production to increase the productivity of the bovines.
- Facilitating the implementation of Embryo Transfer (ET) programme to conserve and produce good quality indigenous cattle.
- Implementing Artificial Insemination programme, with High Genetic Merit bulls' semen at the farmer's doorstep for improving the coverage of breedable female cattle and buffaloes.
- Implementing Livestock Insurance Scheme for disaster relief and Risk Management.
- Procurement of inputs under the various schemes of the Department of Animal Husbandry.

3. Activities implemented

3.1 Strengthening of frozen semen production stations

Strengthening of the Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur District, the District Livestock Farm, Hosur, Krishnagiri District and District Livestock Farm, Ooty, The Nilgiris District was taken up at an estimated cost of Rs.1.61 crore for procurement and supply of autoclaves, water purification systems, incubators, dilutors for photometers to all the three farms and for procurement and supply of Integrated Straw Filling, Sealing and Printing Machine to Exotic Cattle Breeding Farm, Eachenkottai. Repairs to the laboratory and construction of workers amenities room has been taken up at District Livestock Farm, Ooty.

3.2 Facilitating the availability of High Genetic Merit bulls for the Semen Production Stations

Five Crossbred Holstein Friesian, 3 Sahiwal and 14 Crossbred Jersey High Genetic Merit bulls are made available to the District Livestock Farm, Ooty, 5 Jersey and 5 Murrah Buffalo High Genetic Merit bulls are made available to the Exotic Cattle Breeding Farm, Eachenkottai and one Sahiwal High Genetic Merit Bull is made available to the District Livestock Farm, Hosur.

3.3 Strengthening of semen storage and distribution centres

The strengthening of frozen semen and liquid nitrogen storage and distribution system was taken up at a cost of Rs 2.50 crore, through the supply of 120 frozen semen containers of 47 litres capacity, 800 liquid nitrogen storage containers of 50 litres capacity and other items. Steps have been taken to install Bulk Liquid Nitrogen Storage Silos of 3,000 litres at 5 locations.

3.4 Strengthening Artificial Insemination centres

Artificial Insemination Kits and frozen semen containers of 0.5 litres, 3-4 litres, and 30-35 litres were provided to 1600 Artificial Insemination centres at a cost of Rs. 4.00 crore to provide quality Artificial Insemination services.

3.5 Embryo transfer Technology

An *In vitro* Fertilisation and Embryo Transfer Technology programme has been started at a cost of Rs. 4.55 crore at District Livestock Farm Hosur, Krishnagiri District. Under the programme, 84 genetically superior bulls (Sindhi-34, Kangeyam-20, Umbalacheri-10, Pulikkulam-10, and Bargur-10) and 85 cows (Sindhi-35, Kangeyam-20, Umbalacherry-10, Pulikkulam-10, and Bargur-10) are targeted to be produced over a period of three years. Establishment of a laboratory to take up *In vitro* Fertilisation is in progress. For Embryo Transfer Technology, 23

Kangeyam, one Bargur and 2 Pulikulam milk recorded cows have been selected and procured. A total of 487 embryos (Red sindhi-444, Kangeyam-34, Bargur-1, and Pulikulum-8) have been collected from 23 donors (Red sindhi-8, Kangeyam-12, Bargur-1, and Pulikulum-2), 330 embryos (Red sindhi-287, Kangeyam-34, Bargur-1, and Pulikulum-8) have been transferred and 157 embryos have been frozen and stored. A total of 34 calf births (Red sindhi-25, Kangeyam-6, and Pulikulum-3) have been reported.

An Embryo Transfer programme is implemented through the Veterinary College and Research Institute, Namakkal of TANUVAS to produce 105 Kangeyam and 55 Bargur cattle calves with a total outlay of Rs. 2.51 crore. Under the programme, 184 embryos (Kangeyam-134 and bargur-50) have been collected from 17 donor cows (Kangeyam-12 and Bargur-5), 86 embryos (Kangeyam-66 and Bargur-20) have

been transferred, 33 embryos have been stored and 4 calf births (Bargur-1 and Kangeyam-3) have been reported.

3.6 Conservation of Indigenous breeds

The Bargur Cattle Research Centre has been established through TANUVAS at Anthiyur, Erode District under the Conservation of Indigenous Breeds Program with an allocation of Rs. 5.17 crore. The project was planned for a period of five years and the purchase of Bargur heifer calves, fencing, land preparation, setting up of irrigation facilities and purchase of equipment have been done. The Administrative Office and the cattle farm have been established at Thurusanampalayam and the fodder is being produced in Sankarapalayam and Thattakkarai villages. A total of 126 Bargur cows (113 cows / calves and 13 bulls / calves) are maintained at this Research Centre.

3.7 Implementing Artificial Insemination programme, with High Genetic Merit bulls semen at the farmers' doorstep for improving the coverage of breedable female cattle and buffaloes

A Nationwide Artificial Insemination Programme is being implemented with the objective of providing doorstep Artificial Insemination service to farmers in districts where there is less than 50% Artificial Insemination coverage to produce quality calves, increase milk production and the income of the farmers. The scheme is being implemented in 13 districts namely Thiruvannamalai, Virudhunagar, Villupuram, Chennai, Cuddalore, Kanchipuram, Nagapattinam, Pudukottai, Ramanathapuram, Sivagangai, Salem, The Nilgiris and Tiruvallur.

The second phase of the scheme was implemented in the same 13 districts with an allocation of Rs. 11.68 crore for Artificial Insemination of 6.50 lakh cattle during the period

from 01.08.2020 to 31.07.2021. Under this scheme, a total of 7.64 lakh Artificial Insemination for cattle have been done, and 81,925 calf births have been reported.

The third phase of the scheme is being implemented in the same 13 districts during the period from August 2021 to May 2022 with a financial sanction of Rs.49.47 crore to cover 13.95 lakh cattle. Under this scheme, a total of 5.42 lakh cattle have been artificially inseminated, so far.

3.8 National Livestock Mission - Livestock Insurance Scheme for disaster relief and Risk Management.

The Livestock Insurance Scheme under the National Livestock Mission was implemented in all the districts through the Department of Animal Husbandry and the Tamil Nadu Co-operative Milk Producers Federation with a target to insure 2.50 lakh cattle units (cow,

buffalo, sheep, goat and pig) at a cost of Rs. 13.08 crore and 2.50 lakh cattle units have been insured so far.

3.9. Strengthening of Operation Theatres in Veterinary Hospitals

Surgical instruments and equipment are being procured and supplied to Operation Theatres in 32 Veterinary Hospitals.

19. THE WAY FORWARD

Animal husbandry is a sustainable income and employment generating activity that provides livelihood support to a majority of rural households, especially the landless and marginal farmers. Since it is a labour-intensive avocation that provides continuous employment and has the potential to absorb surplus labour, the growth in this sector is seen as more pro-poor.

It needs special mention that livestock sector has been maintaining positive growth rate, consistently, over the past 34 years. As many

pockets/clusters in the State largely rely on this sector as one of the major sources of income, it is imperative to reduce the yield gap against demand and to increase the production potentials so as to achieve the goal of doubling farmers' income by 2022.

Proposed Policy Initiatives

Major challenges of animal husbandry sector are breed improvement while preserving diverse genetic resources, shortage of feed and fodder, effective control of animal diseases and dissemination of technology, skills and quality services to farmers for improving productivity, which need to be addressed on priority basis. Further, improving the access of small livestock holders to efficient markets is necessary for fast tracking growth of the livestock sector.

A multi-pronged approach that addresses all the challenges of this sector shall be continued through the following policy initiatives:

1. **Investing for better lives through livestock:** Identification of assetless rural poor women and make them owners of income generating livestock assets and ensure their economic improvement.

2. **Feed and fodder supply:** The feed and fodder resources play prominent role in profitable livestock farming as it constitutes the major share (around 65%) of livestock production. In view of its important role, encourage farmers to take up the fodder production as a venture by providing necessary support, proven inputs and subsidies.

3. **Expanding commercial and backyard poultry production systems:** Looking forward, the Indian poultry market is expected to grow at a CAGR of 15.2% during 2021-2026. Providing cheap and subsidized inputs, ensuring complete health coverage to

birds in backyard sector would accelerate backyard poultry and aid in poverty alleviation and nutritional security. While sustainable supply of feed ingredients (backward linkage) and substantial improvement in value chain (forward linkage), besides mitigating emerging and re-emerging diseases would favour commercial poultry production.

4. **Improving animal health care delivery system**: Productive potential of animals depends crucially on the animal health care system. The quality of livestock support services, disease surveillance, control, diagnosis and reporting continue to be a crucial element for sustaining the success achieved, as the composition of animal population has changed vividly, and the cattle population is skewed towards crossbreds. Hence, it becomes essential to

revitalise and improve the animal health and extension support systems and reform public service delivery systems to become more efficient and responsive. In this context, it is also important to invest in a one-health approach for Zoonoses prevention and control.

5. **Improving animal breeding infrastructure:** Availability of Infrastructure facilities like breeding farms, semen production centres, AI centres and veterinary institutions play a very important role in development and the growth in Animal Husbandry sector. Breeding farm network is key for development of indigenous breeds, and undertaking cross breeding programme. Such breeding farms would ensure supply of good quality milch animals or other livestock to the society. Strengthening frozen semen stations with high genetic merit bulls and

necessary infrastructure, adopting cutting edge technologies such as Embryo Transfer, *In vitro* fertilisation etc. would address the requirement of frozen semen straws and the challenges in AI programme.

6. **Investing in Human Resources development and R&D for sustainability:** Build capacity of professionals to support the progressive changes the sector needs; invest in hands-on and knowledge-based; gear-up R&D including more partnerships to reduce the knowledge gap to deliver enhanced services and support to farmers. Updating and strengthening the laboratory infrastructure to global standards by establishing GMP compliant vaccine production laboratories are to be taken up on priority.

7. **Maintaining ecology, environment and wildlife:** The normal functioning of the biosphere depends on endless interaction among animals, plants and microorganisms. Wildlife has occupied a special place of veneration and preservation in our culture. Wild animals face a constant barrage of external stresses or threats that challenge their ability to survive and reproduce. Besides, depleting forest and grassland cover, expanding animal and human populations and with the spectre of urbanization and diminishing resources would face human-animal conflicts of an unprecedented scale and magnitude. Training and capacity building of veterinarians in addressing human-animal conflicts, and establishing a nodal centre would cater to the needs.

In order to support above policy contemplations, the Animal Husbandry Department envisions the following specific activities:

1. **Improving animal productivity** through supplementing micro nutrients (mineral mixture) and extending interventions in the reproductive health management.

2. **Fostering fodder production** through supply of inputs

3. **Conserving indigenous livestock and poultry breeds** through *in-situ and ex-situ* conservations and selective breeding.

4. **Collaborating with R & D institutions** such as TANUVAS and TNAU to address the field problems and to improve the animal productivity will be taken up.

5. **Transferring proven technologies** with the aid of appropriate ICT tools.
6. **Managing risks of animal loss** through Livestock Insurance coverage**.**
7. **Ensuring animal welfare** as provided under the Prevention of Cruelty to Animals Act, 1960 and all its amendments, and as enshrined under Article 51(A)(g) of the Constitution of India.
8. **Disease surveillance and reporting** will be implemented as per Standard Operating Protocols (SOPs).
9. **Improving the investments in livestock sector** through Public – Private Partnership
10. **Creating Farmer Producers' Organisation** (FPO) for small ruminant production.
11. **Establishing meat value chain in rural areas** which include establishing rural

slaughter houses, establishment of cold storage facilities to store meat, cost–effective vehicles for refrigerated transport of carcasses and/or meat etc.

12. **Establishing nodal centre** to address human-wild animal conflict.

13. **Offering Skill and Entrepreneurship Development** Programmes for stakeholders.

14. **Creating new veterinary institutions and upgrading** the existing and strengthening mobile veterinary services system.

20. TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY (TANUVAS)

Tamil Nadu has been a pioneering state in providing quality health care to both humans and animals. In 1989, Hon'ble Kalaignar Dr. M. Karunanidhi, the Champion of Farmers & Public Welfare and the then Chief Minister of Tamil Nadu established Asia's First Veterinary University to provide advanced medical care to animals. TANUVAS has been a forerunner in veterinary clinical sciences and has continued to be a leader in Veterinary Education and Research in the country with the following objectives:

- To impart education in different branches of Veterinary and Animal Sciences as the university may determine;
- To further the advancement of learning and prosecution of research in Veterinary and Animal Sciences; and

- To undertake the extension of such sciences to the rural people in co-operation with the Government departments concerned

20.1 Units of TANUVAS

20.1.1 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.	Veterinary College and Research Institute, Theni	40
7.	Veterinary College and Research Institute, Udumalpet, Tiruppur.	40

Sl. No.	Colleges	Admission Strength
8.	College of Food and Dairy Technology, Koduveli, Tiruvallur.	60
9.	College of Poultry Production and Management, Hosur	40
	Total	**580**

20.1.2 Peripheral Research Stations, Laboratories and Centres of TANUVAS

Sl. No.	District	Research Stations / Laboratories / Centres
1.	Chennai	➢ Poultry Research Station, Madhavaram ➢ Livestock Farm Complex, Madhavaram ➢ Central University Laboratory, Madhavaram ➢ Viral Vaccine Research Centre,

Sl. No.	District	Research Stations / Laboratories / Centres
		Madhavaram ➢ Bacterial Vaccine Research Centre, Madhavaram ➢ Zoonoses Research Laboratory, Madhavaram ➢ Laboratory Animal Medicine, Madhavaram ➢ Pharmacovigilance Laboratory for Animal Feed and Food Safety, Madhavaram ➢ Translational Research Platform for Veterinary Biologicals, Madhavaram ➢ Biosafety Level III Laboratory, Madhavaram ➢ Centralised Clinical

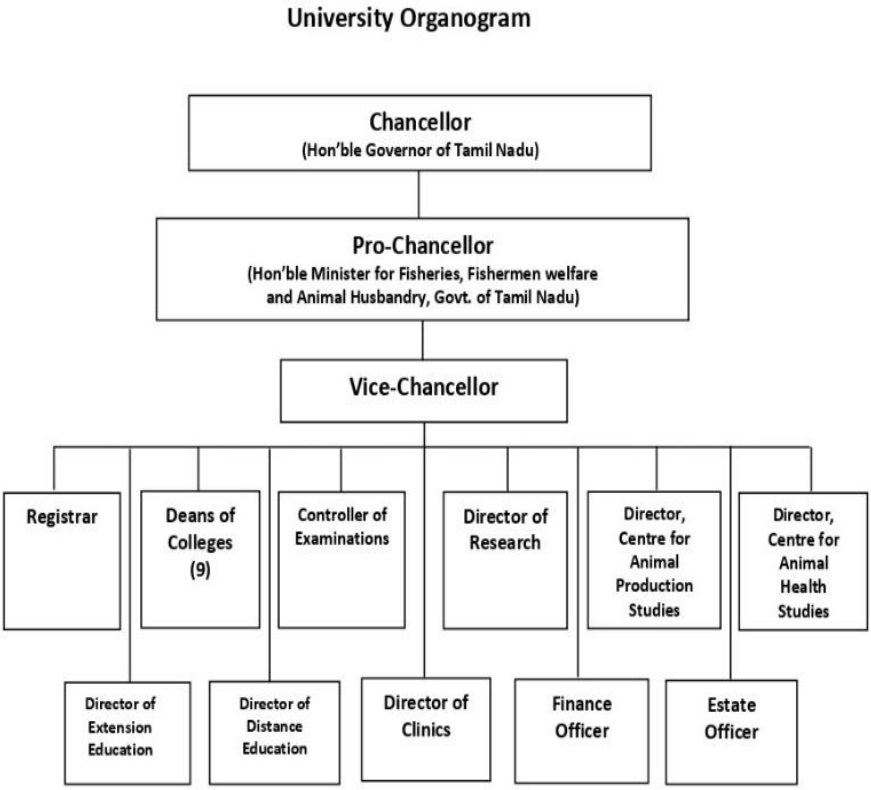
Sl. No.	District	Research Stations / Laboratories / Centres
		Laboratory, Vepery ➢ Centre for Stem Cell Research and Regenerative Medicine, Vepery
2.	Chengalpattu	➢ Post graduate Research Institute in Animal Sciences, Kattupakkam ➢ Institute of Animal Nutrition, Kattupakkam ➢ Central Feed Technology Unit, Kattupakkam ➢ Krishi Vigyan Kendra, Kattupakkam ➢ Veterinary University Training and Research Centre, Melmaruvathur
3.	Kancheepuram	➢ Farmers Training Centre

Sl. No.	District	Research Stations / Laboratories / Centres
4.	Dharmapuri	➢ Alambadi Cattle Research Station ➢ Veterinary University Training and Research Centre
5.	Villupuram	➢ Veterinary University Training and Research Centre ➢ KrishiVigyan Kendra
6.	Salem	➢ Mecheri Sheep Research Station, Pottaneri ➢ Veterinary University Training and Research Centre ➢ Avian Disease Laboratory, Thalaivasal
7.	Erode	➢ Bargur Cattle Research Station, Bargur ➢ Kangayam Cattle Research Station,

Sl. No.	District	Research Stations / Laboratories / Centres
		Erode ➢ Veterinary University Training and Research Centre
8.	Nilgiris	➢ Sheep Breeding Research Station, Sandynallah
9.	Namakkal	➢ Poultry Disease Diagnostic and Surveillance Laboratory ➢ Animal Feed Analytical and Quality Assurance Laboratory ➢ Ethnoveterinary Herbal Research Centre for Poultry ➢ KrishiVigyan Kendra
10.	Sivagangai	➢ Pulikulam Cattle Research Station, Manamadurai ➢ KrishiVigyan Kendra, Kundrakudi

Sl. No.	District	Research Stations / Laboratories / Centres
11.	Pudukottai	➢ Regional Research and Education Centre
12.	Madurai	➢ Veterinary University Training and Diagnostic Centre
13.	Theni	➢ Farmers Training Centre
14.	Tiruvarur	
15.	Ramanathapuram	➢ Veterinary University Training and Research Centres
16.	Kanyakumari	
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	

20.1.3 Organogram



20.2 Education

The various degree and diploma courses offered by the University with admission strength are detailed below:

Degree and diploma Courses	Admission strength
Bachelor of Veterinary Science and Animal Husbandry	480
Bachelor of Technology (Food Technology)	40
Bachelor of Technology (Poultry Technology)	40
Bachelor of Technology (Dairy Technology)	20
Master of Veterinary Science	166
Master of Technology (Food Technology)	10
M. Tech. (Poultry Technology)	3
M. Tech (Dairy Technology)	3
M. Tech (Dairy Chemistry)	3
Master of Philosophy (Biotechnology)	8
Master of Science (Bioinformatics)	10

Degree and diploma Courses	Admission strength
Master of Science (Biostatistics)	3
Master of Science (Biotechnology)	10
Master of Business Administration (Food and Livestock Business Management)	10
Doctor of Philosophy (Veterinary)	100
Doctor of Philosophy (Biotechnology)	5
Doctor of Philosophy (Food Technology)	5
Post Graduate Diploma – Regular mode (6 disciplines)	42
Post Graduate Diploma – Distance mode (17 courses)	170
MBA (Food and Livestock Business Management)	10

20.3 Achievements of TANUVAS (2021)

- TANUVAS ranked **first** among the State Veterinary Universities in India and 12th among all the Agricultural Universities as per the recently released ICAR-ranking list 2020 by the Ministry of Agriculture and Farmers

Welfare, Union Government in December 2021.

- Utilizing the laboratory facilities available at Translational Research Platform for Veterinary Biologicals (TRPVB), TANUVAS launched the doorstep diagnostic service for detection of haemoprotozoan parasites in canines through M/s. Illume Gene India LLP, a start-up company and incubatee of the Veterinary Incubation Foundation @ TANUVAS.
- During the year 2021, four Patents have been obtained for the technologies developed by the faculty members of TANUVAS.
- Four Memorandum of Understanding have been signed by TANUVAS with various institutions to promote academic and research collaborations.
- Three viral vaccines namely 'Inactivated classical swine fever vaccine', 'Live attenuated classical swine fever vaccine' and

'Inactivated Porcine Circovirus 2 vaccine' developed by TANUVAS have been commercialized to M/s.Biovet Private Limited, Karnataka on 07.06.2021 through a Memorandum of Understanding.

20.4 Research

TANUVAS has a strong research base and is committed to its mandate of delivering the research outcomes in tandem with the emerging challenges. To accomplish this, University has 12 research stations and 15 research laboratories carrying out research in specific areas like animal health, animal production, veterinary biologicals, zoonoses, livestock feed analysis, disease diagnosis and surveillance, ethnoveterinary medicine, pharmacovigilance etc. A total of 28 projects to the tune of Rs.2,327.64 lakh have been sanctioned by various national and international funding agencies during the year 2021 for carrying out research activities at TANUVAS.

20.4.1 Schemes in progress

Union Government is providing impetus for conserving native breeds and in line with this agenda, the Government of Tamil Nadu has sanctioned three schemes, namely (i) "Establishment of Trichy Black Sheep Research Centre in Dharmapuri District", (ii) "Establishment of Resource Centre for Pattanam sheep" at VC&RI, Orathanadu and (iii) "Establishment of Resource Centre for indigenous Siruvidai chicken of Tamil Nadu" at Madhavaram Milk Colony, Chennai with a total budget outlay of Rs.527.94 lakh under NADP and the works are in progress.

The Government of Tamil Nadu has also sanctioned a scheme on "Establishment of Zoonoses research laboratory cum one health interface platform for the southern districts of Tamil Nadu" at VC&RI, Tirunelveli with a budget outlay of Rs. 160.65 lakh under NADP for early diagnosis of zoonotic diseases in the southern

districts of Tamil Nadu and the works are in progress.

To improve the fodder production and also to meet out the requirements of the newly improved fodder seeds for the livestock farmers at a reasonable cost, the Government of Tamil Nadu has sanctioned a scheme on "Fodder Seed Production Unit for sustainable livestock production under North Western Zone of Tamil Nadu" at VC&RI, Namakkal with a budget outlay of Rs.149.20 lakh under NADP.

In order to supply affordable farm equipment to the farming community for mechanizing their farms, the Government of Tamil Nadu has sanctioned a scheme to strengthen the existing TANUVAS University Innovation and Instrumentation Centre with a budget outlay of Rs.250 lakh under NADP and the works are in progress.

With the assistance from Government of Tamil Nadu, the production of calf kits to the tune

of Rs.400 lakh is in progress at University Innovation and Instrumentation Centre for distribution to the 12,000 beneficiaries of free milch cow scheme through the Department of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu.

20.5 Technologies

TANUVAS is developing technologies to improve the livestock and poultry health, production and other value-added livestock products. The technologies of TANUVAS ready for commercialization are Active heal, Ivermectin based "spot on", Nano Methicon Lotion, Metero zinc gel, Oral gel for canine hygiene, fibre enriched dairy products such as milk lolly, yoghurt and mozzarella cheese using tamarind seed kernel powder; functional probiotic chocobar incorporating fruit pulp and natural sweeteners; technical improvisation in the value-added meat and milk products such as Ghee mysoorpa,

Paneer cookies, Flavoured whey beverage, Channapeda, Meat Patties, Nuggets, Meat balls and Meat samosa.

During the year 2021, three viral vaccines, viz., (i) Inactivated classical swine fever vaccine, (ii) Live attenuated classical swine fever vaccine and (iii) Inactivated Porcine Circovirus 2 vaccine developed by the faculty members of TANUVAS.

20.5.1 Initiatives in the fight against Covid

- During the lock down period, a total of 189.5 MT livestock and poultry feeds were produced and supplied to Animal Husbandry department and various farms of TANUVAS.
- In association with Health Department, Government of Tamil Nadu, a total of 35 special vaccination camps for staff against COVID-19 were organized at various units of TANUVAS and administered 2,330 covid doses to combat the dreadly pandemic.

- TANUVAS and ICICI Foundation for Inclusive Growth, Tiruchirapalli jointly organized an online guest lecture on “COVID-19 Crisis health management - diagnosis of diseases and primary health care for livestock” for the benefit of farmers on 21.05.2021 at VC&RI, Orathanadu. A total of 76 farmers in and around Thanjavur were benefitted.
- A State level online Webinar and Panel Discussion for farmers on "Animal health monitoring tools and augmenting animal productivity during the COVID Pandemic-An update" was organized on 01.07.2021 and 02.07.2021 at VC&RI, Orathanadu. A total of 747 farmers and entrepreneurs participated in the programme.

20.6 Capacity building programmes

TANUVAS initiated various capacity building programmes for students and faculty members to

update their knowledge on the advancements in Veterinary, Animal and Food Sciences.

20.6.1 Initiatives for Students

- TANUVAS - Global Veterinary Large Animal Sciences Webinar Series II – 2021 was organized on 07.01.2021 and 08.01.2021 through video conferencing at MVC, Chennai benefitting 3,344 veterinary undergraduates, postgraduates, faculty members and practicing veterinarians across the world.
- National online Programme on Fitness and Self Defence for students and faculty of Veterinary and Agricultural Universities was conducted on 28.01.2021 & 29.01.2021 at VC&RI, Orathanadu benefitting 1,028 students across India.
- An online training programme on “Effective use of CAB ABSTRACTS for quality research" was organized on 23.06.2021 at MVC,

Chennai benefitting 210 research scholars and faculty members of TANUVAS.

- An online training on "Boost Your Research with Scopus Analytics" was organized at MVC, Chennai on 30.07.2021 for the benefit of 120 research scholars and faculty.
- A workshop on 'Vetpreneurship Opportunities for Students at VIF @ TANUVAS" was organized at Veterinary College and Research Institutes at Orathanadu, Tirunelveli and Namakkal on 16.11.2021, 17.11.2021 and 18.11.2021 benefitting UG and PG students.

20.6.2 Initiatives for Faculty members

- TANUVAS, in collaboration with Kerala Veterinary Animal Sciences University, organised an international virtual conference on "Promising genetic and genomic technologies – Frontiers in selection and animal improvement" for the benefit of

faculties, scientists and students on 27.01.2021 and 28.01.2021 at VC&RI, Orathanadu benefitting 362 participants.

- International webinar on "Animal Waste: Opportunities and Challenges" was organized on 12.01.2021 at VC&RI, Tirunelveli benefitting 200 academicians and students.
- Global Veterinary Reproduction Webinar on "Reproductive ultrasound and manipulative delivery per vaginum in dogs" was organized on 11.03.2021 at MVC, Chennai Campus with 805 participants.
- An International Webinar on "Diagnostic parasitology of animal parasitic diseases" was organized on 23.04.2021 at MVC, Chennai benefitting 192 participants comprising academicians, researchers, field veterinarians and research scholars globally.
- A National Webinar entitled "Innovative extension strategies for sustainable livestock

development" was organized on 29.04.2021 at MVC, Chennai benefitting 498 participants.

- Under Continuing Veterinary Education for Livestock Development, an international workshop on "Management of infertility in cattle" was organized through video conferencing on 07.05.2021 in collaboration with Commonwealth of Learning (COL), Canada and IIT, Kanpur.
- Online National Conference entitled "Implementing strategies to achieve food security and food sustainable partnership: Progress and Challenges" was organized at College of Food and Dairy Technology, Koduveli on 29.07.2021 and 30.07.2021. A total of 604 participants from various states participated in the programme.
- A webinar on "Clinical explication and management of cardio-pulmonary emergencies in dogs and cats" was organized

at MVC, Chennai on 18.08.2021. A total of 1,119 veterinarians from all over the world participated.

- A two days hands-on training was offered to field veterinarians on "Viral zoonoses" at Viral Vaccine Research Centre, Chennai on 07.10.2021 and 08.10.2021.
- An 'Orientation cum faculty development training programme' was organized at MVC, Chennai for 45 Assistant Professors of TANUVAS from 25.10.2021 to 29.10.2021.
- A five days Online Faculty Development Programme entitled "Building Sustainable and Resilient Food security and Food Processing systems" was organized at the College of Food and Dairy Technology, Koduveli, Chennai from 25.10.2021 to 29.10.2021. A total of 148 faculties from various states participated.

20.7 Clinical services

The University has an excellent network of teaching veterinary hospitals offering clinical services to the livestock and companion animals.

A total of 2,35,039 animals were treated in out-patient cases and 4,946 animals as in-patient cases during the year 2021. Referral facilities with ultrasonography, endoscopy, electrocardiography, orthopaedics, haemodialysis, ophthalmology, dermatology, canine blood bank, etc. are also available at the teaching veterinary hospitals. Computed Tomography (CT) scan facility is available at Madras Veterinary College and Veterinary College and Research Institute, Namakkal.

A training programme on "Sniffer Dog Maintenance" was conducted to Fire and Rescue Services personnel at MVC, Chennai on 02.07.2021.

20.8 Extension Activities

The University outreach activities are focused on empowering farmers, farm women, rural youth, school dropouts and self-help groups with scientific livestock and poultry farm practices for their livelihood through capacity building programmes, frontline demonstrations and on-farm trials. Dissemination of the livestock and poultry technologies developed by TANUVAS was also published through print media, electronic media and e-Extension initiatives.

During 2021, a total of 1,105 trainings benefitting 42,312 farmers, and 49,799 advisory services were given to farmers by this University through its various outreach units in the districts besides offering inputs for livestock farm activities. Extension based webinars/seminars organised for the farming community during 2021 are:

- A capacity building programme on sheep farming was conducted at Post Graduate Research Institute in Animal Sciences (PGRIAS), Kattupakkam on 30.07.2021.
- A workshop on "Ethno veterinary practices" was conducted at VC&RI, Orathanaduon 27.07.2021 and 30.07.2021 benefitting 40 farmers belonging to scheduled caste.
- "Donkey farmers meet" was organized at Krishnapuram village of Tiruchirapalli district on 27.07.2021.
- "75th Independence Day - Suthanthirathin Amutha Peruvizha" was celebrated at Krishi Vigyan Kendra, Namakkal by conducting an awareness programme on "Food and nutrition for farmers" on 26.08.2021. An exhibition showcasing value added nutritious foods from millets, milk, meat and fish was organized. This programme was webcasted benefitting 213 farmers.

- A training programme on "Integrated farming system as a tool for sustainable livelihood of farmers in Cauvery Delta Zone of Tamil Nadu" sponsored by Tamil Nadu State Land Use Research Board was organized at VC&RI, Orathanadu on 17.08.2021 and 18.08.2021, benefitting 64 farmers.
- With the assistance from Agriculture Skill Council of India (ASCI), a skill training programme for farmers and farm women was conducted on "Organic Grower" at KVK, Namakkal for 25 days.
- A farmer's seminar on "Technologies to improve health and productivity of livestock" was organised on 23.08.2021 at VC&RI, Orathanadu benefitting 100 farmers belonging to scheduled caste.
- A state level farmers' seminar on 'Status, Challenges and Opportunities in Rabbit Farming in Tamil Nadu' was organized at

PGRIAS, Kattupakkam on 29.10.2021 benefitting 62 farmers.

20.8.1 Distance Education courses

The Directorate of Distance Education is offering 17 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. The courses enrolled through distance education mode during 2021 are detailed below.

Sl. No.	Name of the course
I	**PG Diploma Courses for Veterinarians**
1	Post Graduate Diploma in Regenerative Medicine
2	Post Graduate Diploma in Small Animal Diagnostic Ultrasound

Sl. No.	Name of the course
3	Post Graduate Diploma in Bovine Infertility and its Management
4	Post Graduate Diploma in Wild Animal Disease Management
5	Post Graduate Diploma in Veterinary Clinical Laboratory
6	Post Graduate Diploma in Animal Health Economics
7	Post Graduate Diploma in Veterinary Endoscopy
8	Post Graduate Diploma in Ethno Veterinary Practices
9	Post Graduate Diploma in Advanced Reproductive Biotechnology in Animal Models
10	Post Graduate Diploma in Post-Harvest Technology and Quality Assurance of Meat and Meat Products (PGDQAMP)
11	Post Graduate Diploma in Dairy Processing and Quality Assurance (PGDDPQA)
12	Post Graduate Diploma in Feed Manufacturing Technology (PGDFMT)

Sl. No.	Name of the course
13	Post Graduate Diploma in Commercial Poultry Production and Management (PGDCPPM)
II	**Skill Development courses**
1.	Feed Mill Supervisor
2.	Livestock Farm Manager
3.	Poultry Farm Manager
4.	Hatchery Supervisor
III	**Self Employment courses**
1.	Dairy farming
2.	Sheep Farming
3.	Goat farming
4.	Fodder and Fodder Seed Production
5.	Preparation of value added dairy products
6.	Rabbit farming
7.	Pig farming
8.	Japanese Quail Farming
9.	Desi-chicken Rearing

20.9 Awards / recognitions

During the year 2021, patents have been obtained for the following four technologies developed by the faculty members of TANUVAS:

1. Biodiesel production from rendered chicken oil;
2. Multiplex PCR primers for detection of fowl oncogenic viruses;
3. An Agar Gel Immunodiffusion (AGID) test kit for serological assessment of Anthrax vaccine; and
4. A process for preparing Montanide absorbed Anthrax spore vaccine

20.10 Sustainable Development Goals - TANUVAS

The framework of the Sustainable Development Goals (SDGs) ensures social cohesion, economic prosperity and protection of the environment. Education, research and innovation are essential in sustainable development, making TANUVAS key contributor to

achieving the goals. All the transformative processes of the farm university, the TANUVAS are affirmative to achieve the SDGs either directly or indirectly, more specifically, Goal 1: No poverty; Goal 2: Zero Hunger; Goal 4: Quality Education; Goal 5: Gender equality and Goal 12: Reasonable consumption and production. The activities carried out by the University are presented in section that follows:

20.10.1 SDG Goal# 1: No poverty

Action of the University:

- In order to achieve the Goal that intends to "end poverty in all its forms everywhere", TANUVAS has been actively encouraging the farming community to venture and sustain livestock farming, so as to enrich their economic status and build resilience.
- During the year 2021-22, a total of 51,578 nos. of day old chicks, 15,567 grower chicks, 1,64,862 no. of day old Japanese

quail, 9,327 no. of grower quails. 64,159 nos. of hatching eggs have been distributed to the farmers for quality poultry production.

- As the efforts to increase the livestock productivity and production efficiency; decrease veterinary care costs; increase fertility; improve product quality and access to new markets would indirectly enable to end poverty, the research and outreach activities of TANUVAS are focused in these areas.

20.10.2 SDG Goal# 2: Zero Hunger

Action of the University:

This Goal aims to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture". Farm animals play a pivotal role in ensuring food and nutritional securities by providing food that is rich in protein and other nutrients. As the population explosion might further aggravate the pressure on the

existing limited land resources, livestock becomes an inevitable tool to combat the rising needs. Realising the importance of animal husbandry on achieving the Goal that also aims at promoting sustainable agriculture as a mean to end the hunger, TANUVAS promotes animal husbandry through its educational, research and outreach activities. The university recognises that the control, elimination and eradication of animal diseases have a positive impact on animal health by improving production and productivity levels of eggs, milk and meat, and contribute to food security. The promotion of prudent and responsible use of antimicrobial agents in livestock not only protects consumers' health but also facilitates sustainable agriculture. Consequently, TANUVAS advocates judicial use of antimicrobials and explores the possibilities of using ethno-veterinary medicines as an alternative, which would otherwise mean promoting organic farming too. As conservation

and propagation of native germplasms in their tract would facilitate for sustainability in the long run, TANUVAS in coordination with the Government has established centres for conserving the native breeds. During 2021-22, TANUVAS has started implementing the following schemes for conserving native breeds of animals and sustainable livestock production:

- Establishment of Tiruchy Black Sheep Research Centre at Dharmapuri District
- Establishment of Resource Centre for Pattanam sheep at VC&RI, Orathanadu
- Establishment of Resource Centre for indigenous Siruvidai chicken of Tamil Nadu at Madhavaram Milk Colony, Chennai
- Establishment of Fodder Seed Production Unit for sustainable livestock production under North Western Zone of Tamil Nadu at VC&RI, Namakkal

20.10.3 SDG Goal# 4: Quality Education

Action of the University:

As the Goal envisages to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all", TANUVAS provides opportunities to acquire knowledge and expertise in the fields of veterinary, animal and food sciences. Beside regular campus education, the University, also, promotes and instils skills on the common people through its off-campus programmes and services that reaches the community at grass root level. University offers a number of degree and diploma programmes, the admission to which is based on the inclusive and equitable policies and norms promulgated by the Government. TANUVAS offers Continuing Veterinary Education (CVE) programmes for updating the knowledge and skill levels of the graduates delivering services in the field. In order to imbibe quality education to its students and the

farming community and entrepreneurs, TANUVAS is implementing the following:

- Earn while you learn - Experiential Learning
- 15 Skill development and 10 self-employment programmes on various livestock enterprises/ activities

20.10.4 SDG Goal# 5: Gender equality

Action of the University:

This Goal aims to "achieve gender equality and empower all women and girls". The university recognises that the gender equality critical to its success and crucial for society as a whole. TANUVAS is committed to working towards this goal through its governance, teaching and learning, community engagement, partnerships and research. Also, understanding the unequivocal role of women in animal husbandry sector, TANUVAS organises a number of programmes and takes initiatives to empower women through its network of outreach centres spread across the State.

- During 2021-22, a total 1102 On and Off campus training programmes were conducted benefiting 26,615 women.

20.10.5 SDG Goal# 12: Reasonable consumption and production

Action of the University:

This Goal emphasises to "ensure sustainable consumption and production patterns". The university is committed to protect environment and follow sustainable practices through the minimisation of energy and water use, responsible management and minimisation of wastes. Studies have shown that one third of all food produced is lost or wasted between field and work. Realising this, University has taken up a number of research works to limit the wastages and losses along the supply chain that can contribute to improved efficiency and sustainability. The All India Co-ordinated Research Project on Post Harvest Engineering Technology in Meat Science

is in operation at TANUVAS. During the year 2021-22, the following works were carried out:

- Development of meat processing equipment to improve the standards of meat processing in India and thereby improve the returns in the meat value chain.
- Development of Functional Meat Products to make use of low valued cuts of meat.
- Development of pet food, pet treats, Japanese quail feed and tertiary products including collagen chondroitin sulphate scaffolds and keratin biofilms using abattoir by–products, to ensure valorisation of slaughter house by-products.

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) at Madhavaram in the year 2019 with the financial support of Entrepreneurship Development and Innovation

Institute (EDII), Chennai, a Government of Tamil Nadu undertaking. The salient achievements of VIF during 2021 are:

- Six start-ups incubated at VIF@TANUVAS during the year 2021 to develop novel products/technologies.
- As a new initiative, VIF@TANUVAS in collaboration with the Directorate of Extension Education (DEE), TANUVAS has created Progressive Livestock Farmers Network (PLFN) to identify and enroll 100 progressive farmers as members to help in validating new products / technologies developed by the incubatees of VIF@TANUVAS.
- Entrepreneurship awareness was created among final year Under-graduate students of TANUVAS by VIF@TANUVAS.
- Four start-ups incubated at VIF@TANUVAS received the Innovation Voucher Program (IVP). Voucher-A seed fund support and one

start-up received the IVP Voucher-B seed fund support from Entrepreneurship Development and Innovation Institute of Tamil Nadu Government.

- The innovative products and services developed by the start-ups such as nano-formulation based teat dip for prevention of mastitis, animal sampling kit, animal identification technologies, diagnosis of canine protozoan diseases are facilitated for technical support, validation, etc. by VIF@TANUVAS.

20.12 Industry-Institute Linkage

The activities of TANUVAS ensuring research and academic collaboration with industries/ institutes during 2021 are furnished below.

- MoU was executed with M/s Biovet Private Limited, Karnataka on 07.06.2021 towards transferring the viral vaccines developed by TANUVAS.

- A tripartite MoU among TANUVAS, Tirumala Milk Products Private Limited, Chennai and ASSIST Development Solutions, Chennai has been executed on 03.09.2021 to accelerate the education of dairy farmers in sustainable dairy management practices through trainings and awareness programmes.
- Under ICAR funded Institutional Development Plan, a workshop on "Identifying and prioritizing veterinarians' day one skills requirement for industrial needs" was organized at MVC, Chennai on 18.02.2021 and at VC&RI, Namakkal on 12.03.2021 benefitting 117 industrial participants and 125 UG/PG students.
- In collaboration with Thermo Fisher Scientific Company, a training programme on "Next Generation Sequencing" was conducted at TRPVBfrom 12.08.2021 to 14.08.2021 benefitting faculty members, research scholars and students of TANUVAS.

- In coordination with ICICI Foundation for Inclusive Growth, Tiruchirapalli Region, TANUVAS organized a State level entrepreneurs online workshop and panel discussion on "Livestock products preparation - Workshop for small scale and emerging entrepreneurs" on 24.08.2021 and 25.08.2021 at VC&RI, Orathanadu benefitting 847 participants.
- MoU has been signed between TANUVAS and Tamil Nadu Agricultural University, Coimbatore on 01.12.2021 for research on feed compounding with Moringa leaves.

20.13 Priorities for 2022-23

The rural livelihood dependency on livestock sector is ever increasing, while the sector's sustainability could be ensured through advancing animal care; accelerating buffalo population; enhancing animal productivity; improving rural livelihood; maintaining ecological balances;

improving animal genetic potentiality; advocating organic farming. Besides engaging youth and empowering women in animal husbandry, developing veterinary human resources, imparting entrepreneurship skills and prioritising livestock research through land to lab approach would nurture the livestock sector.

TANUVAS, the University par excellence has to progress beyond the present by its collaboration and tie-ups that promote not only livestock sector, but also the well-being of human through One Health approach. This approach is a collaborative effort of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and the environment, which would help in controlling notifiable zoonotic diseases like Rabies, Brucellosis, Leptospirosis, Avian Influenza, Anthrax, etc.

Considering the above, TANUVAS envisions the following activities:

- Integrated Veterinary Hospital Information Systems for advancing animal care in TANUVAS hospitals
- Strengthening One Health approach comprehensively in coordination with the Directorate of Public Health and Preventive Medicine, and the State Nodal Centre for Occupational Health and Safety of unorganised workers of the Directorate of Medical and Rural Health Services through MoU.
- Addressing infertility in Buffaloes in Tamil Nadu through Assisted Reproductive Techniques
- Enhancement of livestock productivity through nutritional supplements
- Conserve the native breeds of animals and poultry of Tamil Nadu
- International tie-ups in the area of Academic and Research programmes

- 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
- Continuing Veterinary Education programme for Veterinary Professionals
- Establishing industry-university collaborative research consortium to facilitate industry driven research and also promote start-ups in livestock sector
- Developing climatic stress amelioration strategies / techniques for livestock
- In addition to the prevailing "Lab to Land" approach, University envisages to address the stakeholders' issues through the "Land to Lab" approach by prioritizing the problems encountered by the farmers.

21. BUDGET ESTIMATE FOR THE YEAR 2022-2023

A sum of Rs.1,314.84 crore has been provided in the budget for 2022-2023. Out of this, projected Revenue Expenditure is Rs.1,192.11 crore, Capital Expenditure is Rs.122.34 crore and Loans of Rs.0.40 crore.

22. CONCLUSION

The Government is committed to improve economy of the rural poor through augmenting milk, egg and meat production in the State. Under the dynamic leadership of the Hon'ble Chief Minister of Tamil Nadu, this Department will take every effort to ensure that the above commitment is achieved.

The Department of Animal Husbandry has focused its vision to increase the production of livestock products by improving the genetic potential of livestock population, delivering adequate AI and healthcare services, reducing

incidences of infertility, improving the immune status of animals, increasing fodder production and enhancing livestock productivity.

TANUVAS with its advanced learning, research and extension infrastructure, continues to excel in veterinary, animal and food sciences education, endeavour in pioneering research and engage in outreach programmes.

The Animal Husbandry Department has announced a number of new path-breaking Schemes. The Department will improve the competency of livestock producers, inclusively and sustainably. Ultimately, the livestock and poultry production will match the rising demand, besides ensuring rural livelihood and food security.

ANITHA R. RADHAKRISHNAN

Hon'ble Minister for Fisheries -

Fishermen Welfare and Animal Husbandry

On 17.11.2021 Hon'ble Chief Minister of Tamil Nadu gave orders of appointment on compassionate grounds to 23 candidates

Hon'ble Minister for Fisheries, Fishermen Welfare and Animal Husbandry presented a memorandum regarding Animal Husbandry issues to the Hon'ble Union Minister for Fisheries, Animal Husbandry and Dairying on 01.04.2022.

22nd Convocation of Tamil Nadu Veterinary and Animal Sciences University - 30.03.2022

Hon'ble Minister for Fisheries, Fishermen Welfare and Animal Husbandry, inaugurated new farm buildings at Veterinary College and Research Institute, Namakkal on 08.03.2022.

Hon'ble Minister for Fisheries, Fishermen Welfare and Animal Husbandry, inaugurated the Livestock and Poultry Feed Technology Centre at Veterinary College and Research Institute, Tirunelveli and distributed inputs to the beneficiaries on 15.03.2022

Hon'ble Minister for Fisheries – Fishermen Welfare and Animal Husbandry participated and distributed benefits in the Specialized Veterinary Health Care and Awareness Camp held on 23.10.2021 at Mukkani Village in Thoothukudi District.

Hon'ble Minister for Fisheries, Fishermen Welfare and Animal Husbandry distributed priceless goats to the beneficiaries in Pudukkottai district on 09.04.2022 in the presence of Hon'ble Minister for Law, Hon'ble Minister for Environment-Climate Change and Youth Welfare & Sports Development

EXOTIC BREEDS OF CATTLE

HOLSTEIN FRIESIAN

JERSEY

NATIVE BREEDS OF CATTLE

ALAMBADI

KANGEYAM

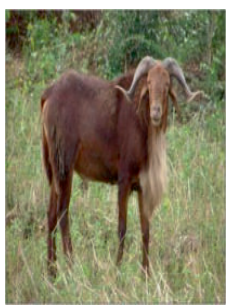
BARGUR

PULIKULAM

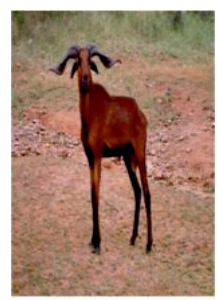
UMBALACHERY

TODA BUFFALO

NATIVE BREEDS OF SHEEP



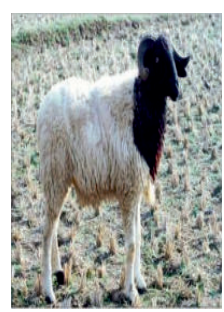
MADRAS RED



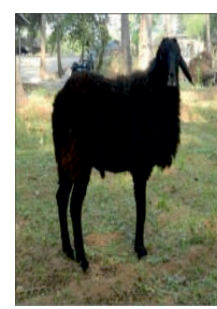
KILAKARISAL

MECHERI

CHEVAADU

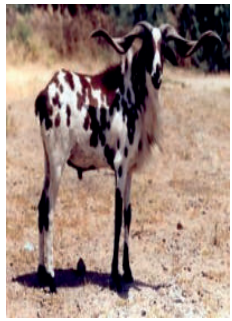


COIMBATORE

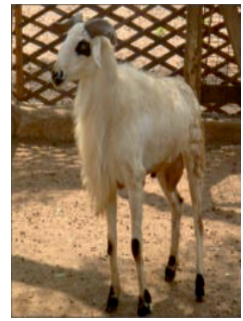


TRICHY BLACK

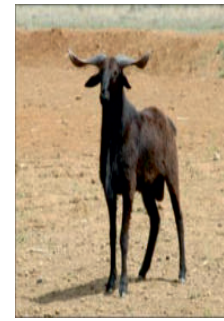
NATIVE BREEDS OF SHEEP



VEMBUR



RAMNAD WHITE



KATCHAIKATTY

NATIVE BREEDS OF GOAT

KANNI AADU

SALEM BLACK

KODI AADU

NATIVE BREEDS OF DOG

RAJAPALAYAM

CHIPPIPARAI

KANNI

KOMBAI

POULTRY BREEDS RAISED IN TAMILNADU

ASEEL

KADAKNATH

Government Central Press, Chennai-1.