



सत्यमेव जयते

GOVERNMENT OF INDIA

MINISTRY OF FISHERIES, ANIMAL HUSBANDRY AND DAIRYING
DEPARTMENT OF ANIMAL HUSBANDRY AND DAIRYING

SKILL DEVELOPMENT FRAMEWORK



Table of Contents

Chapters

Pages

01

Introduction

2

02

Skill in Livestock sector – SWOT Analysis

4

03

Skill Development Framework – Scope of Applicability

6

04

Skill Development Process Cycle - Department of Animal Husbandry & Dairying (DAHD)

9

05

Autonomous bodies in the Department of Animal Husbandry and Dairying

16

06

Current Skill Development Programmes in the Department

19

07

Synergy with Sectoral Skill Councils

21

08

Skill Development Through The i-GOT Platform

23

09

Skill Requirements and Gaps: An Analysis

26

10

Action Plan for Skill Development: Community Lead Action

33

Annexures

Definitions

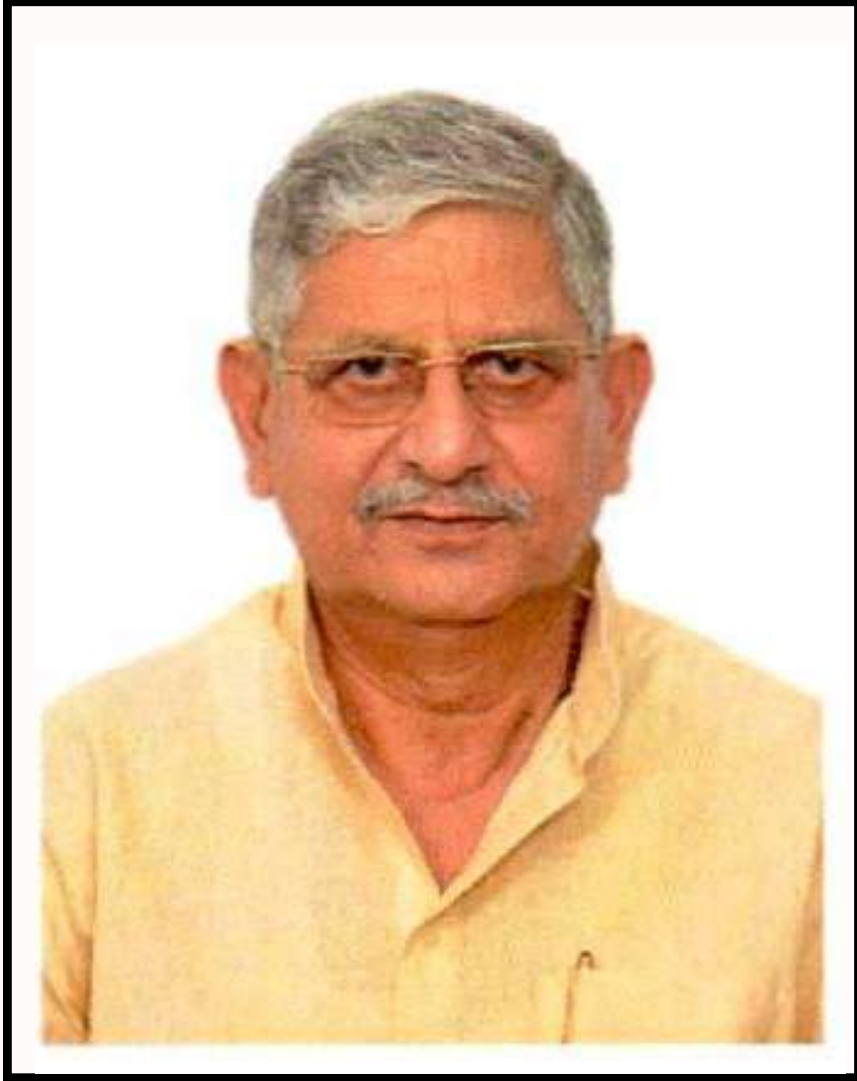
41

List of Acronyms

42

Cost Norms

44



Message

Shri Rajiv Ranjan Singh alias Lalan Singh

Hon'ble Minister of Fisheries,
Animal Husbandry and Dairying
Government of India

“

India's livestock sector continues to be a pillar of strength for the economy, ensuring food security and providing sustainable livelihoods. Our nation has been a global leader in dairy and livestock production, and this success has been built on the hard work of millions of farmers. The Skill Development Framework by the Department of Animal Husbandry and Dairying is a crucial step in nurturing and enhancing the skills of these farmers and other stakeholders.

This initiative will ensure that the livestock sector remains competitive by empowering individuals with the latest knowledge and training. The framework aligns with the vision of the government of 'Atmanirbhar Bharat,' emphasizing self-reliance through skill enhancement and capacity building. I am confident that this initiative will lead to improve productivity, innovation, and economic growth within the sector.

I extend my best wishes to all involved in this transformative project. Together, we can ensure that our livestock sector continues to thrive, supporting the aspirations of rural India.

”

(Rajiv Ranjan Singh)



Message

Prof. S.P. Singh Baghel

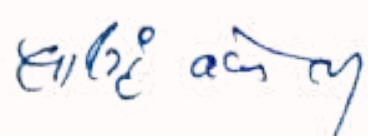
Hon'ble Minister of State of
Fisheries, Animal Husbandry and
Dairying
Government of India

“ India, with the highest livestock population globally, holds a prominent position in the world's livestock sector. The country also excels in poultry population, leading to its top rank in milk and buffalo meat production and second place in egg production. However, the productivity per animal is not on par with global standards. Bridging this productivity gap requires skilling.

Skilling in animal husbandry boosts productivity by providing farmers with knowledge of best practices, modern technologies, and scientific methods. This results in healthier livestock, optimized feed management, and improved breeding practices, ultimately enhancing milk and meat production and increasing farm income. Additionally, skilling is crucial for integrating a scientific approach to animal husbandry, including better breeding practices, disease management, and nutrition. This ensures healthier and more productive livestock, thereby increasing farm profitability.

I am pleased that the Department of Animal Husbandry and Dairying has developed a framework to systematically enhance skilling in the sector through education, training, and a scientific approach. By aligning with global standards, this framework ensures that India continues to lead in sustainable livestock management and development.

I extend my heartfelt appreciation to everyone involved in this transformative project. Together, we can ensure the continued prosperity of our livestock sector, supporting the aspirations of rural India. ”


(Prof. S.P. Singh Baghel)



Message



Smt. Alka Upadhyaya

Secretary - Animal Husbandry and
Dairying
Government of India

“ India has vast resource of livestock and poultry, which plays a vital role in improving the socio-economic conditions of rural masses. Livestock forms an important livelihood activity, supplementing incomes, offering employment opportunities. Agriculture diversification through animal husbandry is one of the primary drivers of growth in rural incomes. The contribution of Livestock sector in Agricultural GVA is 30.19% with CAGR of 16.2%. The Dairy Industry itself is to the tune of Rs. 12 lakh crore, similarly poultry sector has grown to about Rs. 2 lakh crore. The engine of growth in livestock sector are the rural communities. There is immense potential to improve production, productivity and improvise farming systems for which solicits skill upgradation.

This department is working towards empowering livestock sector through skilled youth, farmers, entrepreneurs, livestock management, fostering economic prosperity, and ensuring nutritional security, while championing Disease Free Zones for enhanced animal health.

This skill framework hinges on the Hon'ble Prime Minister's clarion call of Skill India and to empower rural youth. It provides a comprehensive approach to skills development within the livestock sector, catering to the diverse needs of stakeholders and contributing to the overall sustainability and growth of the sector in India.

I am proud of the department's efforts in creating this comprehensive framework, which will not only improve the quality of livestock production but also foster innovation and professionalism in the sector. ”


(Alka Upadhyaya)

Foreward



Ms. Varsha Joshi

Additional Secretary - Department
of Animal Husbandry & Fisheries
Government of India

“

India's livestock sector is a key driver of rural prosperity and agricultural resilience, providing critical support to millions of families across the country. It is essential to build the right skills and capacities in this sector to ensure it remains a strong pillar of our national development, addressing both current needs and future challenges.

This framework emphasizes a holistic approach to skill enhancement, focusing on advanced veterinary practices, sustainable farming techniques, and modern technologies such as data-driven disease control and genetic improvements. By aligning with global best practices, the framework prepares India's livestock professionals to compete at the highest levels internationally.

This document has been prepared to provide a thorough framework for skill development in the animal husbandry and dairying sector. We hope it will lead to significant improvements in livestock production quality while also fostering innovation and professionalism in the industry. My

”

best wishes to all those who are a part of this transformative initiative.


(Varsha Joshi)



Introduction

Livestock Sector

The livestock sector is vital to the Indian economy, contributing significantly to GDP and rural employment. The contribution to total Livestock GVA (at constant prices) was 30.19% of Agricultural and Allied Sector GVA and 5.73% of Total GVA in 2021–22. It provides livelihood to 8 crore farmers and landless labourers and contributes to food security by producing milk, meat, eggs, and other animal products.

India has tremendous potential for developing dairy, livestock, and poultry, especially in rural areas. As per the 20th Livestock Census, there are 303.76 million bovines (Cattle, Buffalo, Mithun, and Yak), 74.26 million Sheep, 148.88 million Goats, 9.06 million Pigs, and about 851.81 million Poultry, which play a vital role in improving the socio-economic conditions of rural areas. The continuous growth of the sector creates a positive momentum in the food production supply chain market and makes it more skill-intensive.

To mitigate the issues related to climate change, carbon emission, One Health etc., skilled workforce support system is required to educate and prompt the farmers to follow the improved feeding practices, waste management, and effective use of resources and make livestock farming sustainable and profitable.

Further, the livestock sector in India lacks several skills that need to be developed or strengthened according to demand and technological upgradation. Identifying those gaps is crucial to formulating effective training and skill enhancement strategies for various stakeholders. Skill development of farmers and farm labourers will enhance productivity and ensure a sustainable source of livelihood. Therefore, it is necessary to augment the knowledge and skill levels of the workforce through continuous skilling, upskilling and reskilling, essential to enhance resource productivity, boost innovation, manage finance, mitigate risks, and improve decision-making ability to enable sustainable livestock production.

Demand for a Skilled workforce

As per, National Policy on Skill Development and Entrepreneurship 2015, India being the Youngest Nations in the world with more than 62% of its population in the working age group (15–59 years), and more than 54% of its total population below 25 years of age. Its population pyramid is expected to bulge across the 15–59 age group over the next decade.

The country presently faces a dual challenge of lack of a highly trained workforce, as well as non-employability of large sections of the conventionally educated youth, who possess little or no job skills.

In fact, during the next 20 years, the workforce in the industrialized world is expected to decline by 4%, while in India it will increase by 32%. This poses a formidable challenge and a huge opportunity. To reap this demographic dividend expected to last for the next 25 years, the livestock Sector will play a crucial role in equipping its workforce with employable skills and knowledge so that they can contribute substantively to the country's economic growth. Apart from meeting its demand, India has the potential to provide a skilled workforce to fill the expected shortfall in the global Livestock sector.



Skills in Livestock Sector: SWOT Analysis

In the vibrant landscape of the Indian livestock industry, skilled workforce challenges are inevitable. Addressing these hurdles efficiently is crucial for maintaining productivity, sustainability, and growth of the sector. This chapter delves into the key challenges and offers insights into the potential solutions that can empower businesses to not just survive, but thrive in this dynamic field.

STRENGTH

1. Versatile Livestock Population:

India has a vast and diverse livestock population i.e., 535.78 million livestock and 851.81 million poultry, including livestock cattle, buffalo, goats, sheep, poultry, and more, providing a broad base for skill development.

2. Traditional Knowledge:

Many rural communities have deep-rooted traditional knowledge of animal husbandry and livestock management, which can be leveraged and modernized.

3. Government Initiatives:

Various government schemes and programs aim to promote livestock sector development, such as the National Livestock Mission and Rashtriya Gokul Mission.

4. Growing Market Demand:

Increasing demand for livestock products (milk, meat, eggs) both domestically and internationally, driving the need for skilled manpower. The world's population will reach 9.7 billion by 2050 and to feed them requires an additional 5.5 MT milk and 107 MT meat.

5. **Marginal/Landless farmers** are involved. Genetic resources owned by Females.

WEAKNESS

1. Limited Access to Training:

Inadequate access to quality livestock-related training programs, especially in remote and rural areas.

2. Low Adoption of Technology:

Slow adoption of modern technologies and practices in livestock management due to a lack of awareness and resources.

3. Fragmented and unorganized Sector:

The highly fragmented nature of the livestock sector makes it difficult to implement standardized training and development programs.

4. **Insufficient infrastructure** for training, including a lack of modern training facilities and extension services.

OPPORTUNITIES

1. Technological Advancements:

The use of technology such as AI, IoT, ETT and Sex Sorted Semen can revolutionize livestock management by skilling more youth under the above categories.

2. Entrepreneurship:

Growing opportunities for entrepreneurship in livestock farming, dairy, and related industries can drive skill development.

3. Export Potential:

Increasing global demand for Indian livestock products can be tapped through enhanced skills and improved product quality.

4. E-Learning Platforms:

The development of e-learning platforms and mobile applications can facilitate remote skill development and knowledge sharing.

5. **Public-Private Partnerships:** Potential for collaboration between government, private sector, and NGOs to enhance skill development initiatives.

THREATS

1. Climate Change:

Adverse effects of climate change on livestock health and productivity pose a significant threat. There is a need to skill up in this area.

2. Disease Outbreaks:

Frequent outbreaks of livestock diseases can disrupt. Skill development and training efforts on biosecurity and disease management will reduce the impact on production

3. **Fluctuations in market prices** for livestock products can impact sustainability.

4. Socio-Economic Factors:

High levels of poverty and illiteracy in rural areas can limit the effectiveness of skill development initiatives.

5. **Lack of Value chain/market support in Rural areas**

The above table shows that India's livestock sector is marked by a diverse livestock population and deep-rooted traditional knowledge, supported by government initiatives and growing market demand for livestock products, creating a favourable situation to grow.

It also indicates that the livestock industry has an ever-present need for skilled labour. As we are moving towards more industrialisation, there is Seasonal Labour Needs, such as during calving and harvesting seasons, pose a significant challenge to the industry. Managing these fluctuations efficiently is vital. Therefore, developing and maintaining a workforce with specialized skills and required capabilities is a constant challenge.



Skill Development Framework: Scope of Applicability

This Skills Development Framework aims to facilitate, monitor and coordinate Skills Development activities within the Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India. In terms of this Framework, skills development refers to education, training and development activities designed to help livestock farmers, frontline workers like Veterinary professionals, entrepreneurs, extension workers and other supply chain functionaries to gain knowledge, skills and attitudes that would improve their performance in the positions that they currently hold and improve their future prospects.

This framework will help the department with a well-coordinated and coherent approach to Skills Development interventions.

Purpose

The purpose of this framework is to facilitate the provision of the skills base that is required for the achievement of the Department's strategic objectives and the capacity building of all stakeholders including rural youths. In cognizance of the provisions of the relevant policy directives, this Framework is geared towards:

- Ensuring equitable access to and participation in properly structured training and skills development interventions that will lead to the acquisition of competencies that will enable the aspirants to enhance their work or job performance, thus, resulting in improved service delivery.
- Providing specific guidelines with respect to skills development programmes and initiatives in the Department of Animal Husbandry and Dairying.
- Providing for a standardised approach to the implementation of skills development programmes of the Department.
- Monitoring and evaluating the implementation of skills development in the Department
- To inculcate a spirit of upskilling and re-skilling of the competencies required for different job roles.

Scope of Applicability

This framework provides a comprehensive approach to skills development within the livestock sector, catering to the diverse needs of stakeholders and contributing to the overall sustainability and growth of the sector in India.

Geographical Scope: This framework is applicable across the country to ensure equitable access and participation in skills development interventions for stakeholders nationwide.

Stakeholders: The framework applies to a diverse range of stakeholders involved in the livestock sector, including but not limited to:

- Livestock farmers
- Frontline workers
- Entrepreneurs
- Extension workers
- Veterinary professionals
- Veterinary paraprofessionals
- Community Animal Health Workers (CAHWs)

Sector Coverage: Encompassing the entirety of the livestock sector, the framework addresses skill development needs related to:

- Livestock farming
- Animal breeding
- Animal care and management
- Dairy production
- Animal health services
- Outbreak monitoring
- Disease Surveillance and Sampling

Proficiency Enhancement: The framework aims to enhance the proficiency of stakeholders in their current job roles while also preparing them for future roles, thereby contributing to the sustainability of livelihoods, national income, and food security in India.

Alignment with Global Initiatives: This framework is tried to align with the World Organization for Animal Health (WOAH), which emphasizes competency-based training for veterinary professionals and the development of Community Animal Health Workers (CAHWs) to provide essential animal health services at the grassroots level. It also aligns with the objectives of the Food and Agricultural Organization's efforts to enhance the skill and capacity building of the rural farming community.

CHAPTER 4

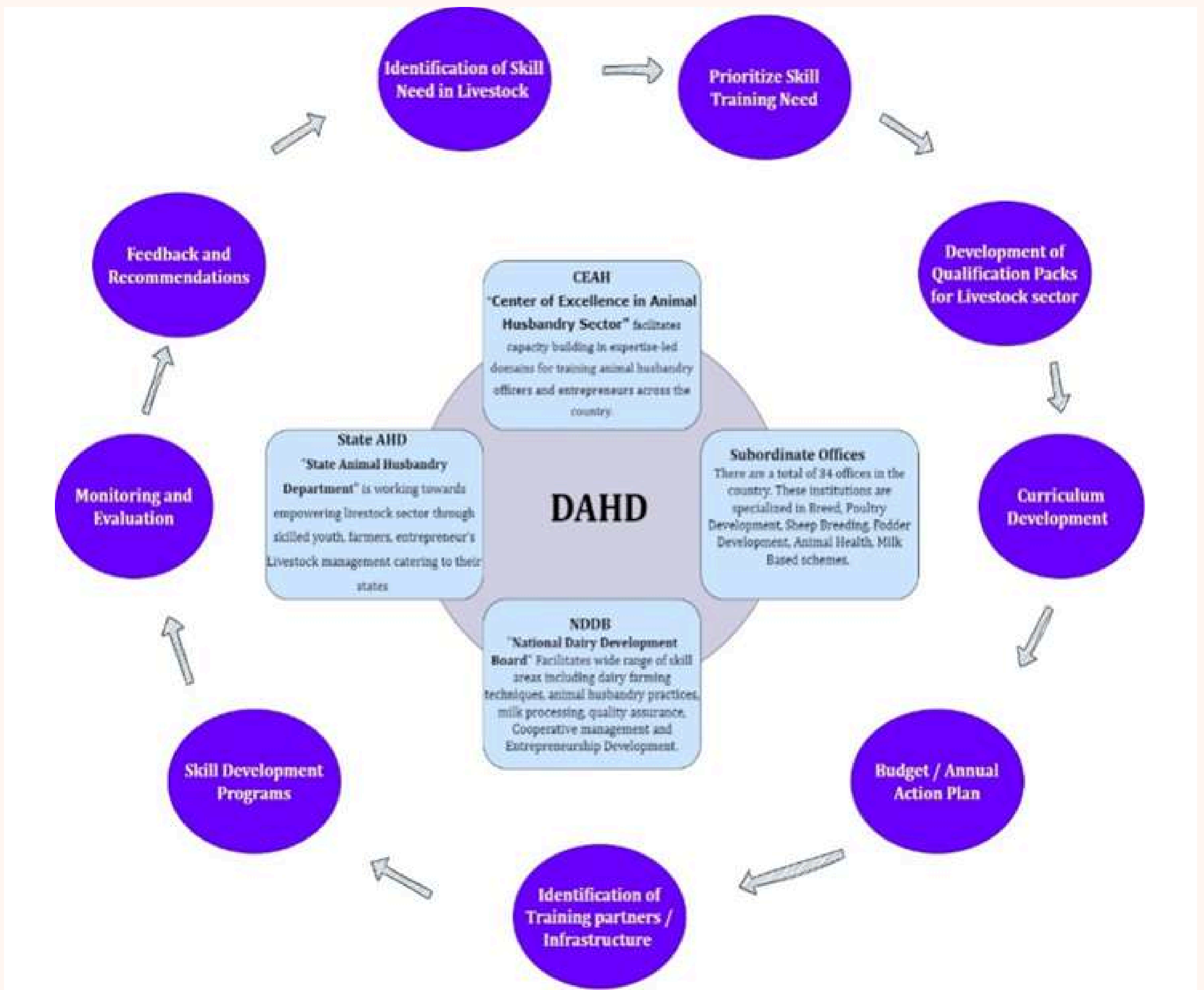
Skill Development Process: Department of Animal Husbandry & Dairying (DAHD)

The Department of Animal Husbandry and Dairying is one of the Departments under the Ministry of Fisheries, Animal Husbandry and Dairying vide Cabinet Secretariat's Notification No. S.O. 1972 (E) dated 14.06.2019. The Department of Animal Husbandry and Dairying originally came into existence on February 1, 1991, by the merger of two Divisions of the Department of Agriculture and Cooperation Viz. Animal Husbandry and Dairy Development into a separate Department.

This department is working towards empowering the livestock sector through skilled youth, farmers, and entrepreneurs' livestock management, fostering economic prosperity, and ensuring nutritional security while championing disease-free zones for enhanced animal health.

The Department looks after the administration of the following field /subordinate Offices spread all over the country.

Sl. No.	Subordinate Offices	Number
1	Breed Improvement Institutes	12
2	Central Poultry Development Organizations	5
3	Central Sheep Breeding Farm	1
4	Central Fodder Development Organizations	8
5	Chaudhary Charan Singh National Institute of Animal Health, Baghpat	1
6	Animal Quarantine Certification Service Stations	6
7	Delhi Milk Scheme	1
	Total	34



Statutory/Autonomous Body- National Dairy Development Board (NDDB)

The National Dairy Development Board (NDDB) is a statutory body established in 1965 located at Anand, Gujarat statutory body corporate in 1987 under the NDDB Act, is a premier institution to accelerate the pace of dairy development on cooperative lines in the country by the Government of India to promote, finance, and support dairy development programs across the country. NDDB continues to play a pivotal role in fostering sustainable dairy production practices, facilitating market linkages, and improving livelihoods for millions of dairy farmers, thus contributing significantly to India's socio-economic development and food security.

Skill Development- Field Institutions under DAHD

1. CEAH (Centre of Excellence in Animal Husbandry Sector)

CEAH-Bengaluru is set up under the Government of India, Ministry of Fisheries, Animal Husbandry & Dairying, and Department of Animal Husbandry & Dairying as a consortium of 5 organizations at Hessarghatta vides Order No. F.A-430011/3/2023-Estt (HQs), dated, 14th March, 2023. This Academy is formed as per the guidelines of DoPT for the National Programme for Civil Service Capacity Building (NPCSCB) under "Mission Karmayogi" of the Government of India.



The institution is spread over 642 acres distributed over four campuses at Hessarghatta. Campus – 1 consists of the Central Poultry Development Organization & Training Institute (CPDO&TI), Campus 2 consists of the Central Frozen Semen Production & Training Institute (CFSPTI) and Central Cattle Breeding Farm (CCBF), Campus – 3 consists of Animal Quarantine and Certification Services(AQCS) and Campus – 4 consists of Regional Fodder Station (RFS).



It has state-of-the-art automation units for poultry, Modern dairy sheds, an ET lab, a Sex-sorted semen lab, an International Animal Quarantine facility, biggest fodder unit in the country with the latest technology adoption for irrigation. The Academy consists of four campuses with conference halls, classrooms, officers, and farmers' hostels with boarding and lodging facilities. CEAH facilitates capacity building in expertise-led domains for training animal husbandry officers and entrepreneurs across the country.

2. Chaudhary Charan Singh National Institute of Animal Health, Baghpat

CCSNIAH, Baghpat has been established at Baghpat, Uttar Pradesh to undertake the quality control and assurance of standard, efficient, and safe veterinary biologicals in India and to act as a nodal institute to recommend licensing of veterinary vaccines in the country with a vision to promote healthy and productive livestock in Indian subcontinent using standard, efficient and safe veterinary biological.



It has been entrusted with the responsibility of carrying out quality control testing of Foot and Mouth Disease vaccines under NADCP for FMD & Brucellosis. The institute has been recognized as Central Drugs Laboratory (CDL) by the Ministry of Health & Family Welfare.

NIAH is a premier institution dedicated to animal health research, diagnostics, and surveillance. It provides vital support in disease prevention, control, and promoting animal welfare through cutting-edge



veterinary science. They conduct several types of training courses for animal health in response to requests from governments and international organizations.

3. Regional Fodder Stations (RFS)

The Department has Eight Regional Fodder Stations, established in different agro-climatic zones of the country and are engaged in the production of quality fodder seeds, training, and other extension activities related to fodder development in the country.



These Eight Regional Fodder Stations are located at Hessarghatta, Bengaluru (Karnataka), Ravirala, Hyderabad (Telangana), Dhamrod, Surat (Gujarat), Hisar (Haryana), Suratgarh (Rajasthan), Suhama (Jammu & Kashmir), Alamadhi (Tamil Nadu) and Kalyani (West Bengal).

4. Central Sheep Breeding Farm, Hisar (Haryana)

CSBF, Hisar was established in 1969-70 in collaboration with the Government of Australia under the Colombo Plan during the Fourth Five Year Plan with the objectives of producing acclimatized exotic rams for distribution to various State Sheep farms and training of personnel in Sheep Management and Mechanical



Sheep Shearing. Presently the farm is keeping Nali X Ramboulett and Sonadi X Corriedalecrosses, as well as purebred Beetal goats.



CSBF is pivotal in improving sheep breeds for enhanced productivity and disease resistance. Through selective breeding and genetic improvement programs, it contributes to the development of robust and resilient sheep populations. This institute offers training programs for sheep and goat management and its production.

5. Breed Improvement Institutes

Central Cattle Development Organizations include seven Central Cattle Breeding Farms, one Central Frozen Semen Production and Training Institute, and four Central Herd Registration Units established in different regions of the country to produce genetically superior bull calves, quality frozen semen from High Genetic Merit Bulls (HGM) and for identification and location of superior germplasm of indigenous breeds of cattle and buffaloes, to meet the requirement of HGM bulls and frozen semen doses in the country. These organizations also play an important role in the training of manpower in frozen semen technology and the training of farmers and entrepreneurs in farm management.

5.1. Central Cattle Breeding Farms (CCBFs)

The Central Cattle Breeding Farms were introduced by Govt. of India in various agro-climatic zones of the country between 1968 to 1976 under various five-year plans, aiming the availability of germplasm with the high genetic potential of important indigenous and exotic cattle breeds (Holstein Friesian and Jersey) within the country to serve as a backbone of the dairy industry.

These farms have played a crucial role in the supply of breeding inputs in the form of disease-free HGM bulls of indigenous and exotic breeds and frozen semen doses.

There are seven Central Cattle Breeding Farms (CCBFs) located at Alamadhi (Tamil Nadu), Andesh Nagar (UP), Chiplima & Sunabeda (Odisha), Dhamrod (Gujarat), Hessarghatta (Karnataka) and Suratgarh (Rajasthan). These CCBFs are engaged in the scientific breeding of cattle and buffalo with the aim of production of high pedigreed bulls for genetic upgradation programs. Besides, these farms are also providing awareness training to the farmers and breeders.

5.2. Central Herd Registration Scheme (CHRS):

The Department is implementing a Central Herd Registration Scheme (CHRS) for the registration of elite cows and buffaloes and to provide incentives for the rearing of elite cows and male calves. The scheme aims to undertake the identification and propagation of superior germplasm of Indigenous breeds in the breeding tract through field performance recording and arrange breeding of selected cows with high genetic merit bulls. The scheme is playing a crucial role in the development and conservation of indigenous breeds. Under the scheme, there are 4 CHRS units located at Rohtak, Ahmedabad, Ajmer, and Ongole.

There are 96 milk recording centres to undertake field performance recording (FPR). The scheme covers 14 indigenous breeds of cattle and buffalo in 9 States. The data is uploaded to the INAPH database and animals are identified using a 12-digit Animal Unique Identification (AUID) number. Guidelines of the International Committee on Animal Recording are followed under the scheme.

6. Central Poultry Development Organizations:

Central Poultry Development Organizations (CPDOs) located in four regions viz. Chandigarh, Bhubaneswar, Mumbai, and Bengaluru have been playing a pivotal role in the implementation of the policies of the Government concerning poultry. In these CPDOs, training is imparted to the farmers and a training module for training Poultry farmers/ Entrepreneurs has been devised and followed at these CPDOs. The poultry production course curriculum includes practical sessions and demonstrations of poultry farming activities including brooding arrangements, feeding, watering, vaccination, temperature management, medication, etc. and other management aspects apart from tips on feed mill management and hatchery management. Training is also given for basic economics in poultry farming with special reference to obtaining financial assistance (bank loans) through funds from nationalized banks. The farmers are also briefed about viable projects of commercial poultry farming with various models in different regions.

CPDO (Centre Poultry Development Organizations) focuses on advancing poultry farming practices through research, training, and technology dissemination. They support small-scale and commercial poultry producers with expertise in breed selection, disease management, and production efficiency. The CPDO has Regional Training Centres that train aspiring entrepreneurs in poultry farming to enhance their knowledge and build capacity.



CHAPTER 5

Autonomous bodies in the Department of Animal Husbandry and Dairying

Under the Department of Animal Husbandry and Dairying, various autonomous bodies are involved in the skilling activities of the livestock sector.

1. National Dairy Development Board (NDDB)

The National Dairy Development Board (NDDB) has been at the forefront of skill development initiatives aimed at enhancing the capabilities of dairy farmers and workers across India. Recognizing the pivotal role of skilled manpower in the dairy sector's growth and sustainability, NDDB has implemented various training programs and capacity-building initiatives tailored to the needs of different stakeholders. These efforts encompass a wide range of skill areas including dairy farming techniques, animal husbandry practices, milk processing, quality assurance, cooperative management, and entrepreneurship development.

By leveraging a combination of classroom training, hands-on workshops, demonstration farms, and technology transfer, NDDB equips individuals with the knowledge, skills, and confidence needed to thrive in the dairy industry. Through partnerships with educational institutions, vocational training centers, government agencies, and industry stakeholders, NDDB fosters a collaborative ecosystem for skill enhancement in the dairy sector. NDDB is also working as a training partner for A-HELP programme.



2. Veterinary Council of India (VCI): Development of Skilled Veterinary Professionals

Veterinarians are professionals who are possessed with a Graduate degree in Veterinary Science. They provide medical care for small and large livestock, other farm animals, avians, zoos, laboratories and other animals. Apart from the knowledge and expertise in various disciplines of veterinary science, practising veterinarians need to develop a set of unique skills too. The skills help them efficiently do their job, the skills like Compassion to show concern and empathy when working with clients and their animals, Analytical skills and critical thinking to figure out a diagnosis, Interpersonal skills, Problem-solving skills, Scientific aptitude, Ability to follow safety procedures to avoid occupational hazards and management skills.

The role of veterinarians is becoming more and more challenging due to diversification in the livestock sector; higher expectations of industry, farmers, and entrepreneurs; land constraints under fodder production and for pasture, and challenges posed by climate change threats. Considering the growing demand and requirement, the livestock sector needs to expand exponentially to be better equipped to share the burden in societal built-up through veterinary and animal husbandry enterprises and practices. The creation of more institutions with modern infrastructure facilities matching global standards will produce competent human capital with appropriate knowledge, skill, and attitude to effectively manage different activities is the need of the time.

The skilling and up-skilling of veterinarians are done through VCI, Veterinary universities and Veterinary colleges.

Academic Institutions

1. Veterinary and Animal Sciences Universities

Presently there are 16 State Veterinary Universities (SVUs) in the country, to impart knowledge and skills to Veterinary aspirants and graduates, which include the Indian Veterinary Research Institute (IVRI), one of the national research institutes of the Indian Council of Agricultural Research (ICAR) having the status of Deemed University. Besides these, the National Dairy Research Institute (NDRI) another research institute of the Indian Council of Agricultural Research (ICAR) having the status of Deemed University is there. Among these, the Indian Veterinary Research Institute (IVRI) offers postgraduate (PG) education in veterinary and animal sciences while the National Dairy Research Institute (NDRI) offers UG and PG education in the disciplines of Dairy Science & Technologies.

2. Veterinary Colleges

Animal Husbandry is a state subject and veterinary services, including deployment of veterinarians, are provided by the respective State. Moreover, according to the recommendation of the National Commission on Agriculture (NCA) in 1976, there ought to be at least one Veterinary Doctor per Institution for 5000 cattle units by the year 2000. With the present population of livestock in the country being 535.78 million, going by the recommendation of the NCA, there is a need for approximately 1,07,156 Veterinary practitioners in the country as opposed to the present number of around 68000. The OIE PVS Evaluation of India -2018 also highlighted the insufficient availability of Veterinarian services at the field level.

To bridge the gap between the demand for and availability of veterinary professionals as well as veterinary infrastructure in the country, states are continuously advised to strengthen their veterinary infrastructure.

3. Veterinary Council of India (VCI)

The Veterinary Council of India (VCI) is a statutory body established under the provision of the Indian Veterinary Council Act, 1984. The Veterinary Council of India is responsible for regulating veterinary practices as well as for maintaining uniform standards of veterinary education through the Minimum Standard of Veterinary Education Regulations in all veterinary institutes across the country.

At present, there are 58 Recognised veterinary colleges. In addition, 19 veterinary colleges are under various stages of recognition as per VCI (Procedure for Recognition and de-recognition of Veterinary Colleges and Veterinary Qualifications) Rules, 2017.

Number of veterinary graduates per year approximately increased from 1500 in 1984 to 5800 as of now. Therefore, every year on average 100 veterinary graduates per college, altogether 5800 skilled veterinarians are developing in country



This department is upskilling veterinarians by conducting “Continuing Veterinary Education programs” through the Veterinary Council of India by its State functionaries/State Veterinary Councils.

Current Skill Development Programmes in the Department

Skill development under Centre Sector Schemes and Centrally Sponsored Programmes:

1. Rashtriya Gokul Mission - Establishment of Multipurpose AI Technicians in Rural India (MAITRIs)

Rashtriya Gokul Mission was initiated in December 2014 exclusively for the development and conservation of indigenous bovine breeds in a scientific holistic manner. The Scheme is important for the upliftment of rural poor as more than 80% low low-producing indigenous animals are with small and marginal farmers and landless labourers.

Productivity of Indian dairy animals are low that is 1860 Kg per year as compared to OECD countries' average of 7525 kg /year. Among indigenous cattle (both non-descript and high-yielding indigenous breeds) the average productivity is only 1099 kg per year; while for crossbred cattle average productivity is 2902 kg per year. Due to low productivity farmers are not getting remunerative income from the rearing of dairy animals.

Artificial insemination is an important tool for enhancing milk production and productivity of bovines. After making several efforts AI coverage in the country is still limited to 30%. One important impediment to extending AI coverage in the country is a shortage of trained AI technicians. The primary focus of the project is to enhance the productivity of the existing bovine population by increasing Artificial Insemination coverage through the establishment of Multi-Purpose Artificial Insemination Technicians in Rural India (MAITRIs) to deliver artificial insemination services at farmers' doorstep on a self-sustainable basis through collection of cost of goods and services. The benefit of the project directly accrues to 90958 educated rural youth and about 8.12 crore farmers engaged in dairying will get indirect benefits in terms of increased productivity and milk production.

2. A-HELP (Accredited Agent for Health and Extension of Livestock Production):

In order to leverage the SHG (Self-Help Groups) platform for rural economic growth through convergence, the Department of Animal Husbandry and Dairying (DAHD) under Ministry of Fisheries, Animal Husbandry and Dairying (MoFAHD) and **National Rural Livelihoods Mission (NRLM)** under the Ministry of Rural Development (MoRD), Government of India, signed a Memorandum of Understanding (MoU) on September 1st 2021. As per the MoU, the Department of Animal Husbandry and Dairying (DAHD) will leverage the services of the members of Self-Help groups (SHGs) as livestock resource persons and primary service providers through a new accredited model named **"A-HELP" (Accredited Agent for Health and Extension of Livestock Production)**.

This cadre can act as primary service providers, delivering 24/7 doorstep veterinary care, and improving access to animal health services. These agents maintain livestock records, and facilitate insurance, ear-tagging, and animal registration, promoting better disease management and traceability. They educate farmers on scientific health practices, sanitation, and nutrition, thereby reducing disease incidence and improving overall livestock health. Trained in first aid and minor veterinary practices, A-HELP can address minor ailments promptly, preventing escalation of health issues, and facilitating quality animal health and welfare by connecting with Mobile veterinary units. Additionally, their involvement in disease surveillance, outbreak management and ration balancing programs, supports preventive care and enhances productivity. By bridging the gap between farmers and veterinary services, A-HELP agents ensure timely intervention, contributing to healthier livestock populations and good welfare practices.

A-HELP programme itself stands for women's empowerment. It covers the empowerment of women through skill enhancement, adoption of new technologies, more social recognition through accreditation status, economic empowerment through gaining additional income by performing A-HELP roles and responsibilities and social empowerment as Local Resource Persons (LRPs) at farmers' doorsteps. Besides they are also being supported by providing various tools to create an enabling environment during their field operations.

So far, the A-HELP program launched in 15 States and training are ongoing at the field level.

Synergy with Sectoral Skill Councils

Department of Animal Husbandry and Dairying is actively working with ASCI and running skill development programmes across various flagship schemes under the Skill India initiative. The council is in continuous discussion with public and private sector players including ICAR, IVRI, Vet Helpline India, NDDB, CEDSI (Centre of Excellence for Dairy Skills in India), other reputed institutes of excellence and allied industry partners on the need for enhancing the skills of the Dairy and Animal Husbandry workforce. Based on that, various skill standards required for the sector are being developed with technical consultation and approval of the DAHD, maintaining the national and international benchmarks.

Agriculture Skill Council of India (ASCI)

ASCI are a Section 8 Not-for-profit concern working under the aegis of the Ministry of Skill Development & Entrepreneurship (MSDE). ASCI contributes towards skill development in the Agri and allied sectors by bridging gaps and upgrading the skills of farmers, wage workers, self-employed & extension workers engaged in organized / unorganized segments.

ASCI develops Qualification Packs (QPs)/National Occupation Standards (NOS) which specify the performance standards an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding he/she needs to meet that standard consistently. Essentially NOS are benchmarks of good practice. The QPs contribute to developing the skills of the country's manpower in emerging areas of agriculture and allied sectors via 176 Qualification Packs.

Out of 176, a total of 30 QPs were identified for the Livestock sector in consultation with the Department of Animal Husbandry and Dairying. Further, ASCI will develop the Qualification packs as per the department's requirement and submit them for the technical approval of the department.

The identified QPs are as follows:

Sl No.	TOPICS	NO. of QPs
01	Dairy Farm Management	08
02	Live Stock Management	04
03	Animal Husbandry	02
04	Equine Management	05
05	Captive & Small Animal Management	05
06	Poultry Farm Management	06

Dairy Farm Management

- ▶ Dairy Farmer/ Entrepreneur
- ▶ Village Level Milk Collection Center
In charge
- ▶ Bulk Milk Cooler (BMC) Operator
- ▶ Chilling Plant Technician
- ▶ Dairy Farm Supervisor
- ▶ Dairy Worker
- ▶ Milk Procurement & Input Supervisor
- ▶ Milk Tester

Poultry Farm Management

- ▶ Small Poultry Farmer
- ▶ Hatchery Operator
- ▶ Poultry Hatchery Supervisor
- ▶ Poultry Farm Worker
- ▶ Poultry feed, food safety and labelling Supervisor
- ▶ Poultry Farm Supervisor

Livestock Management

- ▶ Artificial Insemination Technician
- ▶ Livestock Service Provider
- ▶ Veterinary Clinical Assistant
- ▶ Veterinary Field Assistant

Animal Husbandry

- ▶ Goat/Sheep Farmer
- ▶ Piggery Farmer

Equine Management

- ▶ Stud Farm Worker
- ▶ Horse Trainer
- ▶ Assistant Equine Breeder
- ▶ Equine Farrier
- ▶ Equine Groom

Captive and Small Animals Management

- ▶ Canine Breeder
- ▶ Canine Trainer and Handler
- ▶ Companion Animal Groomer*
- ▶ Zoo Animal keeper
- ▶ Stray Animal Catcher

Other

- ▶ Livestock Farm Facilitator (Green Management)
- ▶ Practicing One Health Approach
- ▶ Livestock Marketing Practices

Skill Development Through The i-GOT Platform

The **Mission Karmayogi** is a National Programme for Civil Services Capacity Building (NPCSCB), launched by the Union Cabinet, Government of India which aims at capacity building of the Indian civil servants for the future based on the philosophy of creating an ecosystem. Under this Program, the Capacity Building Commission (CBC) was set up for functional supervision of training and conceptualizing and development of the Annual Capacity Building Plan (ACBP) for the identified Ministry, Departments and Organisations (MDOs).

Primary objectives of Mission Karmayogi

The primary objective of the Mission Karmayogi is to realize the various capacity-building needs of DAHD officials to align their involvement with the Department's objectives on national priorities, citizen centricity and emerging technologies.

a) Role Based Capacity Building:

The ACBP focuses on enhancing the attitudes, skills, and knowledge of DAHD officials through role-based, demand-driven capacity-building interventions.

b) Enablement of continuous, lifelong learning opportunities:

ACBP will provide an equitable opportunity to access, continuously build and strengthen the competencies required by all DAHD officials.

c) Breaking the siloed nature of Learning & Knowledge:

ACBP will provide a platform for Knowledge transfer within Divisions, Departments & Ministry to ensure ease of capacity building & collaboration.

d) Future-readiness:

Officials will have access to capacity-building measures that will equip them for the future.

e) Link Goal setting, planning & Achievements:

The ACBP aims to align individual learning and capacity building with the Department's goals and the career goals of individual officials.

Annual Capacity Building Plan (ACBP) of DAHD

The Annual Capacity Building Plan (ACBP) is a comprehensive strategic plan that outlines key strategic areas within the MDO that require intervention and provides a year-by-year picture of capacity-building initiatives that cater to those areas. The content of an ACBP is based on two aspects: (i) three lenses, comprising



national priorities, citizen centricity and emerging technologies, and (ii) three pillars at the individual, organisational and institutional levels.

iGoT - Karmayogi

iGoT - Karmayogi is an online learning platform being developed as part of Mission Karmayogi for capacity building of the civil servants of the Department & its subordinate offices across pan India. The content can be curated by individual government ministries, in-house or through knowledge partners. Carefully crafted and vetted content from best-in-class government and non-government institutions, universities, private content providers and individual resources will be made available as training modules through the platform.

ACBP Implementation Framework

ACBP assists in understanding and documenting the capacity-building needs of a Ministry / Department at the individual, organisational and institutional levels through primary & secondary research and developing the Capacity Need Analysis (CNA) Report. Once the needs are understood, identification of specific training & non-training interventions are identified that will help bridge the capacity-building gaps identified.



At an individual level, for every unique role at the institution, the competency requirements were identified as (i) Domain competency, (ii) Behavioural competency (iii) Functional competency including cross-cutting needs across DAHD which is related to functional aspects of the Division.

Competencies	Specific Areas of Learning
Behavioural	<ul style="list-style-type: none"> • Creative thinking • Communication skills • Office etiquettes • Stakeholder management • Stress management • Ethics and values • Work prioritization • Leadership, Multi-tasking, and Decision-making, Problem-solving • Public policy design and understanding
Functional	<ul style="list-style-type: none"> • Financial management, Budgeting and PFMS • Social media management • MIS handling • Supply-chain management, backwards and forward linkages • Program management and implementation • Report writing, GeM, RTI Act 2005 • R software, Python, Power BI, Tableau, Data visualization • Filing affidavits, drafting legal statements • Procurement • Entrepreneurship development for livestock officials • E-Office • MS Office
Domain	<ul style="list-style-type: none"> • Induction module for Department – Schemes and basics of AHD • Breeding and feeding management • Subject matter knowledge related to Poultry, Fodder, IVF, Animal welfare, Disease Control • Understanding of the Livestock Importation Act • Understanding of Quarantine • Knowledge of technological developments in Dairy • Food laws and certifications • International Cooperation/treaties/relations w.r.t. dairy sector

Skill Requirements and Gaps: An Analysis

India is holding a remarkable place in the global livestock sector, with the largest livestock and poultry populations. Though holding the world top in milk production and buffalo meat production, second in egg production the per-animal productivity levels are not at par with the global level. Skilling has a crucial role in productivity enhancement activities and to bridge the existing differences. So, there is a need to identify the gaps and develop strategies for improving the skills and efficiency of the workforce across the sector.

Methodology

To create a practical base data, the methodology adopted for assessing the skill gaps in the livestock sector is primary and secondary research. This includes primary research through discussions with Central and State Animal Husbandry departments, Field visits and interaction with farmers, discussions with Veterinary colleges and subordinate institutions, ICAR institutes, and state training institutes.

Secondary research was done through a review of available literature on various aspects of the value chain of livestock production, labour requirements and skilling needs. The secondary data published in different reports was useful in getting an overview of the trends and patterns of the Labour requirements/indicators.

The methodology primarily includes analysis/usage of primary data from major official data sources and inputs received from subject experts and other stakeholders during the discussion. Inputs received from the field-level officers and farmers in the fields of dairy, livestock health, breeding and entrepreneurship were used for the analysis, especially to understand the skill requirements. The discussions revealed that a wide gap exists in skill in breeding aspects, advanced breeding technologies, mechanization in livestock/fodder farming, clean milk production, balanced feeding and adoption of technologies in feeding, fodder conservation, animal health and disease information, farm waste management and recycling by converting into biogas or electricity, entrepreneurship and proper financial management at the producer level.

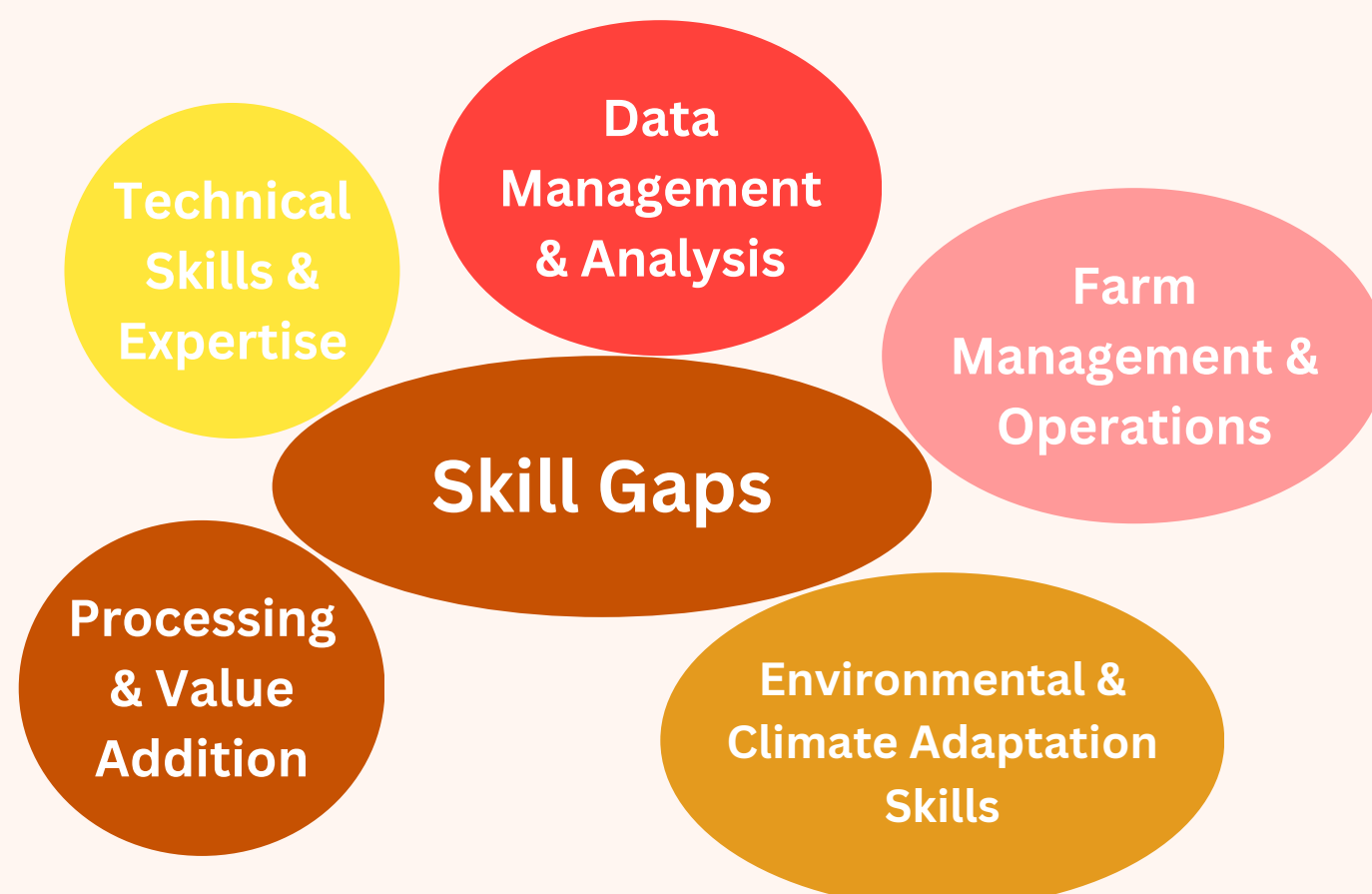
The skill gaps at the processing level include the usage of milk testing infrastructure to identify adulterants and contaminants, regulatory compliance and registration, value addition of milk and other livestock products, HACCP norms, digital marketing, new marketing technologies etc.

Skill Requirements in Livestock Production –Management Skills

Broadly, the following key skills are required to increase managerial and production competency.

A. Farm Management and Operations

- **Dairy Farm Management:** Skills in managing dairy farms, including roles like Dairy Farm Supervisor, Milk Procurement & Input Supervisor, and Bulk Milk Cooler (BMC) Operator.
- **Livestock Farm Management:** Efficient management skills for various types of livestock farms, including goat, sheep, piggery, and equine management.
- **Poultry Farm Management:** Expertise in managing poultry farms, and hatcheries, and ensuring food safety and labelling standards.



B. Technical Skills and Expertise:

- **Disease Control and Management:** There is a significant need for skilled professionals who can implement and manage programs like the National Animal Disease Control Program for FMD and Brucellosis, Pestes des Petits (PPR) Eradication Programme, and Classical Swine Fever Control Programme.
- **Veterinary Services:** Adequate training for Veterinary Clinical Assistants, Veterinary Field Assistants, and Livestock Service Providers to ensure comprehensive animal healthcare.
- **Artificial Insemination:** Skilled Artificial Insemination Technicians are required to improve breeding practices and enhance productivity.

C. Data Management & Analysis:

- **Data Management:** Training in data management to manage animal-specific records, such as milk recordings and health records, and human and financial resource management are essential. This will enhance traceability and data-driven decision-making.
- **Digital Tools and Software:** Proficiency in using digital tools and software for farm management, disease tracking, and feed optimization.

D. Environmental and Climate Adaptation Skills

- **Sustainable Practices:** Knowledge in sustainable farming practices, waste management, and resource optimization to tackle climate change.
- **Improved Feeding Practices:** Skills to develop and implement improved feeding practices that enhance productivity and sustainability.

E. Processing & Product Value Addition

- **Value Chain Development:** Skills in product value-addition processes, such as milk processing, meat processing, and other value-added products.
- **Quality Control and Safety:** Ensuring adherence to quality standards and safety regulations throughout the production and processing stages.

Skill Requirement –Sectoral Basis

1. Milk Production

The dairy sector encompasses various components such as dairy farming, milk collection and transportation, milk processing, quality control, packaging, marketing and sales, supply chain management, research and development, regulatory compliance, and sustainability practices.

Component	Activities	Skill Training Required
Dairy Farming	Animal husbandry, feed management, milking techniques	Animal care, nutritional management, advanced milking techniques
Milk Collection and Transportation	Collection scheduling, cold chain management, transportation logistics	Logistics management, cold chain logistics, time management
Milk Processing	Pasteurization, homogenization, fermentation, quality checks	Processing techniques, machinery operation, and other relevant standards
Quality Control	Testing for contaminants, ensuring product consistency	Laboratory skills, microbiology, chemical analysis, quality assurance
Packaging	Bottling, labelling, storage	Packaging technology, labelling regulations, inventory management
Marketing and Sales	Product promotion, market research, sales strategies	Marketing strategies, sales techniques, customer relationship management

Supply Chain Management	Coordination with suppliers, inventory management, distribution planning	Supply chain optimization, inventory management, vendor management
Research and Development	Product innovation, nutritional research, process improvement	R&D methodologies, food science, innovation management
Regulatory Compliance	Adherence to local and international dairy regulations, certifications	Regulatory knowledge, compliance training, certification processes
Sustainability Practices	Waste management, energy efficiency, sustainable sourcing	Environmental management, sustainable practices, eco-friendly technologies

2. Livestock Health:

The livestock health sector comprises key components such as disease prevention and control, veterinary services, nutrition management, biosecurity, reproductive health, and animal welfare. Each component involves crucial activities like vaccination, diagnosis, dietary planning, pathogen control, breeding management, and humane treatment.

Component	Activities	Skill Training Required
Disease Prevention and Control	Vaccination programs, Biosecurity measures, Quarantine procedures	Vaccine administration, Biosecurity protocols, Quarantine management
Veterinary Services	Regular health check-ups, Disease diagnosis and treatment	Diagnostic techniques, Treatment protocols, Emergency response
Nutrition and feeding	Diet formulation, Supplement administration, Feed quality assessment	Nutritional planning, Feed analysis, Supplement usage
Breeding and Genetics	Selective breeding, Artificial insemination, Genetic record keeping	Breeding technique, Genetic evaluation, AI procedures
Animal Welfare	Human handling, Stress reduction strategies, Shelter management	Animal behaviour understanding, Welfare standards, Shelter design
Waste Management	Manure management, Waste recycling, Environmental impact reduction	Waste treatment methods, Recycling techniques, Environmental management
Health Monitoring and Record Keeping	Regular health monitoring, Data collection and analysis, Record maintenance	Health monitoring techniques, Data management, Record keeping skills
Training and Education	Farmer training programs, Extension services, Continuous education	Training methodologies, Extension service skills

3. Industry Requirements:

Components of Skill Development	Activities	Training Requirements
Value Addition of Livestock Products	Making of Milk or livestock sector-based value-added products such as Khoa, Paneer, Curd, Ghee, Cheese, Milk Powder, Condensed milk etc.	Quality Control and Assurance <ul style="list-style-type: none"> - Processing Techniques - Equipment Operation and Maintenance - Hygiene and Sanitation - Supply Chain Management - Regulatory Compliance - Innovation and Value Addition - Marketing and Sales - Sustainable packaging Practices
Livestock Feed Industry	Making of Feed from Roughages, Fermented forages (Such as Silage), Concentrates, Mineral Supplements, Vitamin Supplements, Grain by-product, oil seed-products, Pelleted Feeds, Specifications based on age of the livestock etc for egg calf starter, Lactating cow feeds etc.	<ul style="list-style-type: none"> -Nutritional Knowledge - Feed Processing Techniques - Raw Material Management - Quality Assurance and Safety - Microbiological Testing - Emerging animal feed supplements e.g.: Urea Molasses Mineral Block, Urea Molasses Liquid Diet, Probiotics, Compressed Completed Feed Block
Meat Processing	Meat processing, packaging & Branding, and marketing.	Food Safety standards (FSSAI) licensing etc. <ul style="list-style-type: none"> - Meat processing techniques
Livestock Insurance	Insurance of Livestock including small and large ruminants, Herd Insurance etc.	<ul style="list-style-type: none"> -Understanding the basics of Livestock insurance principles and their importance in the livestock sector. - Types of Livestock Insurances. - Insurance Laws. - Understanding the policy, premium, types of coverage etc. - Legal and regulatory framework. - Claim Settlement methods. - Paperwork and documentation. - Claim management.
Trade	Live Livestock Trade and By-Products export.	<ul style="list-style-type: none"> - Understanding Trade - Requirements of licenses and documentation for Import and Export - Global export conditions/ scenarios

		<ul style="list-style-type: none"> - Logistics and transportation - Market understanding. - Feasibility
Integration of Technology in Livestock Sector	Smart and Steller Systems to monitor livestock wellbeing, Productivity, Vaccinations, weather management, Ration Balancing etc.	<ul style="list-style-type: none"> - Understanding of the Technological integration in the livestock sector. - Importance of Technology in the sector. - Procurement channels and sources - Functioning of applications and devices. - How to monitor day-to-day output, well-being through IOT devices.

4. Specific skill gaps identified in the farming sector (production stage) are tabled below:

Category	Skill Gaps	Importance
Small Farms	Animal health, care and welfare, feed and nutrition, advanced breeding techniques including AI, hygienic handling and practices	More than 70 % of livestock in the hands of small farmers
Commercial Farms	Animal Welfare and health, advanced breeding techniques, scientific farm management, mechanization, hygienic practices for storage and processing, marketing channels	Generally, commercial farms depend on the local market for selling their product and few are in the organised sector, especially for milk. (Associated with DCs)
Farm Entrepreneurship	Breeding and health management, balanced feeding and preparation of concentrate feed by using local resources, Fodder production and conservation, Economics and profitability of farms, Mechanization, digitalization and lack of optimum use of various financial resources	<ul style="list-style-type: none"> -Rural youth and women are the main target group. However, getting more successful profitable models is a challenge. -SHGs/FPOs have the potential to evolve into small and medium businesses in the livestock sector and utilise the opportunities of technical applications in livestock into a business preposition

Market Demand or Trend based production	Natural farming or Organic farming	FPOs/Start-ups/entrepreneurs
FPOs/SHGs other farmer groups into livestock farming	Forward and backward linkage management, financial management, Milk/meat/egg procurement, storage, processing and Marketing, Fodder production and supply chain.	Need more promotion of FPOs, for making organized livestock production.
Milk collection centres- village/DC level	Need technical skilling in Milk testing for adulterants, management of bulk milk coolers, and chilling units in food safety aspect.	Periodical Upskilling and reskilling are required.
Milking personnel	Hygienic and scientific manual and machine milking, prevention of mastitis	Smallholder farmers are still depending on manual milking personnel.



Action Plan for Skill Development: Community Lead Action

The scope of this skill framework is to provide a comprehensive approach to the skilling process in the livestock sector catering to the diverse needs of the stakeholders including the livestock industry. Therefore, the estimation of skill requirements is very important.

Estimation of Skill requirement in the livestock production sector

While estimating the skill requirement in the livestock production sector, assumptions are inevitable. This will help to reduce the complexity and to fill the gaps in the data availability. The following factors are considered and assumptions are made to estimate the skill requirement, for developing a targeted action plan.

- As per the SAAH 2019(Situation Assessment of Agricultural Households and Land and Livestock Holdings of Households in Rural India, 2019) report, 2.3 % of the total rural agricultural households and 0.6% of total rural non-agricultural households are self-employed in livestock farming. This will come around 2.7 million households.
- As per the SAAH 2019(Situation Assessment of Agricultural Households and Land and Livestock Holdings of Households in Rural India, 2019) report 21, 48.7 % of the rural agricultural HH are getting access to technical advice. So, there is a gap of 51.3 % (4.77 Cr. HH)
- In the farming sector, every farm requires a minimum of 5 skilled labourers, varying with the capacity. DAHD is in a mission to promote entrepreneurial and farm business activities by implementing Entrepreneurship development schemes through National Livestock Mission and Breed multiplication units through Rashtriya Gokul mission. The targets are scaling up yearly, and more rural youth and women are engaged.
- DAHD is also implementing breed improvement programs, to improve the genetic quality of dairy animals through advanced breeding technologies like Sex sorted semen, In-vitro fertilization, Artificial Insemination, progeny testing, Genomics etc. This demands a good number of skilled manpower.

- Feed and fodder development sector requires special attention to address the existing challenges and scarcity of fodder and animal feed. Through NLM fodder schemes this department is attending to the issues comprehensively. The department promotes newer technologies including customized ration balancing programs, and animal nutrition management which requires a lot of capacity building and awareness creation. Approximately 1000 numbers of feed processing units are working in the country, and require a minimum of 5 skilled persons for feed formulation, mixing, packaging, marketing, machine operators etc.
- For the up-keep of the health of different farm animals and to prevent zoonoses, DAHD is implementing various disease prevention and control programmes through the "Livestock Health and Disease Control programme" and "One Health" initiatives. Considering the scattered pattern of livestock distribution, a lot of skilled manpower is required to provide all these services at the doorstep of farmers.
- Productivity of Indian dairy animals is low which is 1860 Kg per year as compared to OECD countries' average of 7525 kg /year. Among indigenous cattle (both non-descript and high-yielding indigenous breeds) the average productivity is only 1099 kg per year; while for crossbred cattle average productivity is 2902 kg per year. Due to low productivity farmers are not getting remunerative income from the rearing of dairy animals.
- To provide doorstep AI services, the department initiated **Multi-Purpose AI Technicians in Rural India (MAITRIs)** for extension/expansion of AI coverage from the present 30% to 70%.
- To provide doorstep services including vaccination, ear-tagging, and extension services and to bridge the knowledge gap in farmers DAHD developing **A-HELP (Accredited agent for Health and Extension of Livestock Production)**, as community resource persons for livestock.
- The skilled workforce of the milk procurement system includes the Milk collection centre in-charge or secretary, Collection Supervisor, Cooling & Chilling centre Operator, Bulk Milk Cooler Operator and milk tester. This department has established different types of milk testing equipment at approximately 15,000 units/year under dairy development programs. Accordingly, the skilling requirement is considered at the same rate (base) with a 5% constant yearly growth rate.

Requirement of Skill Development

S No	Type of skilled workforce	Status of skilled workforce				Target Groups for skilling
		Requirement	Availability	Gap In		
				numbers	%	
1	Large and Small livestock (cattle/buff/sheep/goat/pig) Entrepreneurship Development program Poultry	270,000	135,000	135,000	50	Women/Rural youth/Progressive farmers/FPO
2.	Entrepreneurship Development program	600,000	300,000	300,000	50	Women/Rural youth/Progressive farmers/FPO
3.	Feed and Fodder Entrepreneurship Development program Feed and Fodder	280,000	140,000	140,000	50	FPO/Rural youth/farmers
4.	processing Entrepreneurship Development program	12000	2500	9500	80	FPO/Rural youth/Progressive farmers
5.	AI Technicians (bovines)	210000	145,000	65000	31	MAITRI/Paravets from State AHDs
6.	Vaccinators/ear-tagging	310023	97659	212364	68.5	A-HELP/MAITRI
7.	Community Extension /Animal health worker/A-HELP	100170	4500	95670	95.5	Women SHG member
8	Veterinary services and AH management in the community-ToT programme	1250	450	1150	64	Govt. Veterinary doctors and SPMs of DoRD
9.	Milking person/Milking machine operator	160000	80000	80000	50	Rural youth/farmers/SHGs
10.	Milk quality tester at DCs level	240,000	120,000	120,000	50	DC Secretary/Sahayak
11.	BMC/MPP/MCC operator	21000	10500	10500	50	Rural youth/SHG/ Dairy techs.

Assumptions

- 10 % of total households self-employed in livestock farming required skilling, of which 50% are available and 50% require skilling
- As per the livestock census 2019, there are 317.07 million number of backyard poultry. For rearing 2000 birds unit, 4 manpower is required. It is assumed that 50% of skilled manpower is available and 50% to be skilled.
- As per NLM scheme targets, approx. 70000 tons of seeds of various categories have to be produced. It is assumed that 1 ton/acre is the current productivity for which 4 manpower is required, out of which 50% is available.
- For the present feed processing units 50% skilled workforce is required. As per NLM scheme targets, 1400 new processing units have to be established for which approx. 7000 skilled manpower required.
- As per the RGM, more than 2 lac AI techs are required, for that purpose department has created the MAITRI project. The gap is analyzed by assuming a 5% increase in manpower requirement.

- One Extension agent can cater for the requirement of 500 HH. The gap is analyzed by assuming approximately a 5% increase in manpower requirement.
- There are 8 million dairy farmers, 2 milch cows per farmer, and one milker/100 animals. 50% skilled manpower is available.
- There are approx. 2.4 lacs DCS in the country. One quality testing person per DCS, 50% skilled manpower is available.
- There are approx. 21000 BMCs in the country. One quality testing person per BMC, 50% skilled manpower is available.
- Approx. 80 A-HELPS: 1 Master trainer ratio is required, for Master trainer programs of the A-HELP programme.

i) 5-year Action Plan for Skill Requirement

Sl No	Categories	Total No. of training required				
		2024-25	2025-26	2026-27	2027-28	2028-29
1	Large and Small livestock (cattle/buff/sheep/goat/pig) entrepreneur	27000	27000	27000	27000	27000
2	Poultry entrepreneur	60000	60000	60000	60000	60000
3	Feed and Fodder entrepreneur	28000	28000	28000	28000	28000
4	Feed and Fodder processing	1900	1900	1900	1900	1900
5	AI Technicians (bovines)	13000	13000	13000	13000	13000
6	Vaccinators/ear-tagging	42473	42473	42473	42473	42473
7	Community Extension agent/Animal health worker/A-HELP	10000	10000	25223	25223	25223
8	A-HELP Master trainers	125	125	300	300	300
9	Milking person/Milking machine operator	16000	16000	16000	16000	16000
10	Milk quality tester at DCs level	24000	24000	24000	24000	24000
11	BMC/MPP/MCC operator	2100	2100	2100	2100	2100

ii) 5-year Action Plan for Financial Requirement

Sl No	Categories	Unit cost* (Estimated)	Fund Required					Total Fund Required
			2024-25	2025-26	2026-27	2027-28	2028-29	
1	Large and Small livestock (cattle/buff/sheep/goat/pig) entrepreneur	2500	6.75	6.75	6.75	6.75	6.75	33.75
2	Poultry entrepreneur	1500	9	9	9	9	9	45
3	Feed and Fodder entrepreneur	1500	4.20	4.20	4.20	4.20	4.20	21
4	Feed and Fodder processing	1500	0.285	0.285	0.285	0.285	0.285	1.425
5	AI Technicians (bovines)	35000	45.5	45.5	45.5	45.5	45.5	227.5
6	Community Extension agent/Animal health worker/A - HELP	50000	50	50	126.115	126.115	126.115	478.345
7	Milking person/Milking machine Operator	1500	2.4	2.4	2.4	2.4	2.4	12
8	Milk quality tester at DCs level	1500	3.6	3.6	3.6	3.6	3.6	18
9	BMC/MPP/MCC operator	1500	0.315	0.315	0.315	0.315	0.315	1.575
	Total		122.05	122.05	198.165	198.165	198.165	838.595

Rs 839 Cr. (Rupees Eight hundred and Thirty-nine Crores), approximately for 5 years

(*Cost norms and details are annexed- annexure 3)

Note -

- This department has developed MAITRI/A-HELP and can perform vaccination and ear-tagging activities in the field. Therefore, no separate funds are required for category No.6 in the above table.
- The unit cost for the A-HELP training includes the cost for Master trainers. So, separate funds are not needed.
- For the purpose of calculation, the cost norms of MANAGE, Hyderabad, Ministry of Agriculture and FW have been adopted. The same is followed in ATMA skill training programs. However, considering the inflation and complexity of training in the livestock sector, the unit cost is taken as Rs 500/day, which is Rs 400/day for agricultural training.

iii) 5-year Action Plan - Mode of Implementation**Hub and Spoke model and Source of funds**

The skilling program for entrepreneurial activities will be coordinated and implemented as a Hub and Spoke model.

The Center of Excellence in Animal Husbandry (CEAH), Bangalore will act as the hub to coordinate a major part of the entrepreneurial skill programs directly with the other field-level institutions of this department. For which a separate action plan will be developed by CEAH based on the resources, in a time-bound manner.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

Ministry of Skill Development and Entrepreneurship was established in 2014 with an overall objective to promote skilling and entrepreneurship development in India. In 2015, MSDE launched its flagship scheme, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), to encourage and promote skill development in the country by providing free short-duration skill training and incentivizing youth for skill certification.

The CEAH, Bangalore will act as a centralised training provider for this department and funds under the Pradhan Mantri Kaushal Vikas Yojana will be used for the skilling program of entrepreneurial activities. This will be implemented in coordination with sectoral skill councils like ASCI- Agricultural Skill Council of India and industry partners/farmer associations/sectoral associations.

Also, Identified training programs under the "Entrepreneurship Development Programs" will be customized and will be provided on a payment basis. Such programs will be implemented by CEAH, Bangalore directly or in coordination with other central/state technical institutions across the country.

Department of Animal Husbandry and Dairying is implementing multiple programs under centrally sponsored and central sector schemes. Funds will be sourced from the eligible components of these schemes.

- For the A-HELP program, the master training and field-level training programs will be coordinated by NDDDB, being the training partner. The funds are under the ASCAD (Assistance to States for the Control of Animal Diseases) component of LH&DCP.
- For the Entrepreneurial training programs, funds under the Sub-Mission on “Research & Development, Livestock Insurance, Extension and Innovation” of the National Livestock Mission will be used and will be implemented through State Animal Husbandry Departments. The Krishi Vigyan Kendras (KVK) of respective States can be used as training providers, where they will act as the State Implementing Agencies (IAs) of departmental schemes or programs.
- The skilling programs of AI technicians/ MAITRI will be funded through the Rashtriya Gokul Mission.
- The dairy-related skill programs will be funded by the NPDD- National Program for Dairy Development scheme.

iv) Action Plan with Financial Requirement and Source of Funds

SI No	Categories	Total Fund Required	Source of Funds
1	Large and Small livestock (cattle/buff/sheep/goat/pig) entrepreneur	33.75	<ul style="list-style-type: none"> • Pradhan Mantri Kaushal Vikas Yojana (PMKVY) <ul style="list-style-type: none"> • Sub-Mission on Research & Development, Livestock Insurance, Extension and Innovation” of National Livestock Mission. • On payment basis
2	Poultry entrepreneur	45	
3	Feed and Fodder entrepreneur	21	
4	Feed and Fodder processing	1.425	
5	AI Technicians (bovines)	227.5	Rashtriya Gokul Mission(RGM)
6	Community Extension agent/Animal health worker/A-HELP	478.345	ASCAD(Assistance to states for the Control of Animal Diseases) funds under LH&DCP
7	Milking person/Milking machine operator	12	
8	Milk quality tester at DCs level	18	
9	BMC/MPP/MCC operator	1.575	NPDD- National Program for Dairy Development scheme
	Total	838.595	NPDD- National Program for Dairy Development scheme

Conclusion

This Framework is an internal policy document agreed to implement by the Department of Animal Husbandry and Dairying. It presents the overall activities related to the Skills Development planned to be implemented through the department and its related sub-ordinate field institutions and statutory bodies. This framework shall serve as a basis for the States and UTs to develop and coordinate their skill development plans and programs along with this department.



Annexure 1

DEFINITIONS

- **“Livestock Sector”** means a grouping of professional activities in livestock and animal husbandry areas based on their main economic function, product, service, or technology.
- **“Skills”** means the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are described as cognitive (involving the use of logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools, and instruments).
- **The National Skills Qualification Framework (NSQF)** organizes qualifications according to a series of levels of knowledge, skills, and aptitude. These levels are defined in terms of learning outcomes that the learner must possess regardless of whether they were acquired through formal, non-formal, or informal learning.
- **National Occupational Standards (NOS):** NOS defines the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
- **The National Skill Qualification Framework** is composed of ten levels, each representing a different level of complexity, knowledge and autonomy required to demonstrate the competence commensurate with that level.
- **“Competence”** means the proven ability to use acquired knowledge, skills and personal and social abilities, in discharge of responsibility roles. It is the ability to do a job well.
- **“Qualification”** means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.

Annexure 2

List of Acronyms

1. AHD – Animal Husbandry department
2. CAHWs – Community Animal Health Workers
3. WOAH – World Organization for Animal Health
4. CAGR – Compound Annual Growth Rate
5. GVA – Gross Value Added
6. FAO – Farmer Agriculture Organization
7. AHIDF – Animal Husbandry Infrastructure Fund
8. SDCFPO – Supporting dairy Cooperative Farmer producer Organizations.
9. RGM – Rashtriya Gokul Mission
10. DFS – Director of Financial Services
11. KCC – Kisan Credit Card
12. DAHD – Department of Animal Husbandry and Dairying
13. FMD – Foot and Mouth Disease
14. LH&DC – Livestock Health and Disease Control
15. PPR – Pestes des petits Eradication Program
16. AWBI – Animal Welfare Board of India
17. CCSEA – Committee for Control and Supervision of Experiments on Animals
18. NDDB – National Dairy Development Board
19. MAITRIs – Multipurpose AI Technicians in Rural India
20. SHG – Self Help Group
21. NRLM – National Rural Livelihoods Mission
22. MoFAHD – Ministry of Fisheries, Animal Husbandry and Dairying
23. MoRD – Ministry of Rural Development
24. MoU – Memorandum of Understanding
25. A-HELP – Accredited Agent for Health and Extension of Livestock Production
26. NLM – National Livestock Mission
27. HQs – Head Quarters
28. CEAH – Centre of Excellence in Animal Husbandry Sector
29. NPCSCB – National Program for Civil Service Capacity Building
30. CPDO&TI – Central Poultry Development Organization & Training Institute
31. CFSPTI – Central Frozen Semen Production & Training Institute
32. CCBF – Central Cattle Breeding Farm
33. AQCS – Animal Quarantine and Certification Services
34. CCSNIAH – Chaudhary Charan Singh National Institute of Animal Health
35. ADCP – National Animal Disease Control Program

Annexure 2

List of Acronyms

36. CDL – Central Drug Laboratory
37. RFS – Regional Fodder Scheme
38. CSBF – Central Sheep breeding farm
39. HGM – High Genetic Merit Bulls
40. CCBF – Central Cattle Breeding Farm
41. CHRS – Cattle Herd Registration Scheme
42. FPR – Field Performance Recording
43. INAPH – Information Network for Animal Productivity and Health
44. AUID – Animal Unique Identification Number
45. CPDO – Centre Poultry Development Organizations
46. ASCI – Agriculture Skill Council of India
47. MSDE – Ministry of Skill Development & Entrepreneurship
48. QPs – Qualification Packs
49. NOS – National Occupation Standards
50. ICAR – Indian Council for Agriculture Research
51. IVRI – Indian Veterinary Research Institute.
52. CEDSI – Centre of Excellence for Dairy Skills in India
53. BMC – Bulk Milk Cooler
54. ERP – Enterprise Resource Planning
55. OJT – On Job Training
56. SDC – Skill Development Committee

Annexure 3

Cost Norms

Cost Norms for one training / District under STRY

* Limit of Rs.500/-per day/per trainee is for District level training only if it is residential, otherwise Rs.250/-per day/per trainee is applicable.

Note: An amount of Rs. 500/- per day/trainee shall be incurred as per ATMA cafeteria & will be inclusive of;

- Travel cost by bus or second-class sleeper.
- Refreshments/meals and stay during training.
- Expenditure on training venue, training material agricultural inputs etc.
- Cost of honorarium and/or travel of the resource person.
- Any other justifiable expenditure considering fixed cost on the travel of youth, training cost should go down as number of day's increases or nature of refreshment.
- Any participant refusing to avail of boarding & lodging facilities may not be given cash payment in lieu thereof.
- Likely expenditure or State/location-specific cost norms need to be approved in advance.

Reference:

- Annual Report, 2022-23, Department of Animal Husbandry and Dairying, Gol
- Economic Survey 2022-23, Ministry of Finance, Gol
- NITI Aayog report Demand & Supply Projections towards 2033- Crops, Livestock, Fisheries and Agricultural Inputs-The working Group Report Feb 2018)
- Evaluation of Centrally Sponsored Schemes in Agriculture, Animal Husbandry and Fisheries Sector Volume 2 - Agriculture, NITI Aayog and Development monitoring and evaluation Office, August 2020 Report 2020/UCSS01/2
- Basic Animal Husbandry Statistics (BAHS)- 2022, Department of Animal Husbandry and Dairying (DAHD), Gol, New Delhi
- Dairy and Products Annual 2022, Foreign Agricultural Services, USDA, New Delhi
- Statistics, APEDA website
- Situation analysis of Agricultural Holdings Land and Livestock, NSSO 77th Survey, 2018-19 Doubling of Farmers Income, Gol (DFI 2018)

**Published by Credit, Extension and Publicity Division
Department of Animal Husbandry and Dairying
Government of India**



“
| *The greatness of a nation and its moral progress can be*
| *judged by the way its animals are treated* —”


~ Mahatma Gandhi



 @DeptofAHD

 @Dept_of_AHD

 @Dept_of_AHD

 @DOAHDINDIA