



**ANIMAL HUSBANDRY, DAIRYING,
FISHERIES AND FISHERMEN WELFARE
DEPARTMENT**

ANIMAL HUSBANDRY

**POLICY NOTE
2023 - 2024**

DEMAND No. 6

Thiru. ANITHA R. RADHAKRISHNAN

Minister for Fisheries – Fishermen Welfare
and Animal Husbandry



Government of Tamil Nadu
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ANIMAL HUSBANDRY DEPARTMENT

POLICY NOTE 2023-24

1. INTRODUCTION

Animal husbandry is an integral component of agriculture supporting livelihood of more than two-thirds of the rural population. It is one of the rapidly expanding sectors in the State, playing a significant role in rural economy by providing gainful employment to a large number of small, marginal farmers and landless agricultural labourers and raising their economic status.

Livestock is a natural capital that can act as a living bank with offspring as interest, and an insurance against income shocks in times of crop failure and natural calamities. Moreover, it provides nutrient-rich food products such as milk, meat, egg, draught power, dung as organic manure and domestic fuel, hides and skin, and is

a regular source of cash income for rural households. In the recent decade, demand for various livestock based products has increased significantly due to increase in per-capita income, urbanization, changing taste and preference and increased awareness about food nutrition. Livestock sector is also considered as a potential sector for export earnings.

Various veterinary institutions spread over the State provide veterinary services and play a major role in increasing the production potentialities of the livestock and poultry in the State. Upgradation of local stock of cattle and buffaloes by Artificial Insemination using exotic and crossbred frozen semen straws through 3,819 Artificial Insemination Centres is being undertaken effectively to increase the crossbred population. This has resulted in upgrading the non-descript cattle population and the milk production is steadily rising. Apart from this,

various beneficiary oriented schemes are also being implemented to supplement the income of rural people.

Table 1: PRODUCTION DETAILS OF MAJOR LIVESTOCK PRODUCTS

Subject	Category	2011-12	2021-22
Milk (LMT)	Exotic and Crossbred cow	54.12	91.28
	Indigenous and ND cow	7.77	6.22
	Buffalo	7.79	2.40
	Goat	Not Estimated	1.17
	Total	69.68	101.07
Egg (Million Nos.)	Desi Fowls	401.90	711.12
	Improved Fowls	11449.90	20118.80
	Duck	Not Estimated	3.66
	Total	11851.80	20833.59
Meat (LMT)	Cattle	0.27	0.52
	Buffalo	0.07	0.03
	Sheep	0.26	0.68
	Goat	0.38	0.70
	Pig	0.12	0.04
	Poultry	3.50	4.88
	Total	4.60	6.86

Source: Basic Animal Husbandry statistics -2022, GoI publication

Table 2: PER CAPITA AVAILABILITY OF MAJOR LIVESTOCK PRODUCTS

Commodity	2011-12		2021-22	
	Per capita Availability	% share in India	Per capita Availability	% share in India
Milk	265 gms/day	5.44	362 gms/day	4.57
Egg	164 Nos./year	17.84	273 Nos./year	16.08
Meat	6.381 kgs./year	8.35	8.977 kgs./year	7.38

During 2021-22, the Gross State Value Added in Livestock Sector was Rs.1,06,987 crore at current prices (Advance Estimate). Livestock sector contributes about 5.63% to Tamil Nadu's Gross State Value Added (GSVA) and 43.70% to agriculture and allied activities.

2. LIVESTOCK WEALTH IN TAMIL NADU

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

Tamil Nadu has 245 lakh of livestock and 1207.80 lakh poultry (2019 census).

Table 3: Livestock and Poultry Population as per the 20th Livestock Census(2019)

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

As per the 20th Quinquennial Livestock Census, Tamil Nadu ranks 1st in 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 as follows:

- **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)
- **Toda buffaloes** (The Nilgiris District)
- **Bargur buffaloes** (Erode District)

Apart from these native cattle breeds, high milk yielding crossbred of Jersey (in plains) and crossbred of Holstein Friesian (in hills) are being reared extensively by farmers.

Similarly, the State possesses native breeds of sheep as follows:

- **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)
- **Nilgiri** (The Nilgiris district)
- **Sevadu** (Tirunelveli district)
- **Kachaikatti karupu** (Madurai district)
- **Mecheri** (Salem, Karur, Dharmapuri Tiruppur and Erode districts)

To improve the genetic characteristics of the Mecheri breed a scheme named Genetic improvement of Mecheri breed is being carried out in Salem, Karur, Dharmapuri and Tiruppur districts.

The State possesses native goat breeds as follows:

- **Kanni Adu** (Virudhunagar, Thoothukudi and Tirunelveli districts),
- **Kodi Adu** (Thoothukudi and Tirunelveli districts)
- **Salem Black** (Salem, Dharmapuri and Krishnagiri districts)

3. 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
- ❖ Implementing 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

4. 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.
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	<ul style="list-style-type: none"> ➤ 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.

	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ 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.

<p>2013-2014</p>	<ul style="list-style-type: none"> ➤ 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
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	<p>Ruminants and Rabbits" (IDSRR) Scheme.</p> <ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ 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.

	<ul style="list-style-type: none"> ➤ 100 Sub-Centres were upgraded to Veterinary Dispensaries. ➤ 50 new Sub-Centres were created. ➤ 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	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ Establishment of Feed and Water Analytical Laboratory at Palladam, Tiruppur District was ordered. ➤ Animal Disease Intelligence Units (ADIUs) at Tiruppur and Tiruvallur were established.

2017-2018	<ul style="list-style-type: none"> ➤ Veterinary Epidemiology Centre was created at Saidapet, Chennai. ➤ 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	<ul style="list-style-type: none"> ➤ Tamil Nadu Animal Welfare Board (TNAWB) was established. ➤ Livestock and Poultry Feed Technology Centre at Tirunelveli was established. ➤ Alambadi Cattle Breed Research Station was established in Dharmapuri District.
2019-2020	<ul style="list-style-type: none"> ➤ Establishment of Integrated Livestock Park along with Veterinary College & Research Institute at Chinnasalem was ordered. ➤ Buildings for Animal Disease Intelligence Units (ADIUs) were

	<p>constructed at Tiruvarur and Namakkal.</p> <ul style="list-style-type: none"> ➤ Animal Disease Intelligence Units (ADIUs) were established at Ariyalur, Kanniyakumari and Ramanathapuram. ➤ Facility for sex sorting of bovine semen was established at District Livestock Farm, Ooty at an outlay of Rs.47.50 crore.
2020-2021	<ul style="list-style-type: none"> ➤ Establishment of Goat Research Station in Tenkasi district was ordered. ➤ Trichy 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.
2021-2022	<ul style="list-style-type: none"> ➤ To increase the native poultry production, establishing native Poultry Breeding Farm and hatchery unit will be set up at the Abhisekapatti District Cattle Farm, Tirunelveli District with financial allocation of Rs. 9.42 crore.

2022-2023	<ul style="list-style-type: none"> ➤ “Vallalar Palluyir Kappagangal” scheme was launched to support NGOs who take care of abandoned and injured pet animals and strays at a cost of Rs.20.00 crore. ➤ Procurement of 245 Mobile Veterinary vehicles for providing Veterinary Services to the farmers in remote villages at a cost of Rs.39.20 crore. ➤ Establishment of Native chicken breeding farm, Hatchery unit and Feed mill at District Livestock Farm, Chettinad, Sivagangai District, at a cost of Rs.13.82 crore. ➤ Strengthening of quarantine station at District livestock farm, Udhagamandalam at the cost of Rs. 2.25 crore
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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 four Additional Directors, 2 Joint Directors, one Deputy Director and 10 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 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 and Deputy Registrar from Co-operative Department provide assistance to

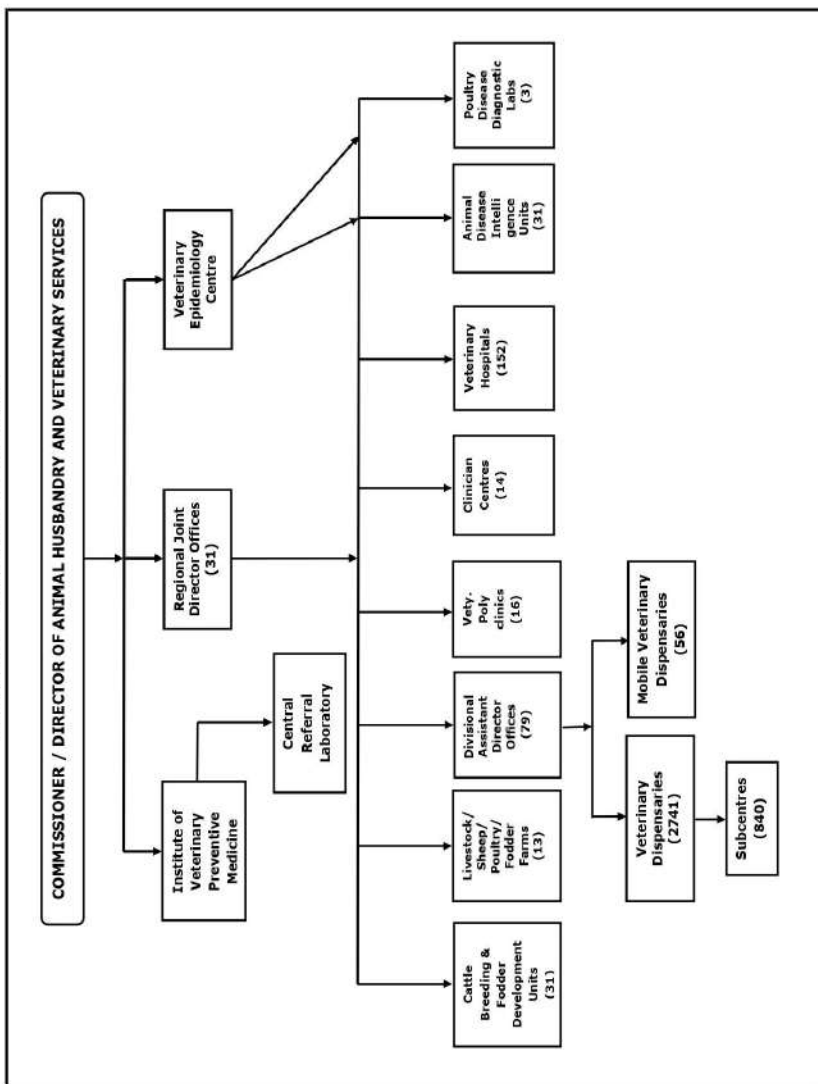
the Commissioner / Director on the issues concerned.

At field level 31 Regional Joint Directors and 41 Deputy Directors are responsible for the activities of the Department at the District level and 295 Assistant Directors are responsible at the Divisional level.

Institute of Veterinary Preventive Medicine (IVPM) at Ranipet, 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 at Veterinary Polyclinic campus, Saidapet, Chennai coordinates and monitors the work of the Animal Disease Intelligence Units (ADIUs) and Poultry Disease Diagnostic Laboratories (PDDLs).

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 increase their production and productivity. The number of veterinary institutions under the ambit of the Department has grown from a modest 120 during 1950-60's to 3,819 (2,979 veterinary institutions and 840 sub centres) in the year 2021-22.

Table 4: Type of Veterinary Institutions

S. No	Type of Institution	No. of Institutions
1	Veterinary Polyclinic	16
2	Clinician Centre	14
3	Veterinary Hospital	152
4	Veterinary Dispensary	2741
5	Mobile Veterinary Dispensary	56
6	Sub-Centre	840

S. No	Type of Institution	No. of Institutions
7	Animal Disease Intelligence Unit	31
8	Poultry Disease Diagnostic Laboratory	3
9	Animal Ambulance	32

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

- ❖ Veterinary Hospitals, headed by a Assistant Director cadre Veterinary Surgeon 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 and first-aid services.

The activity-wise work done by the above Veterinary Institutions during 2022-23 is as follows:

Table 5: Work done in the Veterinary Institutions during 2022-23

ACTIVITIES		Numbers in lakh(Upto Feb'23)
1	Veterinary Treatment (including first aid)	389.98
2	Artificial Insemination(AI)	49.84
3	Vaccination	418.98
4	Castration	9.77
5	Deworming	364.57
6	Calf Birth by AI	21.56
7	Disease Outbreaks contained	57 (Nos.)

Table 6: District wise Field Units providing veterinary services

Sl. No.	District	VPC	CC	VH	VD	SC	MVD	ADIU	AA	PDDL
1	Ariyalur	0	0	2	44	9	1	1	1	0
2	Chennai	1	0	1	0	0	1	0	1	0
3	Coimbatore	1	1	15	98	26	2	1	1	0
4	Cuddalore	0	1	5	92	56	1	1	1	0
5	Dharmapuri	0	1	3	80	10	2	1	1	0
6	Dindigul	1	0	5	106	63	1	1	1	0

Sl. No.	District	VPC	CC	VH	VD	SC	MVD	ADIU	AA	PDDL
7	Erode	2	0	6	106	24	3	1	1	1
8	Kancheepuram	0	1	0	45	14	1	1	1	0
9	Chengalpattu	0	1	1	61	24	1	0	0	0
10	Kanyakumari	1	0	2	49	15	2	1	1	0
11	Karur	0	1	2	72	12	1	1	1	0
12	Krishnagiri	1	0	2	79	14	1	1	1	0
13	Madurai	1	0	4	96	53	1	1	1	0
14	Nagapattinam	0	0	3	34	14	1	1	1	0
15	Mayiladuthurai	0	2	1	38	7	1	0	0	0
16	Namakkal	0	0	5	105	8	3	1	1	1
17	Perambalur	0	0	0	37	5	0	1	1	0
18	Pudukottai	0	1	4	101	32	2	1	1	0
19	Ramnad	0	0	4	55	14	0	1	1	0
20	Salem	1	0	7	149	9	6	1	1	0
21	Sivagangai	0	0	2	79	47	0	1	1	0
22	Thanjavur	1	1	7	105	28	3	1	1	0
23	Theni	0	0	3	53	46	1	1	1	0
24	The Nilgiris	0	1	2	29	7	3	1	1	0
25	Tiruppur	2	0	7	102	39	1	1	1	1
26	Tiruvallur	0	0	5	88	26	1	1	1	0
27	Tiruvannamalai	0	1	5	124	21	3	1	1	0
28	Tiruvarur	0	1	10	72	30	1	1	1	0
29	Thoothukudi	1	0	2	70	41	1	1	1	0
30	Tiruchirapalli	1	0	8	103	34	2	1	1	0
31	Tirunelveli	1	0	5	51	16	1	1	1	0
32	Tenkasi	0	0	3	61	19	0	0	0	0
33	Vellore	1	0	4	38	7	1	1	1	0
34	Tirupathur	0	0	2	37	9	2	0	0	0
35	Ranipet	0	0	2	46	10	1	0	0	0
36	Villupuram	0	0	5	101	6	2	1	1	0
37	Kallakurichi	0	1	2	53	18	2	0	0	0
38	Virudhunagar	0	0	6	82	27	0	1	1	0
TOTAL		16	14	152	2741	840	56	31	32	3

- * VPC - *Veterinary Polyclinics*
- CC - *Clinician Centres*
- VH - *Veterinary Hospitals*
- VD - *Veterinary Dispensaries*
- MVD - *Mobile Veterinary Dispensaries*
- SC - *Sub centres*
- ADIU - *Animal Disease Intelligence Units*
- AA - *Animal Ambulances*
- PDDL - *Poultry Disease Diagnostic Laboratories*

6.1.PROCUREMENT OF MEDICINES AND EQUIPMENT

The Department of Animal Husbandry is procuring medicines and equipment through Tamil Nadu Medical Services Corporation (TNMSC). The fund allocation is given below.

Table 7: Fund Allocation -2022-23

Sl. No	Items	Fund Allotted (Rs. in Lakh)
1	Medicine (259 items)	2206.47
2	Equipment and surgical suture materials (13 items)	287.82

Sl. No	Items	Fund Allotted (Rs. in Lakh)
3	Intensive health care (Deworming -3 items)	105.00
4	Mineral mixture	501.35
5	Alternate medicine (11 items)	161.53
6	Reserve fund to meet out emergencies	612.73
	TOTAL	3874.90

7. 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, is involved in the production of Veterinary Biologicals, Diagnostic reagents , Diluent 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 which spread over an area of 78.57 acres.
- During 1954, it was renamed as **Institute of Veterinary Preventive Medicine (IVPM)**
- The Institute of Veterinary Preventive Medicine is a pioneer Institute among all Veterinary Biologicals in South India.
- IVPM was the first government veterinary institution to initiate the upgradation of vaccine production facility to Good Manufacturing Practices (GMP) as per the mandatory requirement of Drug licensing authority of the Union Government.

OBJECTIVES

- Production of vaccines for prevention of various livestock and poultry diseases
- Ensuring timely availability of necessary vaccines
- Sero surveillance, sero monitoring and sero Typing for Foot and Mouth disease (FMD) through FMD collaborative centre aided by National Animal Disease Control Programme (NADCP)

FUNCTIONS OF THE INSTITUTE

- The Institute is producing four Bacterial vaccines, five Viral vaccines, four Diagnostic reagents and one Diluent.

Table 8: Production details of Biologicals during 2022-23

Sl. No	Biologicals produced	Doses
A.	Bacterial Vaccines (in lakh)	
1	Anthrax spore vaccine	29.680
2	Black quarter vaccine	1.790

Sl. No	Biologicals produced	Doses
3	Enterotoxaemia Vaccine	0.590
4	Haemorrhagic septicaemia vaccine	0.740
B.	Viral Vaccines (in lakh)	
1	Sheep Pox vaccine	1.14
2	Duck Plague vaccine	154.597
3	Ranikhet disease vaccine 'F'	1.516
4	Ranikhet disease vaccine 'K'	295.360
5	Ranikhet disease vaccine ' <i>Lasota</i> '	16.500
C.	Diagnostics (in ml)	
1	CMT Antigen	4000
2	Brucella abortus Coloured Antigen	1580
3	Brucella abortus plain Antigen	2350
4	Brucella abortus MRT Antigen	990
D.	Diluent (in litres)	
1	Phosphate Buffer Saline	4900

- 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.
- Maintenance of seed and virulent biological material.
- Sale of vaccines to various states of India.
- Quality Assurance and Quality Control (QAQC) for testing of vaccines
- Timely distribution of various biological products to field institutions
- Supply of diluent and vaccines for conducting pulse RDVK (Ranikhet Disease) programme in the State.

Projects currently under implementation at IVPM, Ranipet:

- Upgradation of Bacterial vaccine Facility to GMP Standards at a total cost of Rs.12.02 crore.

- Upgradation of Poultry vaccine Facility to GMP Standards at a total cost of Rs.3.00 crore.
- Establishment of Anthrax Spore Vaccine Lab (ASV) in compliance to GMP standard at a total cost of Rs.57.98 crore.
- Establishment of Quality Assurance and Quality Control lab (QAQC lab) in compliance to GLP standard at a total cost of Rs.19.925 crore.
- Establishment of GMP compliant Pharmaceutical Lab at a total cost of Rs.10.00 crore.
- Establishment of GMP compliant Brucella Diagnostic Lab at a total cost of Rs.8.02 crore.

Efforts are being taken to upgrade all the vaccine production facilities of the Institute to GMP standards in collaboration with NDDDB and TANUVAS.

8. DISEASE PREVENTION, DIAGNOSIS, CONTROL AND ERADICATION

For the economic upliftment status of livestock farmers, the animals must be healthy and profitable in the aspect of reproduction and production traits. The various diseases that affect livestock productivity should be diagnosed at appropriate time for control and containment of the disease. To ensure this, the department has the following units functioning in the State.

8.1 Veterinary Epidemiology Centre (VEC)

The Veterinary Epidemiology Centre was established at Chennai. The Centre is the nodal centre for all activities related to the Animal Disease intelligence units and poultry disease diagnostic laboratories.

- The Veterinary Epidemiology Centre co-ordinates the Disease Diagnostic activities of the Animal Husbandry sector of the State through ADIUs and PDDLs.

- Undertake investigation during disease outbreaks to provide inputs and remedial measures to the Animal Disease Intelligence units of the State to control the spread of various livestock and poultry Diseases.
- The Unit undertakes Bi-annual inspection of the private poultry farms along with members of special committee formed by the Directorate of Animal Husbandry and Veterinary Services, to check and verify compartmentalization regulations against Avian Influenza to ensure that the compartmentalised farms / establishments have adhered to the principles of compartmentalization prescribed by World Organization for Animal Health (WOAH) and maintains all mandatory bio security and bio safety standards.
- The VEC coordinates the testing of stud bulls in the three frozen semen production

stations by a team of scientists from Southern Regional Disease Diagnostic laboratory (SRDDL), Bangalore as per the minimum standard protocol to ensure that the frozen semen straws intended for Artificial insemination are distributed from disease free herd.

- Monitoring of vaccination work in the Districts.
- VEC assists in imparting training to the field veterinarians on recent disease diagnostics and laboratory advanced techniques.

8.2 Animal Disease Intelligence Units (ADIU)

The Animal Disease Intelligence units are functioning in 31 Districts of the State and are involved in disease diagnosis, surveillance and attending to disease outbreaks immediately on receipt of information.

- The ADIUs collect samples for laboratory diagnosis from affected animals as well as following post-mortem, conduct tests for diagnosis of certain diseases.
- ADIUs send collected samples from ailing and dead animals to the laboratories for further confirmatory diagnosis.
- The ADIUs further attempts to trace the reasons for the outbreak, which will assist in controlling the spread of the disease and prevent outbreaks in future.
- Endemic charts are prepared to know the prevalence of a disease and to forecast for undertaking prophylactic vaccination.
- The ADIUs attend mass contact programs and special camps for spot diagnosis of diseases.
- ADIUs visit slaughter houses and collect samples to rule out the possibility of spread of zoonotic diseases.

- The ADIUs undertakes periodical visits to Government and private farms for monitoring the health of livestock and poultry.
- The ADIUs are entrusted with the task of collecting pre and post serum samples for Foot and Mouth disease, PPR and Post serum samples for Brucellosis, to assess efficacy of vaccine and immunity levels.

ADIUs at Thiruchirapalli and The Nilgiris are strengthened for testing of Glanders in horses, donkeys, mules, ponies etc.

8.3 Poultry Disease Diagnostic Laboratory (PDDL)

Poultry disease Diagnostic laboratories are functioning in 3 Districts viz., Erode, Namakkal and Tiruppur are catering to the needs of the poultry farmers in these three intensive poultry rearing belts.

PDDLs assist in diagnosing various poultry diseases by collecting samples of droppings, blood samples etc for testing of various viral diseases, bacterial infections and parasitic infestations, by conducting post-mortem and suggest prompt preventive measures for controlling the prevailing disease as well as emerging diseases.

These labs undertake periodical visits to the poultry units and render advice on managerial practices.

Sale of poultry vaccines for timely control of poultry diseases is also undertaken by these units.

The PDDLs at Namakkal and Erode are Bio safety level II (BSL-II) compliant labs and they carry out preliminary screening for Low pathogenic avian influenza.

A laboratory for testing of feed and water analysis has been established in Palladam, Tiruppur district.

8.4 Central Referral Laboratory (CRL)

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

This laboratory plays a major role in disease confirmation as per World Organization for Animal Health (WOAH) approved laboratory techniques.

8.5 Disease Prevention Services

Every year, Vaccination is being carried out based on disease forecasting chart prepared in all the Veterinary Institutions.

Vaccines against economically destructive livestock diseases such as Anthrax, Black Quarter, Haemorrhagic Septicaemia and Sheep

Pox are produced at IVPM, Ranipet and supplied free to Veterinary institutions on demand.

Table 9: Vaccination carried out during 2022-23

Name of the Disease	Type of animals Vaccinated	No. of animals vaccinated (nos. in lakh)
Anthrax	Cattle, Buffalo, Sheep and Goat	38.46
Black Quarter	Cattle	0.35
Foot and Mouth Disease	Cattle, Buffalo	78.67
Haemorrhagic Septicaemia	Cattle and Buffalo	0.83
<i>Peste des Petits Ruminants</i>	Sheep and Goat	27.73
Sheep Pox	Sheep	0.49
LSD (using Goat pox vaccine)	Cattle	57.86
Brucellosis	Heifer calves 4-8 months	6.14
Rabies (ARV)	Dogs	2.42
RDVK Vaccination	Poultry	63.00
Total		275.95

8.5.1 National Animal Disease Control Programme (NADCP)

Under this programme, it is envisaged to control Foot and Mouth Disease (FMD) and Brucellosis by vaccination in eligible Bovine population.

Foot and Mouth disease, is a viral disease that is highly contagious in cloven-footed animals and causes heavy economic loss to the farmers. The disease is controlled by vaccination at regular intervals.

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. In the second round, 86.33 lakh eligible bovines were vaccinated during 2021-22.

In the ongoing third round of FMD, 82.07 lakh eligible bovines were vaccinated.

8.5.1.1 Brucellosis Vaccination Programme under NADCP:

Brucellosis vaccination being one time vaccination, 6.14 lakh eligible Four to Eight months heifer calves were vaccinated in the first phase under NADCP in all districts.

8.5.2 Lumpy Skin Disease (LSD)

Lumpy Skin Disease (LSD) is an infectious viral disease of cattle and buffaloes characterised by skin nodules, reduction in milk production, abortion and infertility. Outbreak in 35 villages of 15 districts were reported during the year 2022. As per GoI guidelines, about 60.25 lakh Goat pox vaccine was procured immediately and 57.86 lakh cattle were vaccinated.

8.5.3 African Swine Fever (ASF)

African Swine Fever is a highly contagious and fatal disease affecting domestic and wild pigs caused by the ASF virus and it is non zoonotic. There is no vaccine or drugs available at present to prevent and cure ASF infection. Active surveillance is being carried out in all the districts by the departmental staff.

During 2023, the disease is confirmed in Nilgiris, Chengalpattu, Tiruvannamalai, Thoothukudi, Sivaganga, Pudukottai, and Virudhunagar districts between January to March. The pigs in area of 1 km radius from epicentre (Infected Zone) were culled by humane procedure as per National Action plan for ASF to curtail the spread of disease.

Table 10: Details of outbreak during 2022-23

Name of the Disease	No.of Districts affected	No.of out break
Sheep Pox	3	5
Anthrax	3	3
<i>Peste des Petits Ruminants</i>	1	1
Lumpy skin disease	15	35
Raniket disease	1	2
Duck plaque	1	1
African Swine Fever	9	9
Black Quarter	1	1
Total		57

9. LIVESTOCK DEVELOPMENT

9.1 Departmental Farms

Under this department a total of 13 farms, inclusive of eight livestock farms, three Sheep farms, one Poultry farm and one Fodder Seed Production farm are functioning.

Objective of the departmental farms:

- To serve as demonstration units for creating awareness among farmers about best farming practices for increasing the production and productivity of livestock in the State.
- To disseminate superior germplasm among the farming community by selling genetically superior livestock.
- To impart training on best management practices to farmers
- To impart refresher training to Veterinarians and para veterinarians

- Production of disease free, high genetic merit frozen semen straws

Category wise sales details

During 2022-23, 60 numbers of calves, 491 lambs, 647 kids and 696 piglets have been sold to farmers for breeding purpose. Moreover, 2,23,958 number of Eggs and 23,582 number of chicks / Birds sold to public for the purpose of breeding and consumption.

Table 11: 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
		Buffalo	Murrah
2	District Livestock Farm, Hosur (Krishnagiri District)	Cattle	Crossbred Jersey, Crossbred Holstein Friesian, Red Sindhi, Kangeyam, Bargur, Pulikulam
		Sheep	Mecheri
		Goat	Tellicherry, Kodiaadu, Salem Black

Sl. No	Name of the Farm	Species	Breeds
		Pig	Large White Yorkshire
		Poultry	Aseel
		Horse	Kathiawar and Thoroughbred
3	District Livestock Farm, Abishekapatti (Tirunelveli District)	Cattle	Crossbred Jersey, Sahiwal
		Sheep	Kilakaraisal
		Goat	Kanni
		Pig	Large White Yorkshire
		Poultry	Vanaraja, Aseel
4	District Livestock Farm, Udhaga mandalam (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
		Goat	Jamnapari
		Pig	Landrace, Large White Yorkshire
6	District Livestock Farm, Naduvur (Thanjavur District)	Cattle	Jersey, Crossbred Jersey, Crossbred Holstein Friesian
		Buffalo	Murrah
7	District Livestock Farm,	Cattle	Crossbred Jersey, Crossbred Holstein Friesian, Tharparkar,

Sl. No	Name of the Farm	Species	Breeds
	Chettinad (Sivagangai District)		Sahiwal, Kangeyam
		Sheep	Ramnad White
		Goat	Jamnapari, Tellicherry
		Pig	Large White Yorkshire
		Poultry	Aseel
8	Livestock Farm, Korukkai (Tiruvarur District)	Cattle	Umbalachery
9	Sheep Farm, Chinnasalem (Kallakurichi District)	Sheep	Mecheri, Madras Red
		Goat	Salem Black, Tellicherry
10	Sheep Farm, Mukundaraya puram (Vellore District)	Sheep	Madras Red
11	Sheep Farm, Sathur (Virudhunagar District)	Sheep	Vembur
		Goat	Kanni
12	Poultry Farm, Kattupakkam, (Chengalpattu District)	Fowl	Vanaraja, Nicobari, Kadaknath, White Leghorn, Aseel, Rhode Island Red.
		Turkey	Beltsville white
		Quail	Japanese Quail

Sl. No	Name of the Farm	Species	Breeds
13	Fodder Seed Production Farm, Padappai (Kancheepuram District)		Fodder Sorghum CoFS-31, Cumbu Napier Co-4, Co-5, Desmanthus, Agathi

9.2 Frozen Semen Production

- To increase the milk production in the State, disease free, high genetic merit frozen semen straws are being produced by 3 Frozen Semen Production Stations functioning at Exotic Cattle Breeding Farm, Eachenkottai, District Livestock Farms at Hosur and Udhagamandalam. During 2022-23, 41.26 lakh doses of Frozen semen straws have been produced in these stations, as per the minimum standards stipulated by Government of India and these semen stations are periodically evaluated by the Central Monitoring Unit of GoI.
- The Frozen Semen Straws produced in the State are being sold to Telangana (14 lakh

Murrah straws between 2015 and 2018) and Andhra Pradesh (4.20 lakh crossbred Jersey straws during 2021-22).

- Strengthening of quarantine station at District livestock farm, Udhagamandalam at the cost of Rs. 2.25 crore is under progress.
- Sex sorted semen production has commenced from 9th March 2023 at District livestock farm, Udhagamandalam and a total of 7.2 lakh Sex Sorted Semen doses will be produced over a period 3 years at an outlay of Rs.47.50 crore.
- Conservation of Tamil Nadu Native Cattle Breeds Viz., Kangeyam, Bargur, Pulikulam at District Livestock Farm, Hosur, Umbalachery Breed at Livestock Farm, Korrukai
- Conservation of indigenous breeds viz., Red Sindhi at DLF, Hosur, Tharparkar and Sahiwal breeds at DLF, Chettinad, Sahiwal breeds at DLF, Abisegapatti are undertaken.

9.3 Cattle Breeding and Fodder Development (CBFD)

- The Frozen Semen Straws doses produced by the three frozen semen production stations are being distributed through 31 Cattle Breeding and Fodder Development (CBFD) Units to all Veterinary Institutions and Sub Centres across the State.
- In addition to distribution of semen straws, these units also supply liquid nitrogen to the veterinary institutions and subcentres. They also distribute fodder seeds/fodder slips and tree fodder seedlings to the needy farmers.

9.4 Dog Breeding Unit, Saidapet

For conservation and propagation of native breeds of Tamil Nadu such as Rajapalayam, Chippiparai and Kanni, a Dog Breeding Unit is functioning at Saidapet, Chennai.

10. SCHEMES

Department is implementing various beneficiary-oriented schemes for the economic upliftment and welfare of the poor and downtrodden. Proper implementation of Employment generation schemes can ensure higher levels of economic activity, Animal Husbandry Department is leading to sustainable growth and development in rural areas.

10.1 Specialized Veterinary Health Care and Awareness Camp

Specialized Veterinary Health care and Awareness camps are being conducted throughout the State at a total cost of Rs.7.76 crore per year, in order to provide veterinary health care facilities (both preventive and curative) to livestock and poultry.

The following activities are being carried out in the camp

- Treatment of ailing animals
- Deworming
- Vaccination against diseases
- Castration
- Artificial Insemination
- Infertility treatments
- Pregnancy verification
- Minor surgeries like Chronic Luxation of Patella (CLP)
- Specialized gynaecological assistance
- Creating awareness on advanced scientific animal husbandry practices among farmers
- Distribution of mineral mixtures free of cost.
- Fodder development awareness programme
- Production, marketing and value addition of livestock products on fodder crop production and utilization.

During 2022-23, 7,760 Specialized Veterinary Health care and Awareness Camps were conducted benefitting 81.92 lakh livestock and poultry of 8.93 lakh farmers.

10.2 Fodder Development

The objective of increased milk production can be met only by ensuring the availability of good quality feed in a balanced manner. Livestock production is more efficient from cultivated fodder than from the fodder obtained from the common grazing lands.

Green fodder being a vital source of nutrients for the dairy animals, helps in maintaining good health and improving breeding efficiency of animals. The availability of nutrients from green fodder is significantly cheaper than what is available in concentrate feed. Increased use of green fodder in the ration of animals will

reduce cost of milk production and directly contribute to increase in profitability.

Limited availability of high yielding variety fodder, lack of quality seeds of improved varieties, lack of post-harvest management for surplus fodder, poor management of pasture lands etc., are the limitations in increasing the area under fodder crops.

Enhanced use of certified seeds / quality planting material of improved high yielding varieties of fodder crops will aid in reducing the gap between demand and availability of green fodder. It is essential must preserve the surplus fodder either in the form of silage or hay to ensure year round availability of green fodder.

10.2.1 Sustainable Fodder production initiatives of the Department

To overcome the fodder scarcity, particularly during the lean period and natural

calamities including droughts/floods and to augment fodder production, conservation and management of available fodder resources the Department is implementing various State and Union shared schemes viz, Integrated Fodder Development Mission, National Livestock Mission (NLM) etc.,.

10.2.2 Fodder Production Activities

10.2.2.1 Fodder Development activities in Departmental Farms

Due to the relentless efforts of the department for past several years, the concept of fodder slip propagation has been popularized among the farmers. This has promoted the production and supply / exchange of quality fodder slips among the farmers themselves. A baler unit was established in District Livestock Farm, Chettinad, to preserve the seasonal surplus fodder and usage during lean period. Further, a Baler unit will be procured for District

Livestock Farm, Chettinad, Naduvur and Exotic Cattle Breeding Farm (ECBF), Eachenkottai. Around 18,999 M.Tonnes of green fodder were produced in an area of 1167.81 acres in 12 departmental farms and 21.47 lakh nos. of fodder Slips were distributed to the needy farmers at subsidised cost during 2022 -23.

10.2.2.2 Advanced training on Fodder Production and conservation

In order to develop the skill and update knowledge on fodder production and Nutrition management for increasing the livestock production to the Departmental staff an advanced 5 days training will be provided at the south asia's premier Research and Development Institution - Indian Grassland and Fodder Research Institute (IGFRI), Jhansi.

10.2.2.3 Awareness creation

Except preservation of crop residues in the form of straws / stalks at farmer level, the other preservation practices in the form of silage bales, fodder blocks, New fodder production technologies etc., are totally absent among farmers mainly due to lack of awareness about the latest techniques. Wide publicity and awareness on the importance of feeding balanced nutritive green fodder, nutritional management of animals and green fodder production in each and every farm holdings are being created through the **“Specialised Veterinary health care and Awareness camps”** conducted at micro level.

10.2.2.4 Commercial fodder production

In order to encourage commercial fodder production and preservation techniques through entrepreneurship development, four

entrepreneurs were developed to take up commercial green fodder production by providing 25% subsidy @ Rs. 10.50 lakh to establish silage bale making unit on commercial line with a production capacity of 3,000 MT and above per annum for the purchase of the requisite machineries. These units were established in four different zones of the state which will meet out the demand in their respective areas.

10.2.2.5 Rejuvenation of Meikkal land on Scientific lines

The Animal Husbandry and Livestock sector is inevitable for rural economy, especially the small and marginal farmers. These farmers have traditionally relied on the common grazing land / meikkal land for meeting the significant portion of the fodder requirements of their livestock. Under this scheme, 1,000 acres of meikkal land has been identified in 31 districts in the state for rejuvenation at an outlay of Rs.1.67 crore on

pilot basis and implemented in convergence with Department of Rural Development and Panchayat Raj to replace the local low nutritive grasses with high yielding Perennial grass and legumes and will be made available to the livestock throughout the year there by increase the milk production of cattle.

10.2.2.6 Promoting alternate fodder production techniques

Intercropping of perennial forage grasses / cereals along with perennial legume forage in plantation garden / orchards will supply superior quality balanced cattle fodder throughout the year. To encourage intercropping of forage crops, a cultivation incentive of Rs. 3,000 /acre were provided as back ended subsidy and 2,000 acres were brought under intercropping method of fodder cultivation at an outlay of Rs. 60.00 lakh during 2022-23 and the scheme will also be continued in 2023-24.

10.2.3 Fodder Preservation / Conservation Activities

National Mission for Sustainable Agriculture (NMSA)– 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, 125 Silage making units have been established in 30 districts as a demonstrative unit in the farmers field at an outlay of Rs. 1.17 crore.

Through all these 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 will fully address the gap between supply and demand of fodder in the state.

10.3 Creation of Women Entrepreneurship

To improve and sustain the livelihood of rural poor Widows/Deserted and Destitute Women, 38,800 beneficiaries at the rate of 100 beneficiaries per block were provided with 1,94,000 goats/sheep (5 goats/sheep/beneficiary) at an outlay of Rs.75.63 crore in 37 districts (except Chennai).

10.4 Poultry Development

10.4.1 Scheme for Establishing Small Scale Native chicken farm units (250 birds / unit) in Rural Areas

To encourage entrepreneurs in Native Chicken rearing, 100 small scale (250 birds / unit) native chicken poultry units are being established at 50 % subsidy in 10 Districts viz., Ariyalur, Cuddalore, Perambalur, Ramanathapuram, Sivagangai, Tirunelveli, Tenkasi, Thoothukudi, Theni and Virudhunagar

during current year at a total cost of Rs.180 lakh. The components covered under the scheme are

- Construction of poultry shed
- Purchase of equipment
- Chick cost and
- Feed cost for 4 months i.e., upto grower stage.

Through this scheme, each beneficiary will earn around Rs.2.31 lakh in a year by sale of eggs for table egg purpose and by sale of chicks and spent hens & cocks.

10.4.2 Poultry Units in Departmental Farms

Best practices and latest scientific techniques are being disseminated to the poultry farmers through the poultry units maintained in the departmental farms.

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

With the objective of providing good quality native chicken to the farmers in Southern Districts, a Native Chicken Breeding Complex and Hatchery Unit is being established at the District Livestock Farm Abhishegapatti in Tirunelveli District under NADP with financial assistance from Union and State Governments in the ratio of 60:40 at a total cost of Rs.942.31 lakh and the construction works are nearing completion.

10.4.2.2 Native Chicken Breeding Complex, Hatchery and Feed Mill Unit at District Livestock Farm, Chettinad

With the objective of providing good quality native chicken to the farmers in Eastern Districts, a Native Chicken Breeding Complex and Hatchery Unit is being established at the

District Livestock Farm Chettinad in Sivagangai District during current year under State Fund at a total cost of Rs.1381.92 lakh.

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

Under this project 66 river sub-basins in 34 districts have been identified for animal husbandry activities like formation of Dairy Interest Groups (DIG), Calf Management, Mastitis Management, fertility-cum-healthcare camps, programmed breeding, artificial insemination at farmers' door step and Fodder Development at a total outlay of Rs. 38 crore over a period of 6 years.

Achievements of four phase in 52 sub basins,

- **120 DIGs** consisting 3000 farmers have been formed

- **25,652 female calves** have been dewormed
- **25,274 female calves** have been provided with Mineralized salt licks
- **40,040 cows** have been treated for mastitis
- **4,148 fertility-cum-healthcare camps** have been conducted
- **36,345 cows** have been covered under programmed breeding
- **8,19,968 Artificial Insemination** have been performed at the farmers' doorstep
- **4313 ha.** have been brought under fodder cultivation.

By the above activities, 3.47 lakh farmers have been benefitted and 2.32 lakh calves were born.

10.6 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.

10.6.1 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 nine 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 have completed the construction work.

2. Fisheries Demonstration Complex

comprising intensive fish seed rearing unit with aeration facility, Aquaponics unit, ornamental fishery unit and modern fish kiosk.

3. Post Graduate Education Complex

comprising administrative block, academic block, laboratories, faculty rooms, hostels and staff quarters.

4. 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.

5. Research Complex

comprising livestock breeding and technology unit and research units.

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

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

8. Forage Research Zone with demarcated areas for irrigated fodder, dry fodder, silage, silvi-pasture and fodder seed production.

In the first phase, 25 acres of land has been cultivated with Co.FS.29 fodder crop and distributed to District livestock farm Udhagamandalam

9. 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, Public Interaction Zone, VIP guest house and entrance arch are taken up by the Public Works Department (PWD) in which civil works completed. Common facilities work and High/medium voltage Electrical installation work is under progress.

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 civil works and electrical works completed.

TANTRANSCO is involved in commissioning of 110/22 Kv substation work and Agriculture Engineering Department is involved in Micro-Irrigation work which are under progress.

10.6.2 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.

10.6.3 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.

10.6.4 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.

10.6.5 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.

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 from River Cauvery at Koodakkal. The TWAD Board executed the special water project to carry water through pipelines for a distance of 155 kilo meters.

11. VETERINARY INFRASTRUCTURE

The Veterinary Institutions have become a knowledge resource centre and extension centre apart from providing treatment for ailing livestock and poultry. The department's infrastructure is being developed with assistance from NABARD Rural Infrastructure Development Fund (RIDF), National Agriculture Development Programme (NADP), Establishment and Strengthening of Veterinary Hospitals and Dispensaries (ESVHD) and State funds with the ultimate aim of rural development.

Under these Schemes, buildings for 2,100 Veterinary Institutions were constructed at a total cost of Rs.645.08 crore over the years and presently 144 building construction is under progress at a cost of Rs.96.90 crore. Further, during the current year 37 new Veterinary Institutions have been taken up for construction

under NABARD RIDF XXVIII assistance at a total cost of Rs.25.00 crore.

12. LIVESTOCK CENSUS AND INTEGRATED SAMPLE SURVEY

12.1 Livestock Census

The first livestock census was conducted during the year 1919-20. Livestock census is conducted across the country once in every five years and it encompasses several activities to be carried out within the stipulated time frame. The latest 20th Quinquennial livestock Census was conducted during the year 2019.

Table 12: Species wise 20th Livestock and Poultry Population Tamil Nadu and All India

S. No	Species	20th Livestock census of All India	20th Livestock census of Tamil Nadu
1	Exotic/Crossbred Cattle	51356405	7724719
	Indigenous/Non-descript Cattle	142106466	1793941
	Total Cattle	193462871	9518660

S. No	Species	20 th Livestock census of All India	20 th Livestock census of Tamil Nadu
2	Buffaloes	109851678	518795
3	Mithuns	386305	0
4	Yaks	57570	0
	Total Bovine	303758424	10037455
5	Exotic/Crossbred Sheep	4088133	277650
	Indigenous sheep	70172482	4222841
	Total Sheep	74260615	4500491
6	Goats	148884786	9888746
7	Horses and Ponies	342226	5417
8	Donkeys	123587	1428
9	Mules	84261	305
10	Camels	251956	7
11	Exotic/Crossbred Pigs	1896944	17106
	Indigenous Pigs	7158544	49666
	Total Pig	9055488	66772
	Total livestock	536761343	24500621
12	Dogs	9434039	1296655
13	Rabbits	549941	26513
14	Total Poultry Birds in	317073357	21264570

S. No	Species	20th Livestock census of All India	20th Livestock census of Tamil Nadu
	B backyard Poultry		
	Farm Poultry	534736574	99516530
	Total Poultry	851809931	120781100

12.2 Integrated Sample Survey (ISS) Scheme

Sample surveys are being carried out annually under Integrated Sample Survey scheme since 1977-78 onwards with 50% financial assistance from Union Government.

Estimates of milk, meat, egg and wool production are prepared annually as per the guidelines of Government of India.

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.

**Table 13: SEASONWISE SURVEY OF
ESTIMATED MAJOR LIVESTOCK PRODUCTS
2021-22**

Item	Summer (March to June)	Rainy (July to October)	Winter (November to February)	Total 2021-22
Milk (Lakh Metric Tonne)	33.14	34.11	33.82	101.07
Egg (Million Nos.)	6630.51	7110.81	7092.27	20833.59
Meat (Lakh Metric Tonne)	232.50	223.02	230.36	685.88

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

Jallikattu, a 5,000-year-old traditional event of rural people of Tamil Nadu, has a history associated with the socio-cultural ethos of Tamil Nadu.

Jallikattu events are to be conducted as per the Tamil Nadu Prevention of Cruelty to Animals (Conduct of Jallikattu), Rules 2017. Suitable Standard Operating Procedures (SOP) are framed and implemented and every year Jallikattu events are notified in the State Gazette from January till May, Suitable Standard Operating procedure have been framed and implemented, it is ensured that the bulls are not subjected to unnecessary pain and suffering during the events or preserving the cultural sentiments of Tamil Nadu. Moreover , Police Department has been strictly instructed to ensure that only 25 participants are present in the arena at any time to embrace the bull and to see to it that only one participant embraces one bull at a time.

14. ANIMAL WELFARE MEASURES

14.1 Activities of Tamil Nadu Animal Welfare Board (TNAWB)

The Constitution of India, in Article 51(A)(g), directs to ensure that the animals are treated with compassion and in a humane manner.

In reverence to the Constitution, the Government of Tamil Nadu reconstituted the Animal Welfare Board of Tamil Nadu in 2022 to monitor and address the animal welfare issues in the State.

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, Commissioners / Directors of concerned

Departments, Registrars and Honorary Members.

14.1.1 Vallalar Palluyir Kappagangal

In 2022-23 budget Speech, a new scheme named "Vallalar Palluyir Kaapagangal" has been announced in order to commemorate the 200th birth Anniversary of saint Vallalar, who epitomized compassion for all living beings, "Whenever I see a wilted plant, I too wilt". The scheme is aimed to support the Non-Governmental Organizations which take care of abandoned and injured pet animals and strays and the allocation for the scheme is Rs.20.00 crores for the year 2022-23.

The following activities are proposed to be supported:

- 1) Feeding and medical treatment for abandoned, sheltered, injured pet and stray animals.

- 2) Providing ambulance to Society for the Prevention of Cruelty to Animals (SPCAs) / AWOs / NGOs to ensure that emergency Veterinary care is provided at all times for the animals in distress.
- 3) Providing infrastructure including provision of shelters on scientific basis in the name of 'Vallalar Palluyir Kaapagangal'.
- 4) Animal Birth Control (ABC) and Immunization Program for stray and pet dogs and cats.

As a first phase, a sum of Rs.2.14 Crore has been sanctioned for the provision of food, medical facility, ambulance and infrastructure to five Animal Welfare Organizations and the first installment amount of Rs.88.05 lakh was released to them by the Hon'ble Chief Minister of Tamil Nadu in an event marking Tiruvalluvar Day on 16.01.2023

14.2 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 purpose of District SPCAs is to ensure the rights and freedom and welfare of the animals, to protect and address animal cruelty matters and to make by-laws and guidelines for efficient discharge of duties, setting up and monitoring of infirmaries and animal shelters. These organizations are functioning under the leadership of the District Collector. The activities of these societies are monitored by the District Management Committee.

14.3 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 released in 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.

During this Budget 2023-24 an amount Rs.10.00 crore has been allotted for animal birth control programme.

14.4 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 Prevention of Cruelty to Animals (Pet Shop) Rules, 2018, the Pet shops that are functioning across the State were trading without any regulations, has been 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.

Tamil Nadu Animal Welfare Board (TNAWB) through press release has sensitized the pet shop owners to register with the Board and 417 pet shops have been registered till date.

15. TAMIL NADU LIVESTOCK DEVELOPMENT AGENCY (TNLDA)

Tamil Nadu Livestock Development Agency was established in 2002 to increase the production of milk and productivity through cattle and buffalo breeding and is implementing cattle and buffalo breeding programmes.

15.1 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.

15.2 Activities

- Providing equipment and strengthening of infrastructure at the semen production stations.
- Strengthening of semen storage and distribution centers and Artificial

Insemination centers by supplying liquid nitrogen containers, equipment vehicles and other inputs.

- 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.
- 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 Livestock Insurance Scheme for disaster relief and Risk Management.
- Facilitating development of livestock entrepreneurs.
- Procurement of inputs under the various schemes of the Department of Animal Husbandry.

15.3 Activities implemented

15.3.1 Strengthening of semen production stations

Establishment of quarantine bull sheds at the District Livestock Farm, Hosur, Krishnagiri has been taken up at an estimated cost of Rs.2.09 crore.

Strengthening of the quality control laboratory at the District Livestock Farm, Hosur, Krishnagiri, Exotic Cattle Breeding Farm, Eachenkottai, Thanjavur and District Livestock Farm, Udthagamandalam to perform Quantitative Polymerase Chain reaction (RT-PCR), Quantitative Polymerase Chain Reaction machines, deep freezers, Refrigerated Centrifuges and Polymerase Chain Reaction work station have been supplied at an estimated cost of Rs.75.00 lakh.

Strengthening of the semen production station at Exotic Cattle Breeding Farm, Eachenkottai has been taken up at a cost of Rs.4.73 crore.

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

- 12 crossbred Jersey, 2 Kangeyam, 2 Pulikulam High Genetic Merit bulls were provided to District Livestock Farm, Hosur.
- 5 crossbred Jersey and 10 Murrah buffaloes was provided to Exotic Cattle Breeding Farm, Eachenkottai.
- 12 Crossbred Holstein Friesian, 2 Sahiwal and 10 Crossbred Jersey were provided to District Livestock Farm, Udhagamandalam.

15.3.3 Strengthening of semen storage and distribution centres.

For the strengthening of the semen storage and distribution centres, to distribute semen doses and liquid nitrogen, 17 vehicles, 71 frozen semen containers of 47 Litres capacity, 381 liquid nitrogen transport containers of 50 Litres capacity, 18 phase contrast microscope have been supplied at a cost of Rs.3.60 crore. Installation of 3000-Litre capacity liquid nitrogen storage silos at 2 places are in progress.

15.3.4 Skill Development

Training has been facilitated at the training centre of Kerala Livestock Development Board for 6 Veterinarians working in the semen production stations.

Training in Quantitative Polymerase Chain Reaction testing has been facilitated at the training centre of Tamil Nadu Veterinary and

Animal Sciences University for 6 Veterinarians working in the semen production stations.

To improve the quality of Artificial Insemination works, providing retraining for 106 Artificial Insemination technicians were given; refresher training for 197 Livestock Inspectors and training in recent developments in breeding for 120 veterinarians were facilitated.

15.3.5 Establishment of gender sorted semen production facility

A gender sorted semen production facility has been established at the District Livestock Farm, Udhagamandalam with a total outlay of Rs.47.50 crore. A total of 7.20 lakh gender sorted semen doses would be produced over a period of three years.

15.3.6 Embryo Transfer technology

Embryo Transfer and In-Vitro Fertilization programmes have been started at the District Livestock Farm, Hosur, Krishnagiri District at a

cost of Rs.4.55 crore. By this, 84 High Genetic Merit Bulls and 85 High Genetic Merit Bull mothers are targeted to be produced. An invitro fertilization laboratory has been established. For embryo transfer work, 23 Kangeyam, 1 Bargur, 2 Pulikulum and 3 Umbalachery cows have been selected and procured for the scheme. So far 464 embryos (Sindhi-372, Kangeyam-83, Pulikulum-8 and Bargur-1) have been transferred.

Through this 55 calves (Sindhi-43, Kangeyam-9, Pulikulum-3) have been born.

15.3.7 National Artificial Insemination Programme (NAIP)

To produce better calves, increase milk production and increase farmer's income in districts where Artificial Insemination coverage is less than 50%, with an aim of providing Artificial Insemination services to all breedable females of reproductive age at the farmer's doorstep, this

programme is being implemented in 13 districts namely Thiruvannamalai, Virudhunagar, Villupuram, Chennai, Cuddalore, Kanchipuram, Nagapattinam, Pudukottai, Ramanathapuram, Sivagangai, Salem, Nilgiris and Thiruvallur.

The third phase of the scheme has been implemented during the period from 01.08.2021 to 31.07.2022 with a financial sanction of Rs.49.47 crore for Artificial Insemination of 13.95 lakh cattle. Under this scheme, so far Artificial Insemination of 13.66 lakh cattle of 9.90 lakh beneficiaries have been done and 3.24 lakh calf births have been registered.

The fourth phase of the scheme is being implemented during the period from 01.08.2022 to 31.05.2023 with a target of Artificial Insemination of 15.79 lakh cattle. Under this scheme, so far, Artificial Insemination has been done in 7.86 lakh cattle of 4.65 lakh beneficiaries.

15.3.8 National Livestock Mission - Risk Management

Livestock insurance scheme is implemented in all districts through Animal Husbandry Department and Tamil Nadu Milk Producers Co-operative Union at a cost of Rs. 737.482 lakh to insure 1.50 lakh cattle units. So far, 1,60,531 cattle units have been insured under this scheme.

15.3.9 Entrepreneurial Development Programme

The scheme is implemented Under Realigned National Livestock Mission, for Entrepreneurship Development under following activities.

- Breed Development of Poultry breeding
- Sheep and Goat breeding
- Pig breeding
- Fodder Crop Production

Table 14: The details of subsidies under the programme-beneficiary details

Activity	Minimum unit size	Subsidy
Rural Poultry farming	1000 Nos. indigenous birds and rural hatchery	50% of the capital expenditure with a maximum of Rs.25.00 lakh
Sheep and goat farming		50% of the capital expenditure in two instalments
	100 females + 5 males	Rs.10 lakh
	200 females + 10 males	Rs.20 lakh
	300 females + 15 males	Rs. 30 lakh
	400 females + 20 males	Rs.40 lakh
	500 females + 25 males	Rs.50 lakh
Pig farming		50% of the capital expenditure
	50 sows + 5 boars	15 lakh
	100 sows + 10 boars	30 lakh

Activity	Minimum unit size	Subsidy
Frame work for fodder and fodder crop production	Hay/Silage 2000 to 2400 metric tonnes per year /Total Mixed Ration (TMR)/ Fodder Block -30 metric tonnes per day and storage of fodder	50% of the capital expenditure with a maximum of Rs.50.00 lakh

Individuals / Self Help Group (SHG)/Farmers Producer Organizations (FPO)/Farmers Cooperatives (FCOs)/Joint Liability Groups (JLGs) and Section 8 companies are eligible under the programme.

Under the programme, Government of India has approved 14 applications and first installment subsidy of a total sum of Rs.46.91 lakh has been released to Four entrepreneurs.

15.3.9.1 Procurement of quality equipment under Tamil Nadu Modernization of Irrigated Agriculture Scheme (TNIAMP)

Under the Tamil Nadu Irrigated Agriculture Modernization Project, procurement of semen doses from High Genetic Merit bulls, sex-sorted semen doses and Artificial Insemination gloves for the Animal Husbandry Department for Artificial Insemination work in the sub-basins is taken up.

16. Sustainable Development Goals

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 Goal 12: Responsible Consumption and Production, under SDGs through various

schemes and activities implemented by the Department.

The Department addresses Goals 1, 2, 3 and 12 of SDG by providing veterinary services, breeding support and fodder development through 2,923 Veterinary Institutions, disease monitoring, prevention and control through 35 Disease Monitoring Units, thereby augmenting the quality and quantity of milk, egg and meat production.

Through the services provided and the programs implemented by the veterinary institutions of the Department, the production of milk, eggs and meat is being increased to achieve the targets.

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

Tamil Nadu is a pioneering state in providing quality health care to animals. With the purpose of providing cutting-edge veterinary care for animals, Asia's First Veterinary University was founded in 1989 by the then Honourable Chief Minister of Tamil Nadu, Kalaignar Dr. M. Karunanidhi, the Champion of Farmers and Public Welfare. With the following goals, TANUVAS has been a frontrunner in veterinary clinical sciences and has remained a national leader in veterinary education and research:

- 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

17.1 Units of TANUVAS

17.1.1 Constituent colleges of TANUVAS

Sl. No.	Colleges	Admission Strength
1.	Madras Veterinary College, Chennai (B.V.Sc & AH)	120
2.	Veterinary College and Research Institute, Namakkal (B.V.Sc & AH)	100
3.	Veterinary College and Research Institute, Orathanadu (B.V.Sc & AH)	100
4.	Veterinary College and Research Institute, Tirunelveli (B.V.Sc & AH)	100
5.	Veterinary College and Research Institute, Salem (B.V.Sc & AH)	80
6.	Veterinary College and Research Institute, Theni (B.V.Sc & AH)	40

Sl. No.	Colleges	Admission Strength
7.	Veterinary College and Research Institute, Udumalpet (B.V.Sc & AH)	40
8.	College of Food and Dairy Technology, Koduveli (B.Tech)	60
9.	College of Poultry Production and Management, Hosur (B.Tech)	40
	Total	680

17.1.2 Peripheral Research Stations, Laboratories and Centres of TANUVAS

Sl. No.	District	Research Stations / Laboratories / Centres
1.	Chennai	<ul style="list-style-type: none"> ➤ Poultry Research Station, Madhavaram ➤ Livestock Farm Complex, Madhavaram ➤ Central University Laboratory,

Sl. No.	District	Research Stations / Laboratories / Centres
		<p data-bbox="591 292 801 323">Madhavaram</p> <ul style="list-style-type: none"> <li data-bbox="546 339 958 459">➤ Viral Vaccine Research Centre, Madhavaram <li data-bbox="546 475 958 595">➤ Bacterial Vaccine Research Centre, Madhavaram <li data-bbox="546 611 958 730">➤ Zoonoses Research Laboratory, Madhavaram <li data-bbox="546 746 958 866">➤ Laboratory Animal Medicine, Madhavaram <li data-bbox="546 882 958 1042">➤ Pharmacovigilance Laboratory for Animal Feed and Food Safety, Madhavaram <li data-bbox="546 1058 958 1217">➤ Translational Research Platform for Veterinary Biologicals, Madhavaram <li data-bbox="546 1233 958 1313">➤ Biosafety Level III Laboratory,

Sl. No.	District	Research Stations / Laboratories / Centres
		Madhavaram ➤ Centralised Clinical Laboratory, Vepery ➤ Centralized Instrumentation 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

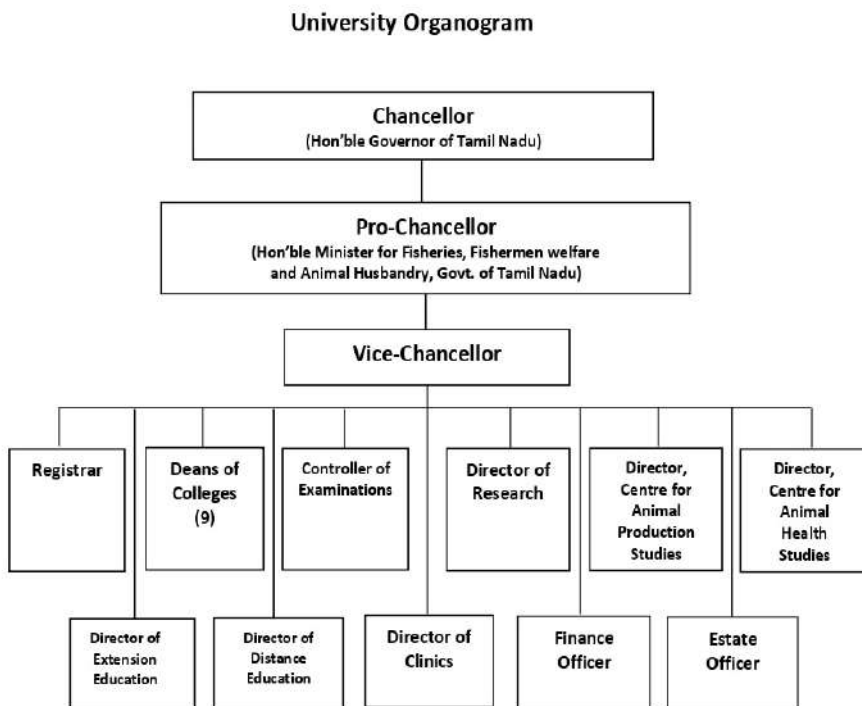
Sl. No.	District	Research Stations / Laboratories / Centres
		Training and Research Centre, Melmaruvathur
3.	Kancheepuram	➤ Farmers Training Centre
4.	Dharmapuri	<ul style="list-style-type: none"> ➤ Alambadi Cattle Research Station ➤ Veterinary University Training and Research Centre ➤ Tiruchy Black Sheep Research Centre
5.	Villupuram	<ul style="list-style-type: none"> ➤ Veterinary University Training and Research Centre ➤ Krishi Vigyan Kendra
6.	Salem	<ul style="list-style-type: none"> ➤ Mecheri Sheep Research Station, Pottaneri ➤ Veterinary University Training and Research Centre

Sl. No.	District	Research Stations / Laboratories / Centres
		➤ Avian Disease Laboratory, Thalaivasal
7.	Erode	<ul style="list-style-type: none"> ➤ Bargur Cattle Research Station, Bargur ➤ Kangayam Cattle Research Station, Erode ➤ Veterinary University Training and Research Centre
8.	Nilgiris	➤ Sheep Breeding Research Station, Sandynallah
9.	Namakkal	<ul style="list-style-type: none"> ➤ Poultry Disease Diagnostic and Surveillance Laboratory ➤ Animal Feed Analytical and Quality Assurance Laboratory

Sl. No.	District	Research Stations / Laboratories / Centres
		<ul style="list-style-type: none"> ➤ Ethnoveterinary Herbal Research Centre for Poultry ➤ Krishi Vigyan Kendra
10.	Sivagangai	<ul style="list-style-type: none"> ➤ Pulikulam Cattle Research Station, Manamadurai ➤ Krishi Vigyan Kendra, Kundrakudi
11.	Pudukottai	➤ Regional Research and Education Centre
12.	Madurai	➤ Veterinary University Training and Diagnostic Centre
13.	Theni	➤ Farmers Training Centre
14.	Tiruvarur	
15.	Ramanathapura	➤ Veterinary University Training and Research Centres
16.	Kanyakumari	
17.	Vellore	
18.	Thiruvannamala	
19.	Krishnagiri	

Sl. No.	District	Research Stations / Laboratories / Centres
20.	Cuddalore	
21.	Perambalur	
22.	Tiruppur	
23.	Coimbatore	
24.	Thanjavur	
25.	Nagapattinam	
26.	Dindigul	
27.	Tiruchirappalli	
28.	Virudhunagar	
29.	Tenkasi	<ul style="list-style-type: none"> ➤ Goat Research Centre ➤ Regional Centre for Conservation of Native Dogs
30.	Karur	<ul style="list-style-type: none"> ➤ Veterinary University Training and Research Centre ➤ Backyard Poultry Research Centre

17.1.3 Organogram



17.2 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	580
Bachelor of Technology (Food Technology)	40
Bachelor of Technology (Poultry Technology)	40
Bachelor of Technology (Dairy Technology)	20
Master of Veterinary Science	160
Master of Technology (Food Technology)	7
Master of Technology (Poultry Technology)	3
Master of Technology (Dairy Technology)	3
Master of Technology (Dairy Chemistry)	3
Master of Science (Biotechnology)	3
Doctor of Philosophy (Veterinary)	88

Degree and diploma Courses	Admission strength
Doctor of Philosophy (Biotechnology)	3
Doctor of Philosophy (Food Technology)	5
Post Graduate Diploma – Regular mode (4 disciplines)	14
Post Graduate Diploma – Distance mode (22 courses)	240

17.3 Important events of TANUVAS during 2022

- Honourable Minister for Fisheries, Fishermen Welfare and Animal Husbandry, Government of Tamil Nadu, inaugurated five new buildings on 08.03.2022 constructed at a total budget of Rs.1.15 crores to conserve the Salem black goats under the National Agricultural Development programme at Veterinary College and Research Institute, Namakkal

- Honourable Minister for Fisheries, Fishermen Welfare and Animal Husbandry, inaugurated the 'Feed mill building and machinery' at Veterinary College and Research Institute, Tirunelveli on 15.03.2022.
- The 22nd Convocation of TANUVAS was held at the Anna Auditorium, Madras Veterinary College on 30.03.2022. Honourable Governor of Tamil Nadu and Chancellor of the University, presided and conferred degrees / diplomas to 282 candidates and delivered the presidential address.
- Veterinary Incubation Centre @ TANUVAS signed MoU with TICEL Bio Park of Tamil Nadu Industrial Development Corporation (TIDCO) in the presence of Thiru. M.K. Stalin, Honourable Chief Minister of Tamil Nadu on 06.07.2022 under the 'Naan Mudhalvan' scheme of Tamil Nadu

Government to encourage more biotechnology start-ups by developing bio-park.

- My Library on Fingertip Application (MyLOFT App), a Mobile Web app was launched by the Vice-Chancellor, TANUVAS at Madras Veterinary College on 18.10.2022 for the benefit of students, research scholars, faculty and scientists of TANUVAS.
- “TANUVAS Calf Kit” was distributed to 886 beneficiaries of free milch cow scheme through the Department of Animal Husbandry and Veterinary Services, Govt. of Tamil Nadu during the reporting period.
- Four Patents have been obtained during the year 2022, for the technologies developed by the faculty members of TANUVAS.
- A total of ten MoUs have been executed by TANUVAS with various institutions at National level to promote academic and

research collaboration. Two International MoUs has been signed with Oklahoma State University, USA and Universitas Brawijaya, Indonesia to facilitate student and faculty exchange programs.

- During the year 2022, under the National Agricultural Higher Education Project funded Institutional Development Project, the University Students Counselling and Placement Cell organized the Industrial Internship programme benefitting 91 final year B.V.Sc. & AH students of TANUVAS. Further, 10 students and 21 faculty members of TANUVAS underwent overseas training during the year 2022-23 under this project.
- On 09.03.2023, the Honourable Chief Minister of Tamil Nadu Thiru M.K. Stalin inaugurated the following new buildings constructed at a cost of Rs.189.49 crores

with the financial support of Tamil Nadu Government in the constituent colleges of Tamil Nadu Veterinary Science University through video conferencing at the Secretariat.

- New buildings inclusive of academic blocks at a cost of Rs.82.13 crores in Veterinary College and Research Institute, Theni
- New buildings including academic blocks at a cost of Rs.82.13 crores in Veterinary College and Research Institute, Udumalpet
- New buildings inclusive of veterinary herbal medicine training center and zoonotic disease laboratory constructed at a cost of Rs.11.94 crores at Veterinary College and Research Institute, Orathanadu

- Additional hostel facility for boys and girls students at a cost of Rs.7.14 crores at Veterinary College and Research Institute, Tirunelveli
- A regional referral hospital with modern facilities for the development of rural cattle farmers at a cost of Rs.4.15 crores at Veterinary College and Research Institute, Namakkal
- A carcass utilization plant with a budget of Rs.2 Crores under National Livestock Mission at Madhavaram, Chennai

17.4 Research

The University is accomplished with strong research infrastructure. There are 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, pharmaco-vigilance etc. During the reporting period of 2022-23, TANUVAS has earned 25 projects to the tune of Rs.633.06 lakhs under competitive mode from the national funding agencies for carrying out research activities at TANUVAS.

17.4.1 Schemes in progress

The Govt. of India is providing impetus for conserving native breeds and in line with this agenda, the Tamil Nadu Livestock Development Agency has sanctioned two schemes namely “Establishment of indigenous cattle unit for propagation of indigenous cattle farming” with a budget outlay of Rs. 329.72 lakhs and “Tribal community participatory breeding approach of the endangered Toda Buffalo in the Nilgiris hills for its sustainability” with a budget outlay of Rs.221.98 lakhs for implementation at TANUVAS under National Programme for Bovine Breeding and the works are in progress at TANUVAS.

The Govt. of Tamil Nadu has also sanctioned five schemes namely “Establishment of backyard poultry research and development centre at Karur district”, “Conservation of Umblachery breed through multi-disciplinary approach in the breeding tracts of Tamil Nadu” at Veterinary College and Research Institute, Orathanadu, “Regional centre for conservation of native dogs (Rajapalayam, Kanni, Chippiparai and Kombai) of Tamil Nadu at Tenkasi district”, “Pig breeding and input centre for rural development” and “Establishment of conservation centre for Nattukuttai cattle” at Post Graduate Research Institute in Animal Sciences, Kattupakkam with a total budget of Rs.548.97 lakh and the works are in progress at TANUVAS.

17.5 Technologies

In order to increase the health, production, and other value-added aspects of

meat and dairy products, TANUVAS is developing technologies. The technologies of TANUVAS ready for commercialization are CRISPR/Cas12 assay-based detection for *Ehrlichia canis* and *Babesia gibsoni* genome in dog blood sample; CRISPR/Cas12 assay for the detection of ORF Virus genome from scab lesion; CRISPR/Cas12 assay for detection of Lumpy Skin Disease Virus in cattle; Porcine circovirus type 2 (PCV2) capsid vaccine and viral vectored vaccines against animal pathogens; ELISA kit for serosurveillance and diagnosis of *Babesia gibsoni* in dogs; Macrophage enriched *Theileria annulata* schizont infected cell culture as potential anti-theileria vaccine candidate; Thermo-reversible polymer for intramammary drug delivery and value added products on Moist Pet food for adult dogs and Chicken meat pickle.

During the year 2022-23, the following technologies developed by the faculty members

of TANUVAS were transferred to the companies by execution of Memorandum of Agreement.

- Vero cell adapted Lumpy skin disease virus strain to M/s. Biovet Private Limited, Malur, Karnataka.
- *Theileria annulata* vaccine candidate to M/s. Hester Biosciences Ltd., Ahmedabad.
- Teat protect, TANUCHEK SCC kit, Nanomethicone, Prosync NC and NF to M/s. Jeshron Biotech Solution Private Ltd., Chennai.

17.6 Capacity building programmes

TANUVAS conducted various capacity building programmes for students as well as for faculty members to update their knowledge on the latest advancements in Veterinary, Animal and Food Sciences.

17.6.1 Initiatives for Students

- TANUVAS observed 'Cyber Jaagrookta Diwas' by organizing cyber security awareness online programme on 05.01.2022 for the benefit of staff and students of the constituent units of TANUVAS.
- A lecture cum hands-on session on "Effective usage of Consortium for e-Resources in Agriculture (CeRA)" was organized at College of Food and Dairy Technology, Koduveli on 03.02.2022 for the benefit of students.
- VIF@TANUVAS organized workshops on "Vetpreneurship opportunities for students at VIF@TANUVAS" at constituent colleges of TANUVAS benefitting 437 students and 68 faculty members.

17.6.2 Initiatives for Faculty members

- A training on 'Wildlife, Exotic Pets and Emerging Zoonoses' was conducted at

Madras Veterinary College on 06.01.2022 and 07.01.2022 benefitting 13 trainees consisting of forest and zoo veterinarians.

- With the sponsorship of State Agriculture Management and Extension Training Institute (SAMETI) Pudukkottai, two training programmes viz. "Application of diagnostic imaging in animal reproduction" (02.02.2022 to 04.02.2022) and "Recent advances in fodder production technology" (08.02.2022 to 10.02.2022) were organized at Veterinary College and Research Institute, Orathanadu for 60 field veterinary assistant surgeons of Department of Animal Husbandry and Veterinary Services, Government of Tamil Nadu.
- In collaboration with the Association of Veterinary Dermatology, India, TANUVAS organized the "International Conference on Advancing Veterinary Dermatology Practice,

Education and Research in Developing Countries” from 09.06.2022 to 11.06.2022 at Madras Veterinary College. Honourable Minister for Fisheries, Fishermen Welfare and Animal Husbandry, Government of Tamil Nadu released the conference proceedings. A total of 650 participants comprising of delegates, scientists, veterinary practitioners and students benefitted.

- A training programme on “Recent advances for enhancement of bovine fertility” was conducted at Veterinary College and Research Institute, Namakkal and Veterinary College and Research Institute, Orathanadu from 26.10.2022 to 28.10.2022 and from 08.11.2022 to 10.11.2022 respectively for 60 field veterinarians of Government of Tamil Nadu.

- TANUVAS and National Innovation Foundation, India jointly organized sensitization workshop on “Promoting indigenous technologies in the field of veterinary sciences” at Farmers Training Centre, Theni on 17.11.2022 for the benefit of 33 Veterinary officers of Theni District.
- A training programme on 'Management of animals in disaster' was conducted at Tiruvallur, Tiruvarur and Orathanadu benefitting 174 field Veterinary Assistant Surgeons during the reporting period.
- During the reporting period, training programme on 'Avian and exotic pet medicine – emergency and critical care management' was organized at Veterinary College and Research Institute, Orathanadu benefitting 44 field veterinarians.

17.7 Clinical services

The university is home to a first-rate network of teaching veterinary facilities that provide clinical services for farm and companion animals. A total of 2,76,582 animals were treated during the year 2022. Referral facilities with ultrasonography, endoscopy, electrocardiography, orthopaedics, haemodialysis, ophthalmology, dermatology, canine blood bank, etc. are available at all the teaching veterinary hospitals. CT scan facility is also available at Madras Veterinary College and Veterinary College and Research Institute, Namakkal. Utilizing these facilities, a total of 40,145 animals were treated during the reporting period.

The commencement of clinical services at newly established state of the art Veterinary Clinical Complex at Veterinary College and Research Institute, Salem was inaugurated by

the Vice-Chancellor, TANUVAS on 03.06.2022 for carrying out clinical activities.

During the reporting period, six training programmes on latest clinical service activities were conducted benefitting 95 veterinarians from private companies.

17.8 Extension Activities

By carrying out capacity building programmes, frontline demonstrations and on-farm trials, university outreach efforts are aimed at equipping farmers, farm women, rural youth, school dropouts and self-help groups with scientific livestock and poultry farming methods for their livelihood. The innovations created by TANUVAS for livestock and poultry were also promoted through print, electronic, and e-Extension activities.

During 2022, a total of 1,854 trainings benefitting 67,517 farmers, and 2,19,892 advisory services were given to farmers by this

University through its various outreach units in the districts besides offering inputs for livestock farm activities. Some of the important events organised for the farming community during 2022 are:

- A training programme on “Transfer of value-added milk products technology to Gaja cyclone affected dairy farmers of Cauvery delta region for income generation” was conducted at Veterinary College and Research Institute, Orathanadu during February 2022 benefitting 50 farmers of delta region.
- At Veterinary College and Research Institute, Orathanadu, training programme on “Traditional herbal remedies for primary health care of livestock and poultry” was organized from 02.03.2022 to 03.03.2022 benefitting 50 farmers.

- A regional livestock, poultry exhibition and seminar on “Enhancing the productivity of desi fowls by scientific interventions” was organized at Veterinary College and Research Institute, Tirunelveli on 29.04.2022 and 30.04.2022. Honourable Minister for Fisheries-Fishermen Welfare and Animal Husbandry, Government of Tamil Nadu, released the compendium and distributed inputs to 319 beneficiaries.
- With the sponsorship of State Agriculture Management and Extension Training Institute (SAMETI), a training programme on "Productive livestock farming" was conducted from 23.08.2022 to 29.08.2022 at Veterinary College and Research Institute, Orathanadu benefitting 28 unemployed youth farmers.

17.8.1 Distance Education courses

The Directorate of Distance Education is offering 22 PG diploma courses for the veterinarians to update their knowledge and skills on latest technologies in animal husbandry and veterinary sciences. In addition, 10 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.

During the year 2022-23, 114 students enrolled for 19 PG diploma courses, 39 persons for 2 skill development courses and 790 farmers and unemployed youths for 8 self-employment courses offered through distance education mode.

17.9 Awards / recognitions

- Krishi Vigyan Kendra (KVK), Namakkal was recognized for its outstanding achievement

in transferring the banana related technologies with a national level “Best KVK award-2022” during 29th Foundation Day cum Kisan Mela of National Research Centre for Banana, Trichy conducted on 20.08.2022.

- NABL accreditation certification has been renewed for Rabies Diagnostic Laboratory at Madras Veterinary College up to 2023 and for Animal Feed and Quality Control Laboratory at Veterinary College and Research Institute, Namakkal up to 2024.
- During the year 2022, a total of four patents have been obtained for the following technologies developed by the faculty members of TANUVAS.

1. Genotype specific cell culture vaccine for Newcastle disease

2. Nutraceutical chocolate fortified with omega 3 fatty acid derived from Chia seed variants
3. Least calorific and low-fat pearl millet Ice cream fortified with antioxidants derived from musk melon
4. Composition to enhance rumen fermentation and mitigating methane emission in dairy cattle

17.10 Start-ups in Livestock sector

To nurture Start-ups and entrepreneurs in the area of veterinary, animal sciences and allied sectors, TANUVAS established a Veterinary Incubation Foundation (VIF) in the year 2019 with the financial support of Entrepreneurship Development and Innovation Institute (EDII), Chennai, a Government of Tamil Nadu undertaking. The salient activities of VIF during 2022-23 are:

- A total of 24 start-ups were incubated at VIF@TANUVAS during the year 2022 to develop novel animal husbandry based products/technologies.
- National Conference on “Promoting Start-up programme on Veterinary Entrepreneurship” was organized from 27.04.2022 to 29.04.2022 at Madras Veterinary College benefitting 120 students. The incubatees also exhibited their innovative products developed at VIF@TANUVAS.
- Farmers conference on Demonstration of innovative technologies of VIF @ TANUVAS at Vathiyur village, Kancheepuram district was conducted on 23.11.2022.
- M/s. Jeshron Biotech Solutions, incubatee of VIF@TANUVAS received financial assistance under EDII- Innovative Voucher Program-B on 16.12.2022.

- M/s. Ariviya Technologies, incubatee of VIF@TANUVAS received financial support – TANSEED-3.0 from Startup.
- Entrepreneurship awareness was created among final year Under-graduate students of TANUVAS by VIF@TANUVAS.

17.11 Industry-Institute Linkage

The activities of TANUVAS ensuring research and academic collaboration with industries/ institutes by executing Memorandum of Understanding/Memorandum of Agreement during 2022 are furnished below:

- Tamil Nadu Agricultural University, Coimbatore.
- Tamil Nadu Rural Transformation Project, Chennai
- Madras Crocodile Bank Trust, Chennai
- TICEL Bio Park Ltd., Chennai

- M/s. Biovet Pvt. Ltd., Bengaluru
- Oklahoma State University, Stillwater, USA
- ICAR–Central Tuber Crops Research Institute, Thiruvananthapuram
- ICAR-Central Institute for Research on Cattle, Meerut
- M/s Hester Biosciences Ltd, Ahmedabad
- INFLIBNET Centre, University Grants Commission, New Delhi
- Universitas Brawijaya, Indonesia
- Hindu Religious and Charitable Endowments Department, Government of Tamil Nadu
- Aringnar Anna Zoological Park, Vandalur
- M/s. Jeshron Biotech Solution Private Ltd., Chennai

- Nanaji Deshmukh Veterinary Science University, Jabalpur

17.12 Priorities for 2023-24

TANUVAS can progress by collaboration and tie-ups to promote not only livestock sector, but also the well-being of the public 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.

Considering the above, TANUVAS envisions the following activities:

- Integrated veterinary hospital information systems for advancing animal care in TANUVAS hospitals
- Strengthening One Health approach

- Addressing infertility and repeat breeding in cattle and buffaloes through assisted reproductive techniques
- Conservation of native germplasms of Tamil Nadu
- Mitigating methane emission in dairy cattle and enhancing milk production
- Augmenting green fodder production by establishing fodder seed farms
- Popularization of TANUVAS GRAND supplement and anionic salt supplements to augment dairy production and to mitigate milk fever in dairy cattle of Tamil Nadu
- Implementing disease control measures for the emerging diseases in livestock including Lumpy Skin Disease in cattle
- International tie-ups in the area of academic and research programmes

- Skill development training on animal husbandry activities to unemployed youth and rural women
- Continuing veterinary education programme for veterinary professionals
- Strengthening of e-governance initiatives through development of management systems and user apps
- 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

18. Budget Estimate for the year 2023-2024

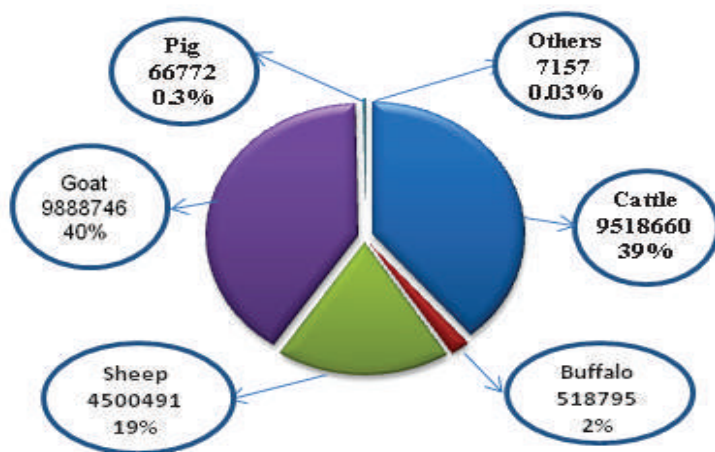
Rs. In thousands				
SCHEME DESCRIPTION	REVENUE	CAPITAL	LOAN	TOTAL
Salaries	7346837	0	0	7346837
Non Salaries	1068309	0	0	1068309
State Schemes	747251	0	0	747251
Central sector schemes	12	2	0	14
Externally Aided projects (IAMWARM-World Bank Scheme)	26642	0	0	26642
Central and State Shared Schemes	43361	1	0	43362
Schemes sponsored by Autonomous Bodies	186	0	0	186
Infrastructure (State fund)	0	55642	0	55642
Infrastructure - NABARD	77	1067400	0	1067477
Infrastructure - AIIRLIVAS	21866	287788	0	309654
00602 - Animal Husbandry	9254541	1410833	0	10665374
00601 - Secretariat	108616	0	4000	112616
00603 - TANUVAS	3741095	0	0	3741095
Grand Total	13104252	1410833	4000	14519085

19. CONCLUSION

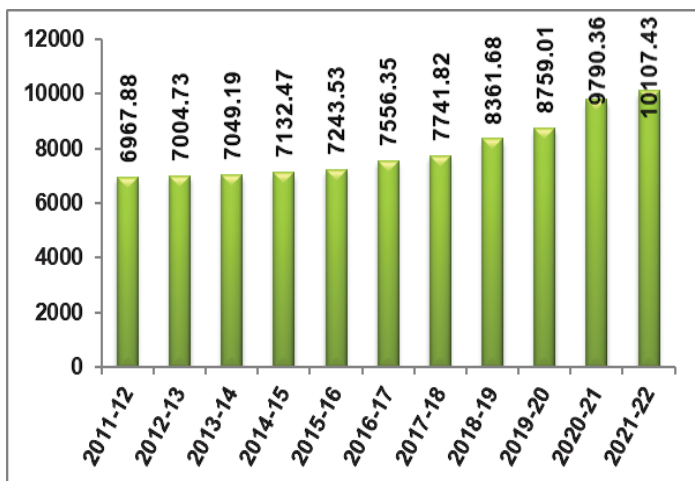
Rural economic improvement through initiatives in Animal Husbandry sector has been given special impetus by this Government. Livestock Policy through appropriate programmes and investments helped in achieving substantially higher growth rate for milk, meat and egg products. This has made available the required quantity of much needed animal protein to the rural poor. Further, the sector has tremendous potential to generate employment, provide nutritional security, enhanced household income through increased productivity and thus help in poverty reduction among the rural poor and transformation of rural scenario. It is acting as an engine in poverty alleviation by making assetless poor into income generating asset owning population.

ANITHA R. RADHAKRISHNAN
Minister for Fisheries - Fishermen
Welfare and Animal Husbandry

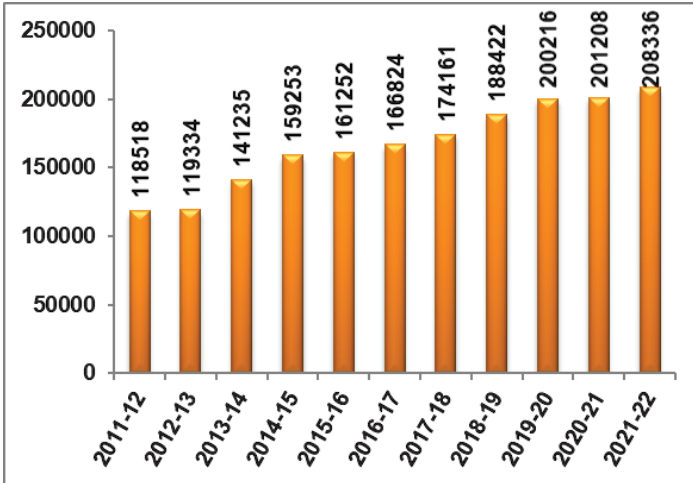
Livestock census – 2019 Share of Major species



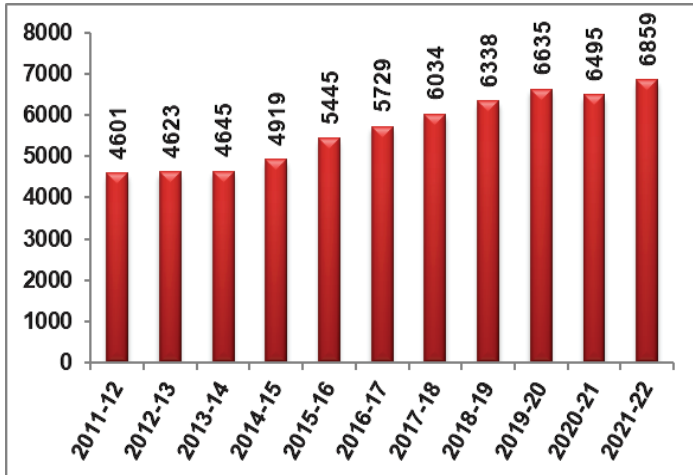
Estimated Milk Production (Lakh Metric Tonne)



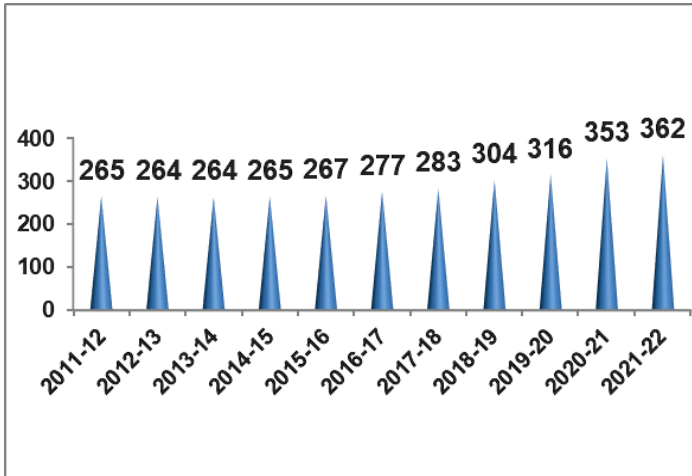
Estimated Egg Production (Lakh nos.)



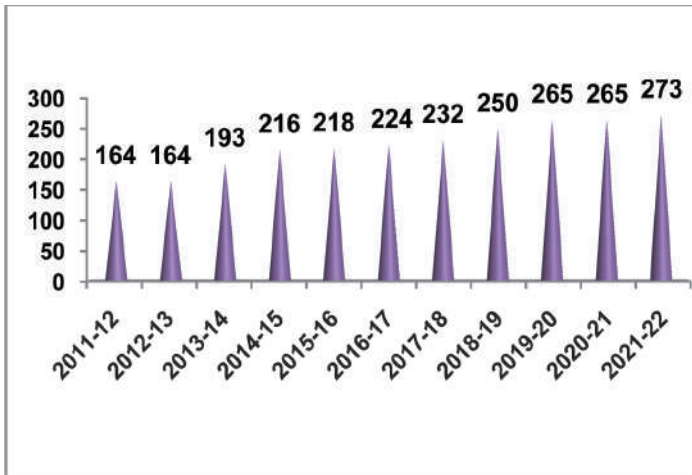
Estimated Meat Production (Lakh kgs.)



Percapita availability of Milk (Grams/day)



Percapita availability of Egg (Nos./year)





Hon'ble Chief Minister of Tamil Nadu presented appointment orders on 18.04.2022 to Veterinary Assistant Surgeons, selected through TNPSC



Hon'ble Chief Minister of Tamil Nadu presented Small Scale Native Chicken Scheme benefits on 29.11.2022 during Government Welfare Scheme Distribution Function held at Perambalur

EXOTIC BREEDS OF CATTLE



HOLSTEIN FRIESIAN



JERSEY

NATIVE BREEDS OF BOVINES



ALAMBADI



KANGAYAM



BARGUR



PULIKULAM

NATIVE BREEDS OF BOVINES



UMBLACHERY

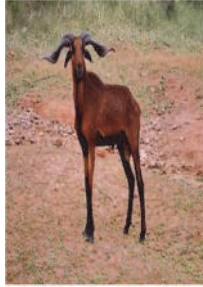


TODA BUFFALO

NATIVE BREEDS OF SHEEP



MADRAS RED



KILAKARISAL



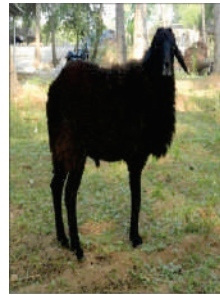
MECHERI



CHEVAADU



COIMBATORE



TIRUCHI BLACK

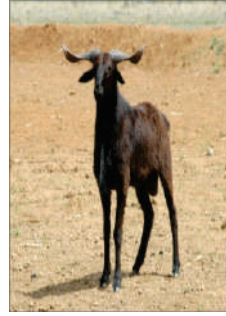
NATIVE BREEDS OF SHEEP



SEMBUR



RAMNAD WHITE



KATCHAIKATTY

NATIVE BREEDS OF GOATS



KANNI ADU



SALEM BLACK



KODI ADU

NATIVE BREEDS OF DOGS



RAJAPALAYAM



CHIPPIPARAI



KANNI



KOMBAI

POULTRY BREEDS RAISED IN TAMILNADU



ASSEL



KADAKNATH

