ARD

TOPIC - AGRICULTURE

MASTER NOTES PART VIII AS PER SYLLABUS

Animal Husbandry Part I

- **Animal Husbandry**
- **Farm animals and their role in Indian economy,**
- **Animal husbandry methods in India,**
- **Common terms pertaining to different species of livestock,**
- **Utility classification of breeds of cattle.**
- **Introduction to common feeds and fodders, their classification and utility.**

You Tube Lectures on these topics can be accessed through following Links

Overview of Animal Husbandry: https://youtu.be/LECWP8RV50Y

All are advised to through lectures first without that you won't be able to comprehend this topic

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1 What is Animal Husbandry?

Animal husbandry is the agricultural practice of **breeding and raising livestock**. As such it is a vital skill for farmers and is as much science as it is art. Animal husbandry deals with the care and breeding of livestock like buffaloes, cows, pigs, horses, cattle, sheep, camels, goats, etc., that are useful to humans. Extended, it includes poultry farming and fisheries. Fisheries include rearing, catching, selling, etc., of fish, molluscs (shell-fish) and crustaceans (prawns, crabs, etc.). Since time immemorial, animals like bees, silk-worm, prawns, crabs, fishes, birds, pigs, cattle, sheep and camels have been used by humans for products like milk, eggs, meat, wool, silk, honey, etc.

Results for NABARD Grade A 2023 by C4S				
Sl No.	Name	Stream	Have You taken any of the courses offered by Clarity ?	Final Selection
1	Prajakta Liladhar Meshram	Generalist	Yes	Yes
2	ARUN KUMAR BHARTI	Generalist	Yes	Yes
3	PUNITKUMAR NAIKAR	Generalist	Yes	Yes
4	B Lalmuansangi	Generalist	Yes	Yes
5	RAJASEKARAN T	Generalist	Yes	Yes
6	Avinash Horo	Generalist	Yes	Yes
7	DEVIREDDY NAGA SINDHU	Generalist	Yes	Yes
8	KOMPALA VENKATA RAMESH	Generalist	Yes	Yes
9	RAYUDU SAI PADMINI	Generalist	Yes	Yes
10	Ammana Spandana	Generalist	Yes	Yes
11	DS Khuvei Olyson	Generalist	Yes	Yes
12	NAZI FRAH	Generalist	Yes	Yes
13	Sathish Kumar T	Generalist	Yes	Yes
14	Diwanshi Rana	Generalist	Yes	Yes
15	Ayush Anand	Generalist	Yes	Yes
16	Romi Singh	Generalist	Yes	Yes
17	Arun Manhas	Generalist	Yes	Yes
18	Appaji Pundalik Naik	Generalist	Yes	Yes
19	Darshan GN	Generalist	Yes	Yes
20	Rishabh Verma	Generalist	Yes	Yes
22	Ananya M	Generalist	Yes	Yes
23	Akshay Nair Nambalat	Generalist	Yes	Yes
24	RIYANABEGUM I NAYKAR	Generalist	Yes	Yes
25	SIDDHARTH DUBEY	Generalist	Yes	Yes
26	Suraj Kumar Prajapathi	Generalist	Yes	Yes
27	Shivam dheeran	Generalist	Yes	Yes
28	DOLLY Lalchandani	Generalist	Yes	Yes
29	Pravin	Generalist	Yes	Yes
30	SAURABH SHAM JADHAO	Generalist	Yes	Yes
31	Kunal Atmaram Desale	Generalist	Yes	Yes
32	Thogata Nagaraju	Generalist	Yes	Yes
33	Ranajit Patil	Generalist	Yes	Yes
34	Shubham Bhalchandra Kotkar	Generalist	Yes	Yes
35	Suryanshi Nigam	Generalist	Yes	Yes
36	SOUNDAR RAJAN R	Generalist	Yes	Yes
37	Saurabh Singh	Generalist	Yes	Yes
38	Palla Srinivas	Others	Yes	Yes
39	Nancy Singh	Others	Yes	Yes
40	Haffis Mohammed	Others	Yes	Yes
41	Pramod Raj N R	Generalist	Yes	Yes
42	Surya Prakash.M.S	Others	Yes	Yes
43	Vishal kumar bharti	Generalist	Yes	Yes
44	Kallesh Amaresh Totad			
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*Total 51 Candidates have responded of their selection who were associated with Clarity in courses, rest names will be added after confirmation				
** The list includes name of candidates who were associated with any one of the course/guidance by CLARITY and they themselve have marked YES in GOOGLE FORM				
***We are not involved in marketing propaganda where a few institutes are picking name of candidates who have just only given mock interview with them and not involved in guidance or course				

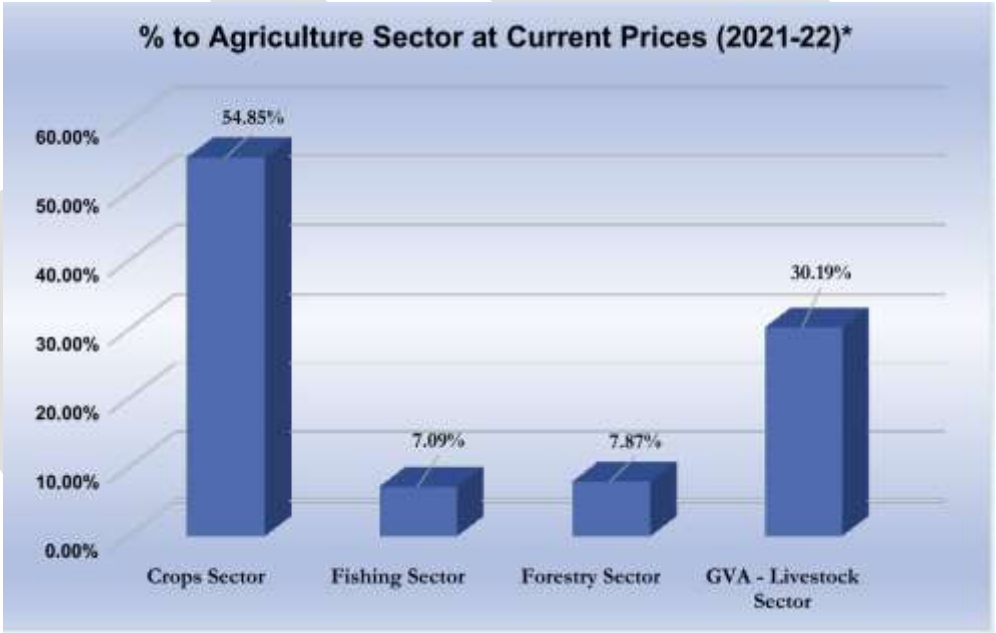
2 Animal Husbandry: Farm animals and their role in Indian economy – Animal Rearing Economics

The objective of animal rearing is to make the livestock useful for human beings for a variety of purposes, many of which have an economic value and is contributing to the economy of India. Therefore, Economics of Animal rearing is all about

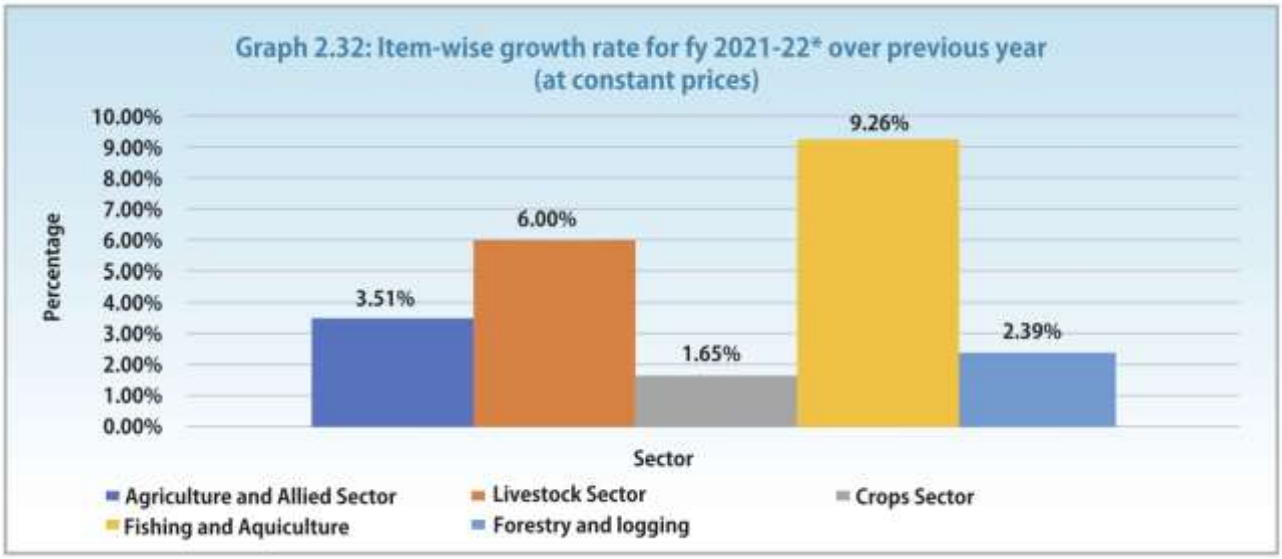
- **Improvement in Livelihood of Individual**
- **Upliftment of the Society**
- **Ultimately Improvement in Economy of India**

Agricultural communities developed approximately 10,000 years ago when humans began to domesticate plants and animals.

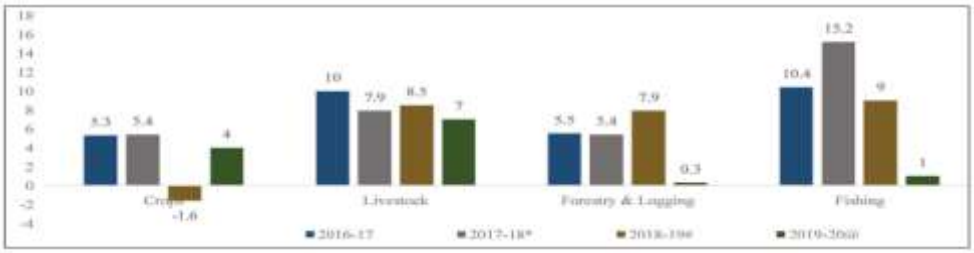
- The **National Policy for Farmers, 2007**, which aims to improve viability of farming through sustainable development of agriculture sector with the main goal to improve welfare of farmers and farm income, also provides for sustained development of the livestock and fisheries sectors.
- Compound annual growth rate of nearly **8 per cent** over the last five years, it assumes an important role in income, employment and nutritional security.
- Contribution of Livestock Sector in GVA as per Economic survey 2019-20**, is an around 5%**
- Livestock sector contributes to around **25% of Agricultural GDP (Acc. Eco Survey last yr)**
- As per the press note on "First Revised Estimates of National Income, Consumption Expenditure and Capital Formation for 2021-22" released by National Statistical Office (NSO), MoSPI on 31st January, 2023 the Gross Value Added (GVA) of livestock sector is about **Rs. 12,27,766 crore.** At current prices during FY 2021-22 which is about **30.19%** of Agricultural and Allied Sector GVA and **5.73% of total GVA.** The Gross Value Added (GVA) of livestock sector (at constant prices) is about Rs. **6,54,937 crore during FY 2021-22 which is about 30.47% of Agricultural and Allied Sector GVA.**



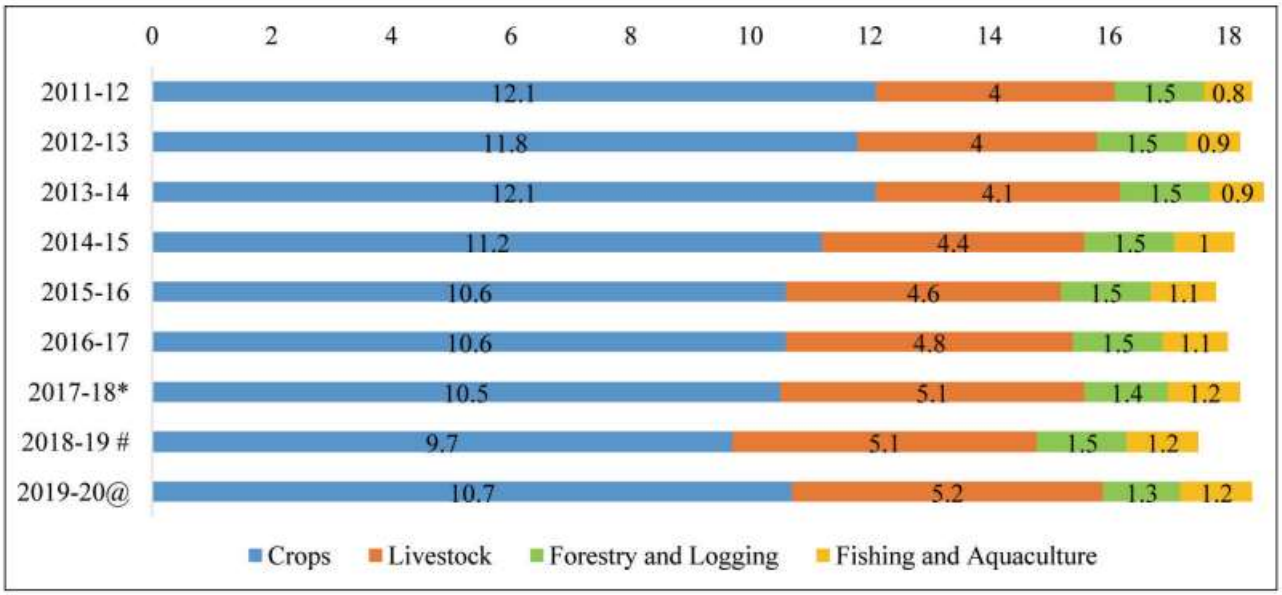
- Livestock, though only half the size of crops, plays a crucial role in driving the agricultural GVA growth. **As per the first revised estimates Livestock Sector sees an annual growth rate of 6.00%** at **constant prices**, more than Crop Sector growth rate which is 1.65%.
- Even the growth rate for Livestock sector is more than the overall growth rate of Agriculture & Allied Sector which is **3.51%** which draws a special attention in better performance of Livestock to drive Indian economy



- In just two per cent of the world's geographical area, India accounts for **15 per cent of the world's livestock population**



Growth of GVA of Agriculture & Allied Sector (at 2011-12 prices)



Source: Based on data of DAFW.

- Percentage Share of GVA of Crop & Allied Sectors in Total Agriculture GVA (at current prices)

2.1 20th Livestock Census Highlight

What is Live Stock Census?

- The Livestock Census has been conducted in the country periodically since 1919-20. Since then it has been conducted once every 5 years.
- It covers all domesticated animals and their headcounts.
- So far 19 such censuses have been conducted by the Ministry of Fisheries, Animal Husbandry and Dairying, in participation with State Governments and UT Administrations.

What is its Use?

- Accurate, reliable data therefore become the sine qua non for planning and development of the sector
- The census is beneficial not just for policymakers but also for agriculturists, traders, entrepreneurs, dairying industry and masses in general.

Highlights 20th Livestock Census (Minor changes in data can be there b/w draft and final report ignore that)

- **Total** – The total Livestock population is **535.78 million** in the country showing an increase of 4.6% over Livestock Census-2012. [Highest Increase in West Bengal (23% inc.) followed by Telangana]

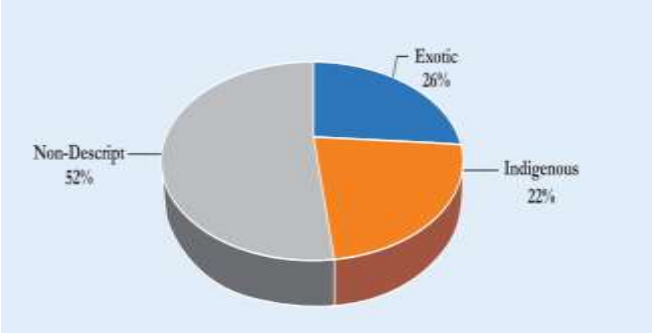
S.No.	States	Population (In million) 2012	Population (In million) 2019	% Change
1	Uttar Pradesh	68.7	67.8	-1.35
2	Rajasthan	57.7	56.8	-1.66
3	Madhya Pradesh	36.3	40.6	11.81
4	West Bengal	30.3	37.4	23.32
5	Bihar	32.9	36.5	10.67
6	Andhra Pradesh	29.4	34.0	15.79
7	Maharashtra	32.5	33.0	1.61
8	Telangana	26.7	32.6	22.21
9	Karnataka	27.7	29.0	4.70
10	Gujarat	27.1	26.9	-0.95

- **Cattle** – The total number of cattle in the country has shown an increase of **0.8 %**. Cattle constitutes **36%** of total livestock population

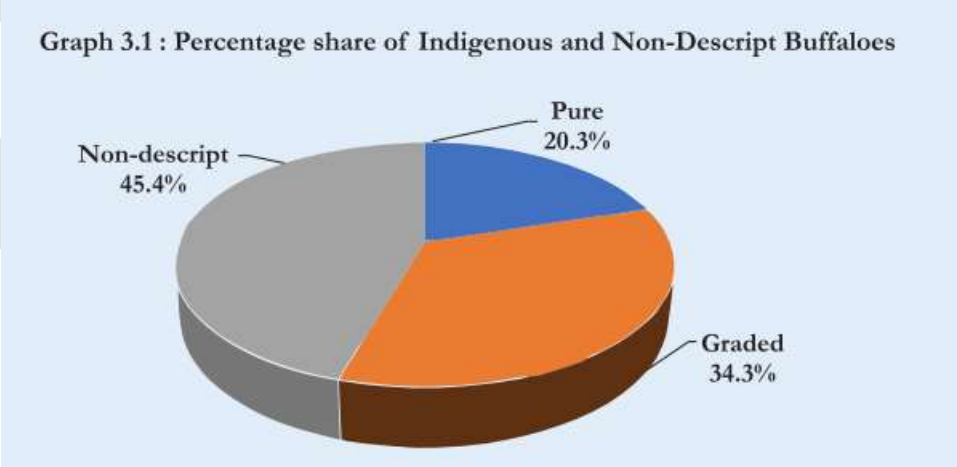
S.No.	States	Population (In million) 2012	Population (In million) 2019	% Change
1	West Bengal	16.5	19.0	15.18
2	Uttar Pradesh	19.6	18.8	-3.93
3	Madhya Pradesh	19.6	18.7	-4.42
4	Bihar	12.2	15.3	25.18
5	Maharashtra	15.5	13.9	-10.07
6	Rajasthan	13.3	13.9	4.41
7	Jharkhand	8.7	11.2	28.16
8	Assam	10.3	10.9	5.29
9	Chhattisgarh	9.8	10.0	1.63
10	Odisha	11.6	9.9	-15.01

- **Total Bovine population** (Cattle, Buffalo, Mithun and Yak) Increase **by 1%**

- **The Female Cattle** (Cows population) increased **by 18 % & 75% of total cattle** in the country are female (cows) a clear sign of dairy farmers' preferences for milk-producing cattle. This also gained momentum in the past couple of years due to the government's assistance in terms of providing sex-sorted artificial insemination (AI), with semen of high-yielding bulls, free of cost at farmers' doorstep.
- **The Indigenous/Non-descript female** cattle population has increased **by 10%**
- There is a decline of **6 % in** the total Indigenous/ Non-descript cattle population over the previous census. However, the pace of decline of Indigenous/ Non-descript cattle population during 2012-2019 is much lesser than as compared to the 2007-12 which was about 9%.



(Cattle Population type wise in %)



(Buffalo Population type wise in %)

- The population of the total Exotic/Crossbred Cattle has increased **by 27 %**
- **Poultry –** The backyard poultry has increased by around **46%** and commercial poultry by 4.5%. Highest % increase is in **Assam**
- **Goat** – The Goat population in the country in 2019 is 88 million showing an increase of 10.1%over the previous census.
- **Pig** – The total Pigs in the country is 06 Million in the current Census, declined by 12.03%over the previous Census.

What Conclusion Do You Draw?

Conclusion 1 -Eastward shift of cattle –**West Bengal** has emerged as the state with the largest number of cattle in 2019(though overall livestock population is **maximum in UP**) followed by Uttar Pradesh, and Madhya Pradesh. In 2012, Uttar Pradesh had the largest number of cattle but this population has come down by almost 4 per cent. States that registered the maximum increases between 2012 and 2019 were West Bengal (15.18%), Bihar (25.18%) and Jharkhand (28.16%).

Conclusion 2 - **Decline in Indigenous cattle**-Due to continuous fall in productivity, indigenous breeds of cattle have become liabilities for farmers, forcing them to desert the unproductive cows. Farmers find other animals such as buffaloes, goats and sheep much more productive. Unlike cows, if these animals become unproductive, they can be sold and slaughtered for further processing.

Conclusion 3 - Experts believe this could have long term health and environmental impacts because the milk of indigenous breed has higher nutritional value than that of crossbreeds. Moreover, there is a danger of losing these indigenous breeds, which have been developed and sustained by generations from time immemorial.

Conclusion 4 - **Increase in Exotic and Cross Breed cow / Buffalo-** A clear sign of dairy farmers' preferences for milk-producing cattle. This also gained momentum in the past couple of years due to the government's assistance in terms of providing sex-sorted artificial insemination (AI), with semen of high-yielding bulls, free of cost at farmers' doorstep.

The more the number of animals that produce milk, the more would be pressure on land and fiercer would be competition between man and animals for survival

Conclusion 5 - **Decline in Bull Population** – However, the number of milch animals have increased but number of bulls have decreased which used for ploughing purpose, Farm mechanization market in India has been growing at a CAGR of 7.53 per cent during 2016-2018. The increasing Farm mechanization may have reduced the need of Draught animals.

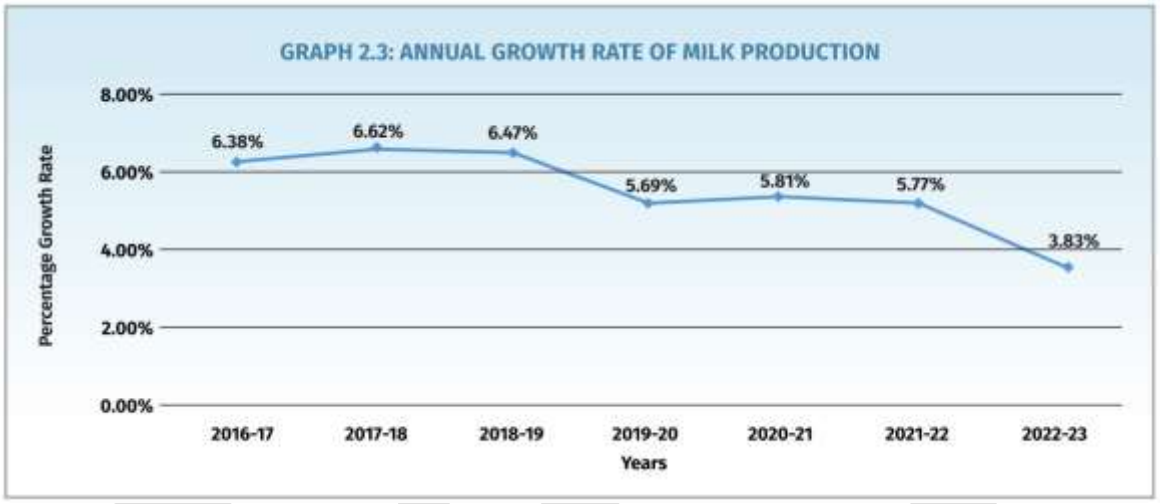
Conclusion 6 - **Backyard Poultry** –Backyard poultry production comprises rearing of indigenous birds with poor production performances. The sharp increase in backyard poultry is a significant change in the rural landscape which shows a sign of poverty alleviation.

Conclusion 7 - **Goat population Increased** – Goats are capable of adapting to various agro-climatic conditions ranging from arid dry to cold arid to hot humid. They can be raised in plains, hilly tracts, sandy zones and at high altitudes. Goat has been described as a poor man's cow (or mini-cow) because of its immense contribution to the poor man's economy, it is also a sign of poverty alleviation

Conclusion 8 - **Decline in Pig Population**–Maximum Pig Population in India is from Eastern and North Eastern part; the decline may be due to alternative means of livelihood as many government schemes related to horticulture have well penetrated in NE India which has feasible agro climatic conditions for exotic fruit, vegetable and flower cultivation. Changing taste and preference of people may also be the cause.

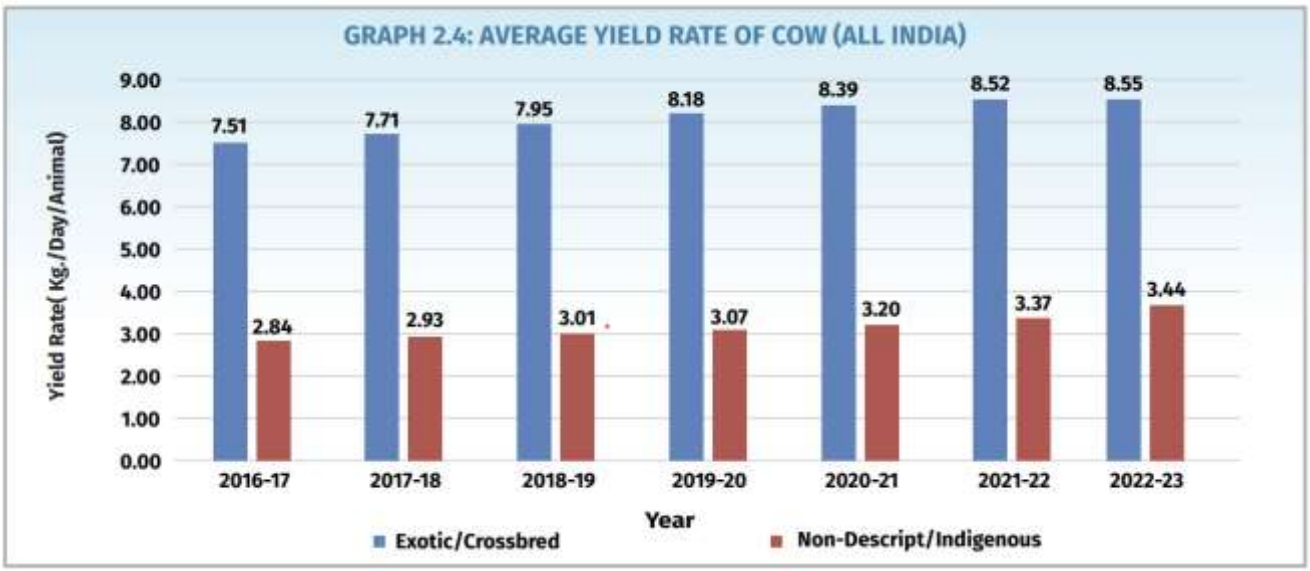
2.2 Some Facts

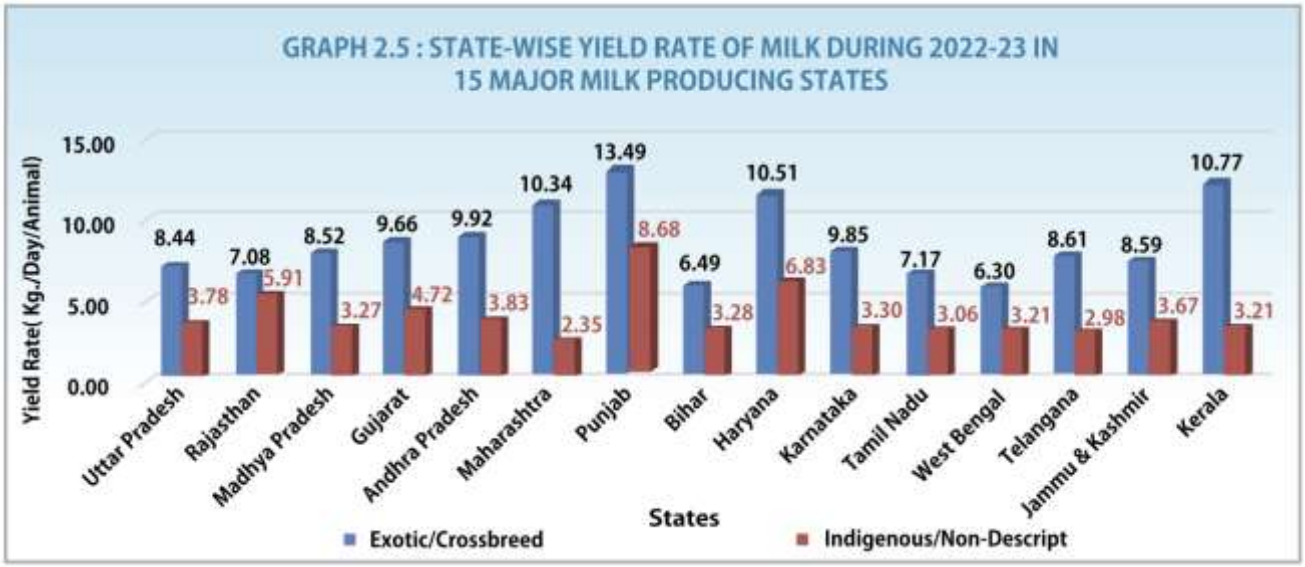
- Annual Growth Rate of Milk Production

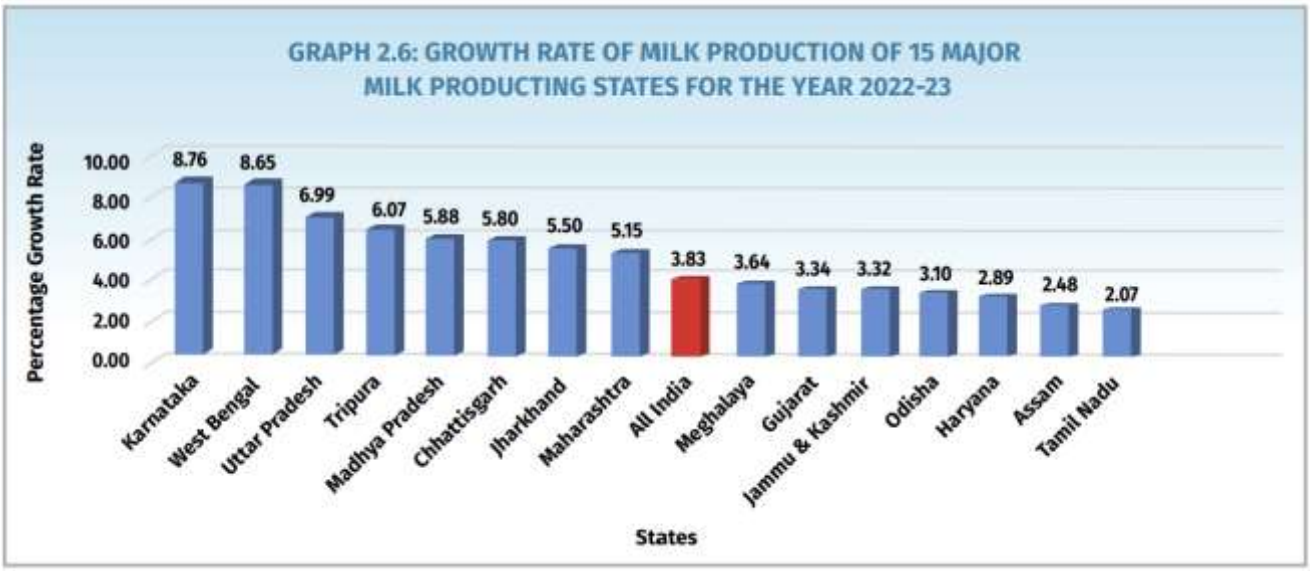


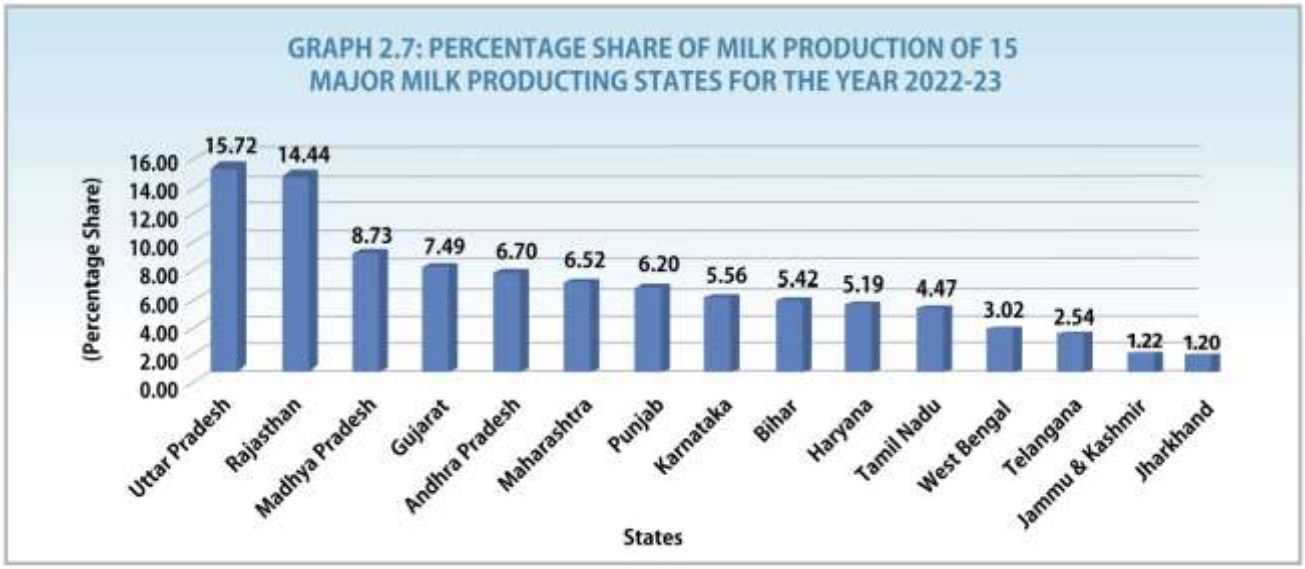
- Average Milk Yield Chart as given below in table (Kg/day)

Exotic Cow	Crossbred Cow	Indigenous Cow	Non-Descript Cow	Indigenous Buffalo	Non-Descript Buffalo	Goat
11.21	7.33	3.41	2.16	5.76	3.80	0.45

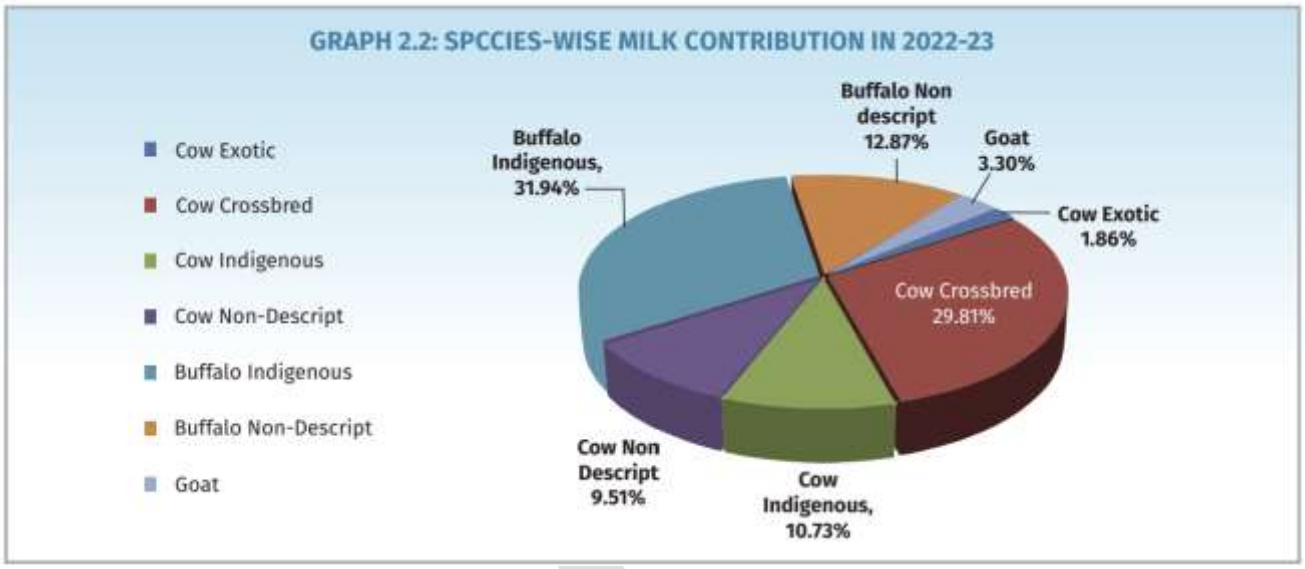


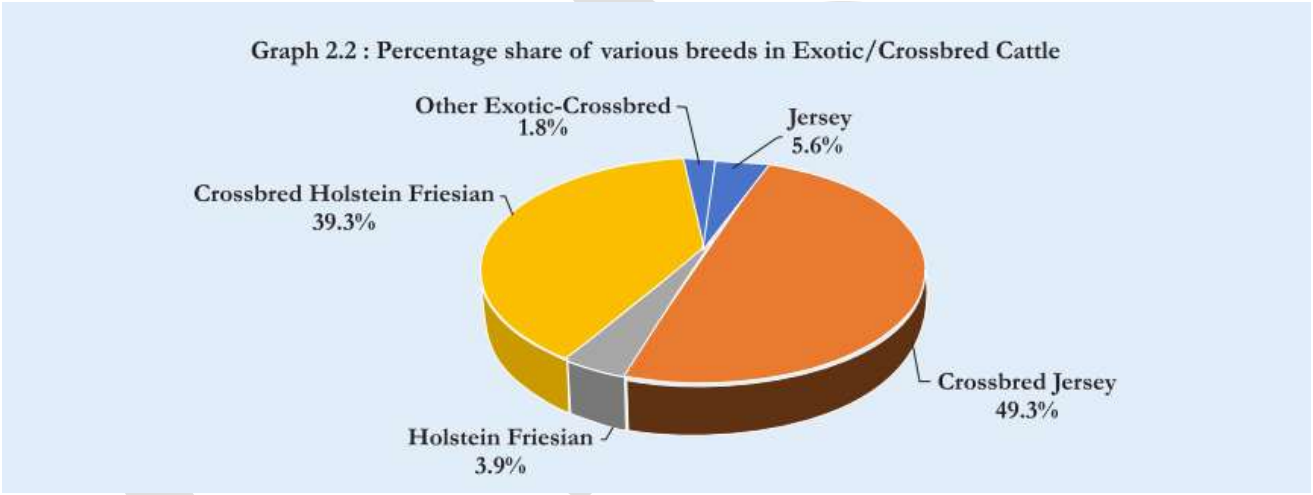




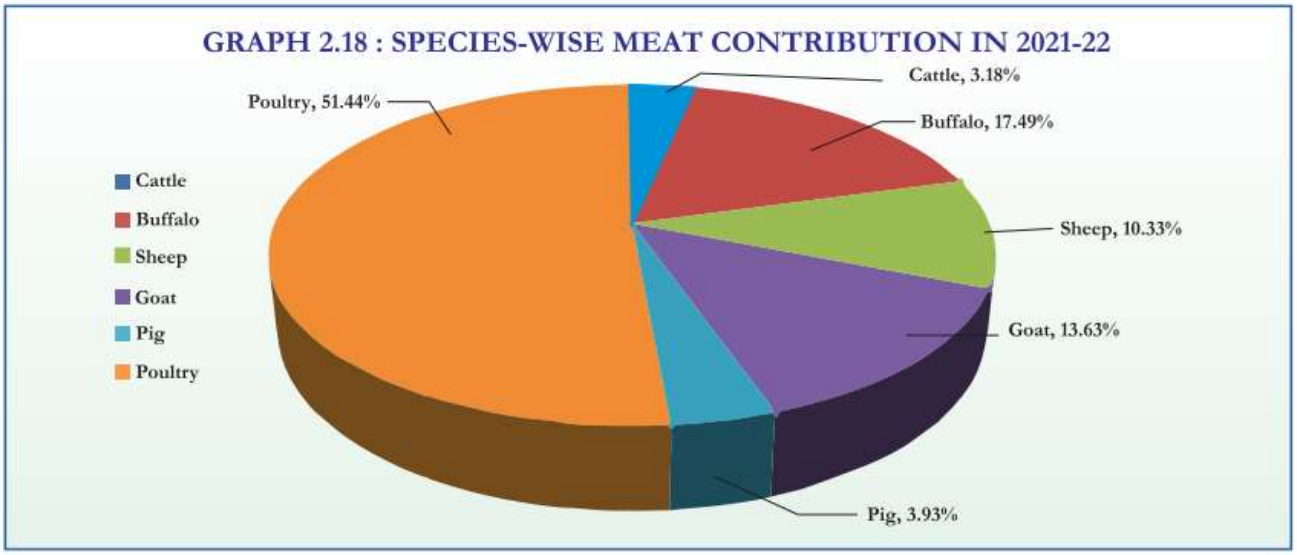


❖ **Species wise Milk Contribution:**





- Category wise Meat Production- **Poultry>Buffalo>Goat>Pig**
- Percentage wise Meat Production: **Highest share poultry 46%** and lowest being that of Cattle



- Annual growth rate 5.65% of Meat production in India
- **National Livestock Mission (NLM)** (2014-15) has been launched during Twelfth Five Year Plan, with the main objective of achieving sustainable development of the sector by providing greater flexibility to states in formulating and implementing the schemes as per the local needs for benefit of the farmers.

- **National Dairy Plan Phase I** (NDP I**) is a Central Sector Scheme for a period of 2011-12 to 2018-19.**

- **Important Institutes**

• The Centre for Animal Disease Research and Diagnosis (CADRAD) of Indian Veterinary Research Institute, **Izatnagar** is functioning as Central Laboratory
• The Disease Investigation Laboratory**, Pune**
• Institute of Animal Health and Veterinary Biologicals, **Kolkata**
• Institute of Animal Health & Biologicals**, Bangalore**
• Animal Health Institute, **Jalandhar**

- National Milk Day : **26 November -** World Milk Day, celebrated annually on June 1st of every year is a moment to acknowledge the significant contributions of the dairy sector to nutrition, livelihood, and global agricultural economies. In India, dairy is the single largest agricultural commodity, contributing 5 percent to the national economy and directly employing more than 8 crore farmers. India's prominence in the dairy sector is national and global, as it ranks first in milk production, contributing 25 percent to the world's total milk output
- As per the FAO Dairy Market Review (2023) milk production of India is estimated to reach 236.35 million tonnes in 2023-24 registering a growth of 2.5% over the last year beating the world average growth rate. This growth is significantly higher than the global milk production growth rate of 1.3 percent in 2023 over the previous year, highlighting India's robust development in this sector.
- A notable aspect of India's dairy industry is the substantial involvement of women, with **35 percent of women participating in dairy cooperatives**. There are 48,000 women dairy cooperative societies operational at the village level nationwide, fostering inclusive growth and empowering women in rural areas.

- "**National Programme for Bovine Breeding and Dairy Development**" (NPBB&DD) was launched in Feb-2014 by merging of four ongoing schemes namely Integrated Dairy Development Programme (IDDP), Strengthening Infrastructure for Quality & Clean Milk Production (SIQ-CMP), Assistance to Cooperatives (A to C) and National Project for Cattle & Buffalo Breeding (NPCBB)

- "**MAITRI** (Multi Purpose AI Technician in Rural India) is a programme under NPBB.

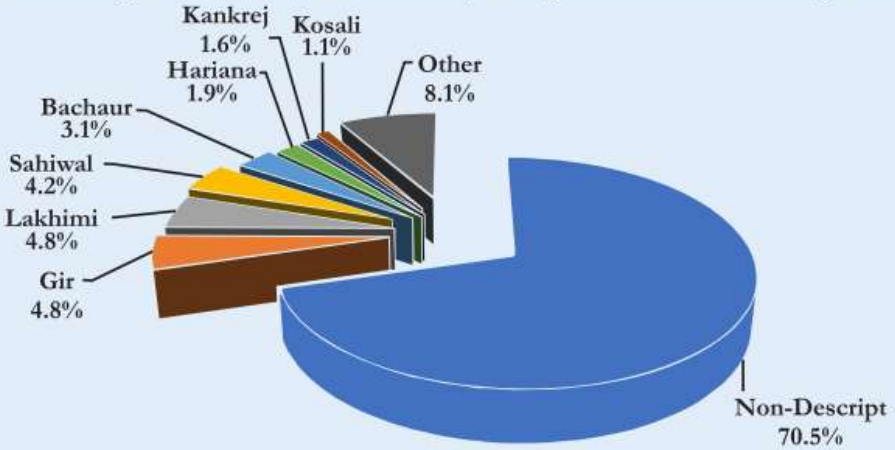
- The scheme 'Integrated Dairy Development Programme (IDDP) in Non- Operation Flood, Hilly and Backward Areas' was started in **1993-94**

- **Dairy Entrepreneurship Development Scheme (DEDS**) was started in September, 2010 with the objective to generate self employment opportunities in dairy sector in the country. This scheme is being implemented through NABARD which provides financial assistance to commercially bankable projects with loans from Commercial, Cooperative, Urban and Rural banks with a back ended capital subsidy of **25% of the project cost to the beneficiaries of general category and 33.33% of the project cost to SC & ST beneficiaries.**

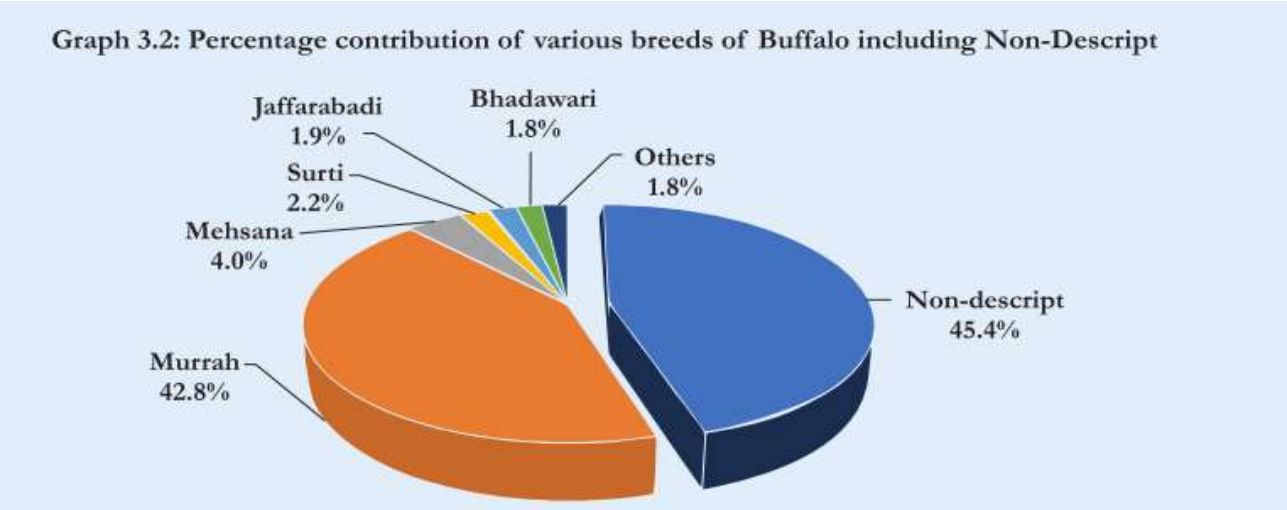
- Cooperatives & private dairies procure about 20% of the milk produced in the country while 32% is sold in the unorganised market and about 48% is consumed locally. About 40 per cent of the milk sold is handled by the organised sector and the remaining 60 percent by the unorganised sector
- National Action Plan for Dairy Development with a target to double the income of dairy farmers through increasing organised milk handling from 20% at present to 50% by 2022- 23.
- **The National Dairy Development Board (NDDB)** with headquarters in **Anand** in Gujarat (India) is a statutory body corporate NDDB was set up in 1965. In 1987, NDDB was declared an institution of national importance and a statutory body by an Act of Parliament.
- about 70.5% of indigenous breeds belong to the Non-Descript category and out of the remaining 29.5%, 4.8% contribution is from **Gir and Lakhimi Breeds** following which Sahiwal contribute 4.2% of total indigenous cattle. Besides, the **Bachaur** breed contributes 3.1% of indigenous cattle, other breeds such as **Hariana, Kankrej and Kosali** are also contributed over 1% of each of the total indigenous cattle. All other recognized breeds together contribute 8.1% of the total Cattle population.

Breed	**Max Population in which state**
Gir	West Bengal
Sahiwal	West Bengal
Bachaur	Jharkhand
Hariana	Uttar Pradesh

Graph 2.3: Percentage contribution of various Major Indigenous Breeds including Non-Descript



- Among Buffalo **Murrah** has maximum population followed by **Mehsana**. UP has maximum Murrah Population and Gujarat has maximum Mehsana population, Gujarat has maximum Surti Population

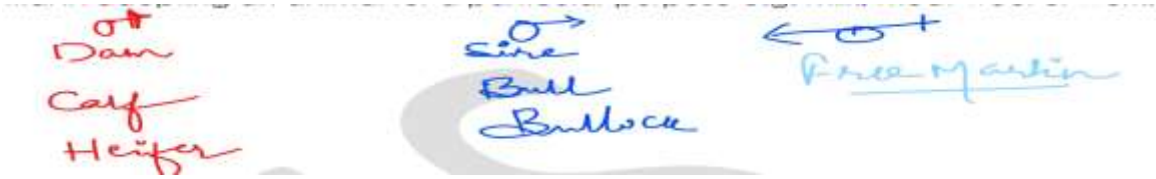


3 Common terms pertaining to different species of livestock

GENERAL

- **Atavism**: The reappearance of a character after it has not appeared for one or more generation.
- **Bovine**: Bovines comprise a diverse group of 10 genera of medium to large-sized ungulates, including cattle, bison, African buffalo, water buffalos, and the four-horned and spiral-horned antelopes
- **Type**: It is a commonly accepted standard that combines those characteristics essential in adopting an animal for a particular purpose e.g. milk, meat wool or work.

Cattle



- **Sire**: The **male parent** of the calf.
- **Dam**: **Female parent** of the calf.
- **Calf**: Young one of cattle or buffalo **below the age of six months** is called calf.

- **Heifer**: The younger female of cattle **above age of six months** to first calving.
- **Bull**: It is unsaturated of, cattle used for breeding or covering the cows.
- **Bullock**: It is the castrated male of cattle used for work.
- **Service:** The process in which mature male covers the female i.e. in heat with the object to deposit spermatozoa in the female genital tract is called service.
- **Conception**: The successful union of male and female gametes & implantation of zygote is known as conception.
- **Polled** – Hornless animal
- **Gestation**: It is the condition of female when developing foetus in present in the uterus.
- **Gestation period**: The period from the date of service (actual conception) to the date of parturition is termed as parturition period or pregnancy period. This period varies according to species of animals e.g. is cows 279-283 days, in buffalo 310 days, sheep 148-152 days, goat 150-152 days.
- **Parturition**: The act of giving birth to young one is called parturition.
- **Lactation period**: The period after parturition in which the animal produces milk.
- **Dry period**: The period after lactation in which the animal does not produce milk.
- **Calving interval**: The period between two successive calving is calving interval.
- **Average**: It is the sum of production divided by No. of animals.
- **West average**: It is the average daily milk yield of a cow is lactation.

$$W.A = \frac{\text{Total milk yield. of a lactation (kg or Lt).}}{\text{Lactation period (days)}}$$

- **Herd Average**: It is average daily milk yield of milling animal in a herd.

$$H.A. = \frac{\text{Total milk yield of a day}}{\text{No. of milking animals}}$$

- **Overall average**: It is average daily milk yield of the animal in the period of calving interval.

$$\text{O.A.} = \frac{\text{Total milk yield of lactation}}{\text{Calving interval (days)}}$$

- **Free martin**: A sterile heifer born twin with the male. Freemartinism is recognized as one of the most severe forms of sexual abnormality among cattle. This condition causes infertility in the female cattle born twin to a male. When a heifer twin shares the uterus with a bull fetus, they also share the placental membranes connecting the fetuses with the dam.
- **Buller or Nymphomaniac: A cow apparently always in heat.**: Cow always in estrus condition. Estrus is the period when high amount of estrogen is presents in the blood. The estrogen produces the behavioral signs of estrus, such as the mounting of other cows, the willingness to stand while mounted by other cow, and general increase of activity.
- **Casting:** It is throwing down the animal and securing the limbs for various purposes like surgical operations, castration, hoof trimming, shearing etc.
- **Deticking:** Removal of the external parasites like ticks, lice, mites present on the body surface of animal.
- **Scrub Bull**: It is non-descript type of stray village cattle.
- **Steer**: The male cattle that is castrated when he is still a calf or before the development of sexual maturity is called steer. (2-4 months)
- **Stud**: Adult male used for breeding purpose.
- **Springer**: A female bovine showing signs of advanced pregnancy.
- **Paddocks:** An enclosed areas of land which are used for grazing and exercising.
- **Veal**: The meat of calf below the age of 3 months.
- **Cara beef:** Meat of buffaloes.
- **Beef**: The meat of- cattle past calf stage
- **Wallowing:** Wallowing in animals is comfort behaviour during which an animal rolls about or lies in mud, water or snow. Some definitions include rolling about in dust, however, in ethology this is usually referred to as dust bathing. Wallowing has two purposes; the most obvious is that of cooling, the other is protection from insects. Wallowing during day time is done during the hottest hours.

PIG

- **Pork**: The meat of swine

- **Gilt:** A gilt is a young female pig. In common use, gilt is used to refer to a pig that has not yet been bred, whether only a few months old or approaching a year. Technically, however, **the term gilt is defined as a female pig that is less than six months old**. A gilt is intact, or capable of breeding and producing young, and her reproductive organs are not surgically or chemically altered.
- **Boar**: a sexually mature male swine, Uncastrated adult male swine
- **Rooting:** The act of a pig burrowing its nose into the ground in order to access vitamins and minerals in the soil and eat small insects
- **Barrow** - a young, castrated male swine. A barrow is a male pig that has been castrated or rendered incapable of reproducing before he reaches sexual maturity. Castration usually takes place while the pig is very young, at about two or three weeks of age. If a male pig is allowed to become sexually mature and then is castrated, he is called a **stag**. A barrow is less aggressive than a boar, or intact male pig, and can be kept with other barrows and gilts. He also easier is for humans to handle, and his meat retains a pleasing flavor and aroma, unlike boars, who produce a foul odor that permeates the meat even after butchering.
- **Swine** – a refers to animals in the pig family
- **Hog** – a mature swine (usually weighing more than 120 pounds)
- **Pig** – (aka. piglet) a young swine (usually weighing less than 120 lbs.)
- **Sow** – a mature female swine
- **Farrowing** – Giving birth to new one

SHEEP

- **Ovine** – the scientific name for sheep
- **Ewe** – a female sheep
- **Lamb** – a sheep less than one year in age
- **Ram** – a male sheep
- **Wether** – a castrated male sheep
- **Mutton**: The meat of sheep & goat.
- **Hogget**: A sheep from weaning until its first shearing.
- **Wether**: Castrated male sheep
- **Cosset** – lamb raised without help of its mother.
- **Tupping:** Act of mating in ewes

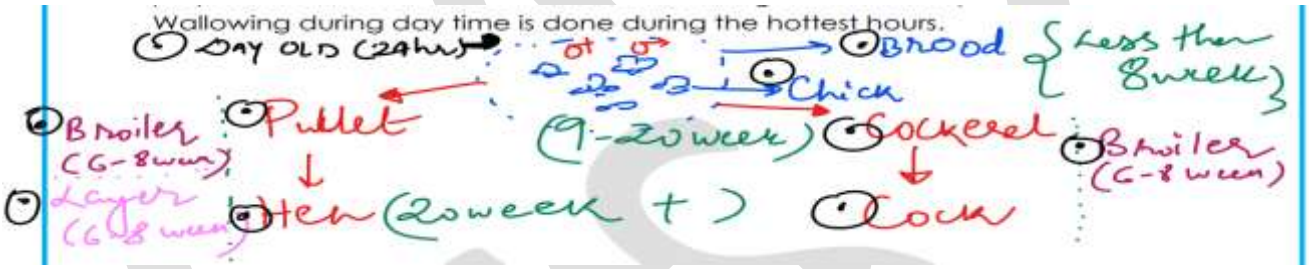
Goat

- **Caprine – refers to animals in the goat family**
- **Kid – a young goat**
- **Wether – a castrated male goat**
- **Buck – (aka. billy) a sexually mature male goat**

- **Chevon**: The meat of goat
- **Buck/Billy:** Uncastrated sexually mature male goat.
- **Doe/Nanny**: Mature female goat.
- **Kid:** Young goat.
- **Kidding**: Act of parturition in goats/Sheep.
- **Cabrito** is the name in both Spanish and Portuguese for roast goat kid in various Iberian and Latin American cuisines
- **Mohair** is a fabric or yarn made from the hair of the Angora goat (not Angora wool from the fur of the Angora rabbit). Both durable and resilient, mohair is lustrous with high sheen, and is often blended to add these qualities to a textile. Mohair takes dye exceptionally well.

POULTRY & BIRDS

- **Poult** – Young domestic turkey



- **Broiler:** Broiler are young chicken of either sex, which are reared primarily for meat purposes and marketed at an age of 6-8 weeks
- **Grower:** The management of birds during 9-20 weeks or to the point of laying is referred to as grower period.
- **Layer:** The management of birds during 21-72 weeks of age for the purpose of laying eggs (egg production).
- **A stag** is a male chicken (usually under 10 months of age)
- **Straight run** is a random distribution of chicks. They have not been sexed to determine the gender. They are sold 'as hatched'. So if you purchase 6 chicks, you could have 0-6 hens and/or 0-6 roosters. If you get a large number of chicks, they usually even out to approximately 50% hens and 50% roosters
- **Hen:** A matured female chicken generally above 20 weeks of age.
- **Cock:** A matured male chicken above 20 weeks of age.
- **Pullet:** A young female chicken from 9 to 20 (7-15) weeks of age.
- **Cockerel:** A young male chicken from upto 12 months of age.
- **Chick:** A young male or female fowl below 8 weeks of age.
- **Day-old chick:** Hatched out chick is called as day-old-chick up to 24 hours.

- **Brood:** A group of chicks of same age raised in one batch is called as a brood.
- **Poultry:** Although the term poultry is very often used as synonymous to chicken, it includes a number of avian species such as chicken, duck, geese, guinea fowl, quail, turkey, etc. that are domesticated for economic (egg or meat) purpose.
- **Ration:** A measured amount of feed allowed to a bird during a particular period of time.
- **Roaster**: A broiler grown up to the age of 9-11 weeks with a body weight of 2.5 to 3.0 kg.
- **Shank:** Legs
- **Snood:** A fleshy protuberance (swelling) hanging from the base of the beak in turkeys or a fleshy wrinkled fold of skin that hangs down over a turkey's beak.
- **Spent Hen:** A breeder or commercial type egg hen that no longer performs at desired production levels.
- **Tom:** Male turkey
- **Trap nest:** A laying nest where the layer gets trapped when she enters to lay eggs. It is used to identify the layer for the pedigree studies.
- **Vent:** The common external opening from the cloaca for the digestive system, urinary system and reproductive system.
- **Hemorrhagic Septicaemia** – Animal Disease Synonyms: Pasturellosis, shipping fever, ghatsurp It is an actual infectious disease of cattle, buffalo, sheep and goat. It distances transportation. In India, the disease is enzootic in nature. Etiology environmental conditions, malnutrition and long distance transportation. In India, the disease is enzootic in nature. Etiology: It is caused by Pasteurella multocida Transmission: Ingestion of contaminated feed and water and Inhalation.
- **Coccidiosis** is a disease caused by the invasion of the digestive tract by microscopic single celled protozoan parasites, called Coccidia. Coccidiosis spreads from bird to bird through eating or drinking contaminated food, water, litter or other material contaminated with Coccidia.
- **Ad lib (Latin):** A latin word that means "to one's pleasure." In nutrition, ad libitum (abbreviated "ad Lib") refers to feeding management in which animals are fed without restriction.
- **Age at sexual maturity:** Sexual maturity is the duration (number of days) between the date of hatch and the date of first egg laid or date of 5% egg production as the case may be. The younger the bird when she begins to produce eggs, greater the egg production will be during her laying year. Early sexual maturity is always advisable but too early sexual maturity is also not good because it produces more number of small sized eggs (peewee eggs) which fetches lower price and more incidence of prolapse (falling down or slipping out of place of an organ or part such as uterus**). Light breeds like Leghorn mature about a month earlier than heavy breeds. Age at sexual maturity is usually related with the production of eggs and finally with the profitability of the farm.**
- **Artificial Incubation:** is the hatching of eggs through a mechanical equipment such as incubator
- **Artificial Insemination:** is the technique by which seminal fluid (semen) of male is introduced or deposited into the female reproductive tract by a pipette. One cock will yield about 0.5 to 1.0 ml of semen depending upon the body weight. About 0.05 to 0.10 ml of semen is enough to inseminate one hen.

- **Beak trimming (Debeaking):** Removal of a part of upper and lower mandible (beak) by a sharp knife and cauterizing by a soldering rod in order to minimize feed wastage and to reduce the risk of feather pecking/cannibalism. This debeaking is very common in practical poultry farming.
- **Bill:** The beak of duck or geese. It is being used for picking up of feed particles and also for self defence,
- **Broiler (Fryer):** Immature young chicken of either sex with tender meat, soft, pliable, smooth textured skin and flexible breast bone cartilage of about **6 weeks of age. Commercial Broiler strains Eg. Cobb, Hubbard, Lohman, Anak 2000, Avian -34, Starbra, Sam rat etc.,**
- **Brood:** A group of (baby) chicks from one hatch.
- **Brooder:** A metallic or wooden equipment used for artificial brooding of young chicks by supplying the necessary heat. Management of brooder in a brooder house for rearing of baby chicks is very much important and its application can also be learnt through several educative materials and practicals observed through the trainers.
- **Brooder chick:** A young chick of **0 to 8 weeks of age.**
- **Broodiness:** is a condition in which **hen stops laying** and show tendency to sit on eggs to hatch them.
- **Broody hen:** A hen which tends **to sit on the egg** to hatch them.
- **Cages:** A system of housing poultry made up of steel and welded wire netting in horizontal, stepped or vertical configuration usually in two or three tiers. Example: Californian and Battery Cages. The size of cages depends on the type of birds to be housed.
- **Candling:** is the process of visual examination of an intact egg against a light emerging through an aperture (opening) to determine the interior quality, shell soundness or stage of embryonic development.
- **Cannibalism:** is the vice (Bad habit) that may occur in chickens of all ages. It is characterized by pecking of head, feather, vent and wing due to over crowding, excess lighting, lack of exercise and improper balanced ration. This vice may be overcome by identifying and correcting the faulty management practices or by correcting feed, if it is unbalanced and debeaking.
- **Capon:** An young male bird whose testicles have been removed and usually below **8 to 10 months of age**
- **Chick:** A young one of poultry from day old to **seven or eight weeks of age.**
- **Chicken**: The most widely domesticated fowl.
- **CLFMA:** means Compounded Livestock Feed Manufacturers Association of India, which enrols many feed manufacturing companies
- **Clutch:** Eggs laid by a hen on consecutive days without a break.
- **Coccidiosis:** A disease caused by coccidia (micro-organism) with symptoms of anaemia, blood-mixed dysentery and death.
- **Cock (Rooster):** A matured male chicken of **above 20 weeks** of age usually kept for breeding.
- **Cockerel:** An immature young male fowl from **5 to 8 months** of age and reared for meat purpose.
- **Comb:** A fleshy protuberance (swelling) on the top of the fowl's head varying in size and shape.

- **Coryza:** is a type of disease in which membrane lining the upper part of respiratory tract that is eye, nostrils and sinuses of head are inflammed.
- **Croiler:** is a colour feathered broiler;developed from crosses of Barred Plymouth Rock, Dark Cornish, New Hampshire and Sussex breeds. In general, the croilers are having lesser growth rate and poorer feed efficiency compared to broilers. Therefore, they are more suitable for backyard or free range or semi-intensive system of rearing rather than intensive system. Even though they grow at a slower rate, **they attain a body weight of 1.5 kg at 8-10 weeks of age with FCR of 2.5-3.0**; they fetch a higher price per kg compared to the broiler. Some of the croiler varieties available in Indian Market are **Giriraja, Nandanam Chicken II and Vanaraja.**
- **Culling:** Removal of unproductive or undesirable birds from the flock which when judged from their physical characteristics are found to lack the qualities for which they were reared, whether it may be for egg production, table purposes or for show; an important and continuous operation for profitable poultry farming. In case of calves the culling is done due to Weak birth weight Poor type Poor growth rate Disease infected. The important reasons for culling the cows from the herd are as: i) Abortion cases ii) Disease infected iii) Sterility iv) Low productivity v) Udder infection vi) Long dry period vii) Excessive fattening viii) Old age C. Reason for culling the breeding bulls is as: i) Low pedigree ii) Poor semen quality iii) Lack of sexual libido iv) Disease v) Old age.
- **Deep litter:** Intensive type of rearing birds on floor covered with bedding material for the birds like wood shavings, groundnut hulls, paddy husk etc. The deep litter system is less expensive and needs less number of manpower for management when compared to cage house system.
- **Delouse:** To eradicate lice (ectoparasite irritating to growing birds and affecting feed consumption and egg production) from bird.
- **Desi fowl:** Fowl indigenous to India; Not a pure breed. Exhibits great variation in size, shape, colour and conformation. Best mother and ideal sitter (Broody in nature). Desi fowls are preferable for opting of a backyard poultry farm on a small scale by land less, marginal farmers.
- **Downtime:** Period between removal of one batch and introduction of new batch of birds in the shed (or) is the period of time between two batches when the house is depopulated, disinfected, kept closed and empty.
- **Drake:** Adult male duck
- **Dressed bird:** A slaughtered bird with feathers, feet and head removed. In other words, a ready-to-cook chicken.
- **Dressing percentage**: Dressed weight divided by live weight of the bird multiplied by one hundred.
- **Dressing Percentage** = Dressed weight in kg/ Live weight in kg x 100
- **Dubbing:** Process of removal of comb and wattles of large combed males to prevent frost-bite and to enhance fertility. It is done on day one of bird's life with the help of scissors.
- **Duckling:** Young one of the duck
- **Eaves:** The point at which the roof project out from the side of the building.
- **Egg tooth:** Small horny protrusion on the tip of chick's beak used to pip the egg shell during hatching. It drops off soon after chick hatches out of egg.

- **Feed Conversion Ratio (FCR):** A ratio expressed in terms of kg feed consumed by the bird divided by kg body weight gain in case of broiler and kg egg weight or dozen eggs laid in case of layers.
- **Feed Conversion Efficiency (in layers)** = One kg feed consumed by the bird/ One kg egg weight or dozen eggs laid
- **Feed Conversion Efficiency (in broilers)** = One kg feed consumed by the bird/ One kg body weight gain
- **Feed Efficiency Ratio (FER):** A ratio expressed in terms of kg body weight gain divided by kg feed consumed in case of broiler and kg egg weight or dozen eggs laid divided by kg feed consumed in case of layers.
- **Feed Efficiency Ratio (in layers)** = One kg egg weight or dozen eggs laid/ One kg feed consumed by the bird
- **Feed Efficiency Ratio (in broilers)** = One kg body weight gain/ One kg feed consumed
- **Fecundity:** Producing many offspring (young ones).
- **Filler flats:** A card board or plastic made tray used for collection, storage and transport of eggs. Thirty eggs can be kept in one filler flat.
- **Flock:** A group of birds or animals of one kind, esp. birds or sheep
- **Gosling:** Young one of the Goose
- **Gander:** Adult male goose
- **Green Duck:** is a duckling, which is grown rapidly and marketed from 9 to 16 weeks of age for meat.
- **Grower:** Pullets between 9 to 20 weeks of age or at the point of lay.
- **Hatchability:** may be defined as % of fertile eggs hatched (or) % of chicks hatched from all eggs placed in the incubator.
- **Hatchability %** = % of fertile eggs or chicks hatched/ Number of eggs placed in the incubator
- **Hatcher:** A machine or that portion of incubator that is used for the last 2 or 3 days of incubation and hatching of eggs. No turning of the egg is required.
- **Hen:** A matured female chicken of **usually over 20 weeks old**, and raised for egg production purposes.
- **Hen-day-production**: This is arrived by dividing total eggs laid in the season by the average number of birds in the house.
- **Hen-housed-average:** This is arrived at by dividing the total number of eggs laid in the season by the number of birds originally placed in the house. No deductions are made for any losses from the flocks.
- **Hover:** An equipment with incandescent bulbs for heating element to keep chicks warm.
- **Incubate:** To maintain favourable condition for developing and hatching fertile eggs.
- **Incubation:** is the act of bringing an egg to hatching i.e. providing suitable warmth, humidity and turning movement to facilitate growth and development of embryo inside the egg.
- **Incubation period:** is the period between setting and hatching out of eggs which vary from species to species.
- **Incubator:** A machine developed to provide the proper environment for the development of the fertile egg and embryo into a chick or poult.
- **Keet:** Young one of the Guinea fowl

- **Layer**: A mature female fowl which has been kept for egg-laying purpose (21-72 weeks of age) especially those are in current production (or) an adult commercial chicken of 21 – 72 weeks of age and produces most of the eggs for consumption. Commercial Layer Strains Eg.BV-300, Bowans, Hyline, H & N nick, Dekalb Lohman etc.
- **Liveability** = Number of birds alive at market age x 100
- **Moulting:** The process of shading old feathers and growth of new feather in their place moulting normally occurs once in a year.
- **Mortality rate -** Mortality rate may rise due to disease, predation or high temperature. The mortality rate of small chicks (up to eight weeks of age) is about 4 percent; that of growers (between eight and 20 weeks of age) is about 15 percent; and that of layers (between 20 and 72 weeks of age) is about 12 percent. The average mortality rate of a flock is from 20 to 25 percent per year.
- **Nest Box:** Boxes provided for layer or breeder hens inside their house to lay eggs.
- **Oviparous**: Producing offspring from egg that hatch outside the body.
- **Pause:** Any cessation (stoppage) of egg laying for **a period of 7 days or** more is called pause.
- **Pen:** An enclosed area where birds are housed.
- **Photo-period:** A period of illumination by both natural and artificial means.
- **Pipping:** The act of pecking the shell and shell membranes by the chick in order to break and hatch out of the shell.

Horse

- **Equine** – name of the family that includes horses, donkeys and zebras
- **Foal** – an animal in the equine family, of either sex, that is one year old or younger
- **Colt** – a male horse under the age of four
- **Filly** – a female horse under the age of four
- **SFILACCI** – Horse meat slice
- **Gelding** – a castrated animal of the equine family
- **Pony** – a mature horse that measures less than 14.2hands
- **Mare** – an adult female horse
- **Stallion** – an adult male horse
- **Draft Horse** – a large horse bred for hard, heavy tasks such as ploughing and farm labor

Rabbit

- **Kit** – a young rabbit
- **Doe –** a female rabbit
- **Buck** – a male rabbit

Llama

- **Cria** – a young llama
- Dam – a female llama
- **Gelding** – a castrated male llama

- **Stud** – a male llama
- **Hand** – a non-SI unit of measurement that equals four inches
- **Caprine** – refers to animals in the goat family

❖ **Lactation yield**	❖ **The lactation yield in a lactation period is known as lactation yield, Normally in dairy cattle 30 - 40 % increase in milk production from first lactation to maturity is observed. After 3 or 4 lactation the production starts declining.**
❖ **Lactation Period**	❖ The length of milk producing period after calving is known as lactation period. The optimum lactation period is **305 days**
❖ **Persistency of Milk Yield**	❖ During lactation period the animal reaches maximum milk yield per day with in **2-4 weeks which is called peak yield.**
❖ **Age at first calving**	❖ The desirable age at first calving in Indian breeds is **3 years, 2 years in cross breed cattle and 3 1/2 years in Buffaloes**
❖ **Service period**	❖ It is the period between -date of calving and date of successful conception. For cattle the optimum service period is **60-90 days.**
❖ **Dry Period**	❖ It is the period from the date of drying (stop of milk production) to next calving. A minimum **of 2 – 2 ½ month**s dry period should be allowed
❖ **Inter-calving period**	❖ It is more, profitable to have **one calf yearly in cattle** and at least one calf for every 15 months in buffaloes

4 Summary

Sr. No	Species	Female	Male	Young one	Act of parturition	Average Life Years
1	Cattle	Cow	Bull	Calf	Calving	16-20
2	Local buffalo	Buffalo	Buffalo Bull	Calf	Calving	16-20 .
3	Goat	Doc	Buck	Kid	Kidding	12-15 .
4	Sheep	Ewe	Ram	Lamb	Lambing	12-15 .
5	Swine	Sow	Bore	Litter	Furrowing	8- 10
6	Horse	Mare	Stallion	Foal	Whelping	18-22
7	Ass	Jennet	Jack	Foal	Whelping	14-18
8	Fowl	Hen	Cock	Chick	Hatching	3 – 4
9	Duck	Duck	Drake	Chick (Duckling)	Hatching	4 – 5

5 Utility Classification of breeds

Animal Husbandry	Poultry	Pisciculture	Goat/Sheep
• Milch	• Egg	• Fish	• Milch
• Drought	• Layer	• Prawn	• Meat
• Dual	• Dual	• Others	• Dual

Milch Breeds / Milk Breeds: The cows of these breeds are high milk yields and the male animals are slow or poor work animals. The examples of Indian milch breeds are shahiwal, Red Sindhi, Gir and Deoni The milk production of milk breeds is on the average more than **1600 kg per lactation**

Dual Purpose Breeds: The cows in these breeds are average milk yielder and male animals are very useful for work. Their milk production **per lactation is 500 kg to 150 kg**. The example of this group is Ongole, Hariana, Kankrej, Tharparker, Krishna valley, Rathi and Goalo Mewathi.

Draught Breeds: The male animals are good for work and Cows are poor milk yielder are their milk yield as an average is less than **500 kg per lactation**. They are usually white in color. Twice as much weight can be pulled on pneumatic rubber tube carts. The example of this group Kangayam, Umblacherry, Amritmahal, Hallikar.

- **Exotic breed** – Milch – Jersey, Holstein Friesian
- **Cross-breed cattle in India**

S. No	Name of the Breed	Native breed	Remarks

1	Brown Swiss	Switzerland	Dairy breed
2	Holstein Friesian	Holland	Dairy breed
3	Jersey	British Isles	Dairy breed

5.1 Indigenous cattle of India

5.1.1 Dairy (Milch Breeds)

Breed	GIR	RED SINDHI	SAHIWAL
Milk Yield	1200-1800 kg per lactation	1250 to 1800 kg per lactation	1400 and **2500 kg per** lactation
Age at Calving	Age at first calving 45-54 months and	Age at first calving 39-50 months and	Age at first calving ranges from **37** to 48 months and
Intercalving Period	Inter calving period from 515 to 600 days.	inter calving period from **425**-540 days	inter calving interval is 430 to 580 days
Remarks	Horn - **½ Moon Shape** Known for its hardiness and disease resistance. Also Known as Bhadawari, Surati	Origin Outside India Pakistan	Originated in **Montgomery** known as **Lola** Heavy breed with symmetrical body having **loose skin.**

5.1.2 Draught Breeds

Halikar	Amritmahal	Khilari	Kangayam	Bargur	Umblacherry	Pulikulam
Vijaynagram, Karnataka	Hasan, Chitradurga of Karnataka	Sholapur, Maharashtra	Erode, Tamil Nadu	Erode, Tamil Nadu	Thanjavur, Tamil Nadu	Madurai, Tamil Nadu
Known for Trotting ability	**Maharajahs of Mysore** developed this breed.	Closely **resembles Hallikar** breed	eyes are dark and prominent with **black rings**	Developed for work in uneven **hilly terrains**	Suitable for wet ploughing, **dehorning of bullocks** is peculiar	Well-developed hump.
-	Horns are long and end in sharp **black points**	Long horns turn from **black to pinkish**	Compact body	Known for their speed and endurance in **trotting.**	legs have **white markings**	used for penning in the field, **typical backward curving horns**

5.1.3 Dual Breeds

Tharpakar	Hariana	Kankrej	Ongole	Krishna Valley	Deoni
Tharpakar, Pakistan	Jind, Gurgaon	Gurat, Barmer	Nellore, AP	Krishna, AP	Western AP

1800 to **2600 kg** of milk per lactation.	600 to 800 kg of milk in lactation.	1400 kg per lactation.	1000 kg per lactation	900 kg per lactation.	636 to 1230 kg per lactation.
Age at first calving 38 to 42 months and inter calving period from 430 to 460 days.	Age at first calving is 40 to 60 months and calving interval is 480 to 630 days.	Also called **wadhiar** **silver-grey to iron**-grey or steel black	Age at first calving is 38 to 45 months and the intercalving period is 470 days.	Tail almost reaches the ground.	Caving interval averages 447 days. Age at first calving ranges from 894 to 1540 days.
lyre-shaped horn suitable for ploughing and casting		Horns are **lyre-shaped.** **1 ¼ paces (sawai chal**).	**Exported** to south East Asian and American countries	Loosely built short body. Slow Ploughing	Bullocks are suitable for heavy cultivation.
			Large muscular breed with a well developed hump. Suitable for **heavy draught work.**	Originated from black cotton soil of Krishna	

5.2 Buffalo Breeds

KEY FEATURES OF IMPORTANT BUFFALO BREED

Breed	MURRAH	NILI RAVI	BHADAWARI	JAFFARABADI	SURTI	TODA	PANDHARPURI	NAGPURI (OR) ELLICHPURI
Area	Rohtak, Hisar, Patiala	Ferozpur, Sahiwal	Agra, Gwalior	Gir, Kutch	Kaira, Baroda	Nilgiris of south India.	Kolapur, Solapur	Nagpur, Akola
Key feature	1.Colour **jet black** 2.**Tightly curved horn** Massive body	1.Colour is black with **white marking** on forehead, face, muzzle, legs and tail. 2.**Wall eyes.**	1.**Copper coloured** 2.Wedge shape body 3.**Chevron or V shaped** line 4.Bullocks are good draught animal	1.**Massive forehead** with slight depression in middle 2.Heavy drooping horns bullocks are heavy and used **for ploughing and carting** 3.Maintined by traditional breeders called **Maldharis**	1.Head is long with prominent eyes horns are sickle shaped, moderately long and flat. 2.The peculiarity of the breed is two **white collars,**	1.The head is heavy with horns set well apart, curving inward outward and forward. 2.**Gregarious** in nature.	1.The horns are very long extending beyond shoulder blade 2.**Horns which are very long**, curved backward, upward and usually twisted outwards	1.**Sward shaped** horns
Milk Yield	1500-2500 kg	1500-1850 kg	800 to 100 kg.	100 to 1200 kg	900 to 1300 kg.	-	-	700-1200 kg
Fat %	7%	-	6 to 12.5 per cent	-	8-12per cent	-	-	-
	Most efficient							

5.2.1 For Fast Revision

Breeds	Features

Red Sindhi	• Karachi, Inter calving period from **425-540 days**.
Sahiwal	• Montgomery, **Best indigenous breed** - 1400 and 2500 kg per lactation, Heavy breed with loose skin • Age @ **first calving 37 months**
Gir	• Gujrat, **half moon' appearance horn**,
Amrit Mahal	• **Maharajahs of Mysore** developed this breed. • The muzzle, feat and tail are usually black. • Horns are long and end in **sharp black points.**
Bargur	• Tamil Nadu, Developed for work in **uneven hilly terrains**. • Known for their **speed and endurance in trotting**. • Bargur cattle are of brown colour with white markings.
Halikar	• Karnataka, Known for **draught capacity and trotting ability**
Khilari	• Maharashtra, Grey white, **Long horns turn** forwards in a peculiar fashion.
Kangayam	• Tamil Nadu, The eyes are dark and prominent with **black rings** around them.
Umblacherry	• Tamil Nadu - Suitable for **wet ploughing** and known for their strength and sturdiness • The practice of dehorning of bullocks is peculiar in Umblachery cattle
Pullikulam	• Tamil Nadu, **Jallikattu madu**, Mainly used for **penning in the field**, well developed hump • They have the **typical backward curving** horns of Mysore type cattle.

BREED	FEATURE
Tharparkar	• Pakistan, **lyre-shaped horn**, • The bullocks are quite suitable for **ploughing and casting** • **Highest Milk among Dual Breeds**
Hariana	• Haryana, Horns are small
Kankrej	• Gujarat, The horns are lyre-shaped. • Colour of the animal varies from silver-grey to iron-grey or steel black. • The gait of Kankrej is peculiar called as **1 ¼ paces (sawai chal).**
Ongole	• Large muscular breed with a well developed hump. • Suitable for heavy draught work. • White or light grey in colour. • **Exported to south East Asian** and American countries for development of meat cattle.
Krishna Valley	• Karnataka, Suited in **black soil** • Animals are large, having a massive frame with deep, loosely built short body. • Tail almost reaches the **ground**
Deoni	• Maharstra, Body colour is usually spotted black and white, • Bullocks are suitable for **heavy cultivation**.

Breed	Feature
JERSEY	• It is developed in the Jersey Island, U.K. • It is the **smallest of the dairy types of cattle.** • Dished fore head and compact and angular body. • These are economical producers of milk with 4.5% fat. • Average milk yield is 4500 kg per lactation, **Calving @ minimum age 25 months**
Holstein Friesian	• Netherland • They are ruggedly built and they possess large udder, produce **highest milk per lactation (7000kg)** • They are the largest dairy breed and mature cows weigh as much as 700kg. • They have typical marking of black and white that make them easily distinguishable. • Fat – 3.45%
Brown Swiss	• Switzerland, **The Karan Swiss** is the excellent crossbred cattle obtained by crossing this breed with Sahiwal cattle at NDRI, Karnal.
Red Dane	• Denmark
Ayrshire	• Origin Ayrshire in Scotland is considered as most beautiful dairy breed. These are very active animals but hard to manage. • They do not produce as much milk or butter fat (only 4%) as some of the other dairy breeds. • The breed was also known as **Dunlop cattle or Cunningham cattle**.
Guernsey	• France, The milk has a golden colour due to an exceptionally high content of beta carotene which may help to reduce the risks of

certain cancers. The milk also has a **high butterfat content of 5%** and a high protein content of 3.7%.

5.3 Goat Breeds

Himalyan	Northern	Central	Southern	Eastern
Pashmina	Jamnuapari	Berari	Surti	Bengal breed
Chegu	Beetal	Kathiwari	Malabar	Assam breed
	Barbari		Deccania	

1. **Himalyan**

- **Pashmina:** They are raised above 3400 m elevations in the Himalayas. They produce the softest and warmest animal fibre used for high quality fabrics. The yield of pashmina varies from 75-150 g/goat.
- **Chegu:** This breed is found in the mountainous range of spiti, yaksar and Kashmir. The goats of this breed yield of pashmina, good meat and a small quantity of milk.

2. **Northern Region**

- **Jamnunapari:** Native of Etawah district of Uttar Pradesh. These are large sized, tall, leggy with large folded **pendulous ears** and prominent **Roman nose**. They carry long and thick hair on their hind quarters and has a **glossy** goat. **Horns are short flat**. The average daily milk yield in **2.25 to 2.7 kg.** The milk yield in a lactation period of, 250 days varies from 250 - 300 kg with **3.5 percent fat** content. The Jamunapari goats have been used for evolving the famous **Anglo -Nubian breed** of goats in England.
- **Beetal**: Mainly found in Punjab and this breed is evolved from Jamunapari breed. Color is red and tan, heavily spotted on white. Bucks weight 65 - 86 kg does weight 45-61 kg does yield about 1 kg milk daily, bucks may have a beard.
- **Barbari:** This breed is found in Etawah, Etah, Agra and Mathura districts of U.P, kamal, Paniphat and Rothak in Hariyana, color varies with white, red and tan sports being common. These are small and short haired, with erect horns. They are usually stall fed and yield 0.90 to 1.25 kg of milk (**fat 5%)** per day in a lactation period of 108 days. They are prolific breeders and usually kid twice in 12 -15 months. This breed is highly fit for intensive rearing.

3. **Central region**: This region includes Rajasthan, Madya pradesh, Gujarat .They are derived from Jamunapari breed. These breeds comes in different color combinations. They yield between 0.75 -1 kg of milk per day.

- **Berari:** found in Nagpur and wardha district of Maharastra and Ninar district of Madhya Pradesh. These are tall and dark colored breeds. Doe yields about 0.6 kg of milk per day.

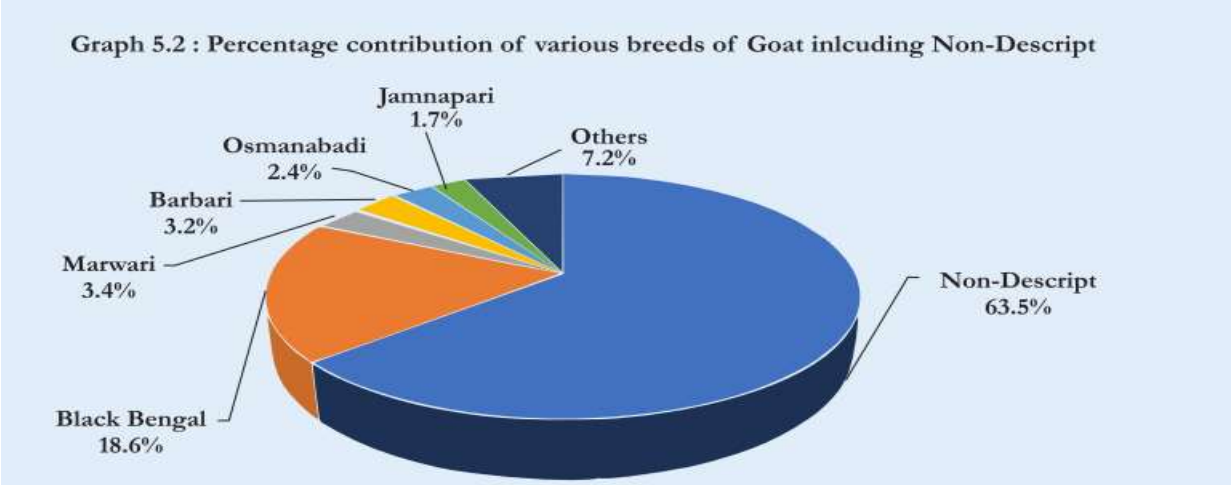
- **Kathiiawari:** This breed is native of Kutch, Northern Gujarat and Rajasthan. The goats have black coat with reddish color marks on the neck. The doe yields about 1.25 k.g of milk per day.

4. **Southern region**

- **Surti:** Surti goats resemble Berari goats and possess white, short legs. Surti is popular in Bombay, Nasik and Surat. Does are good milk producers yielding **2.25 kg per day**.
- **Deccania or Osmanabadi:** These have originated from a mixture of the goats of the plains. They are black, mixtures of white and black or red are also found. The milk yield is 1.4 to 2.25 kg per day.
- **Malarbar (or) Tellicherry:** found in Northern Kerala
- **GBRI:** This is a mixture of two more type of goats. The color is not uniform and may vary from black to white. The milk yield in is 0.9 to 2.8 kg/day.

5. **Eastern Region**

- **Bengal:** The skin of Bengal goats are of excellent quality and is in great demand in India and abroad in foot-wear industry.
- **Assam Hilly breed:**



6. **Exotic Breed**

- **Toggenberg**, Sanine, Nubian, Alpine

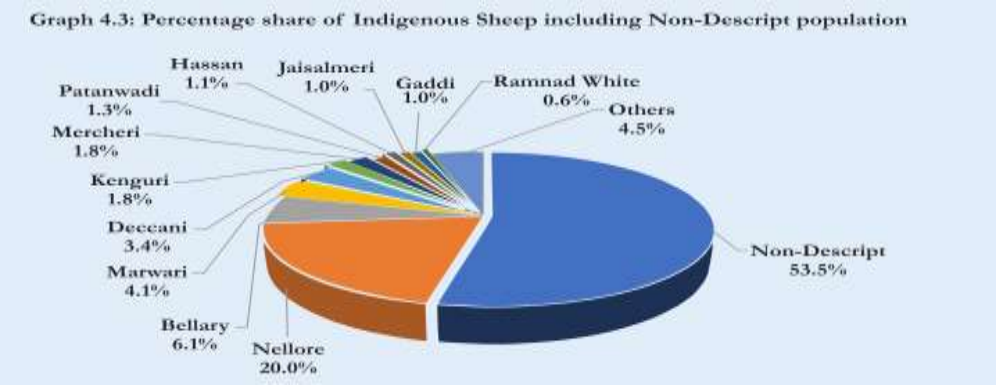
Breed	Maximum Population in State
Barbari	UP
Black Bengal	WB
Osmanabadi	Mha
Marwari	Rajasthan
Jamnapari	UP

5.4 Sheep Breeds

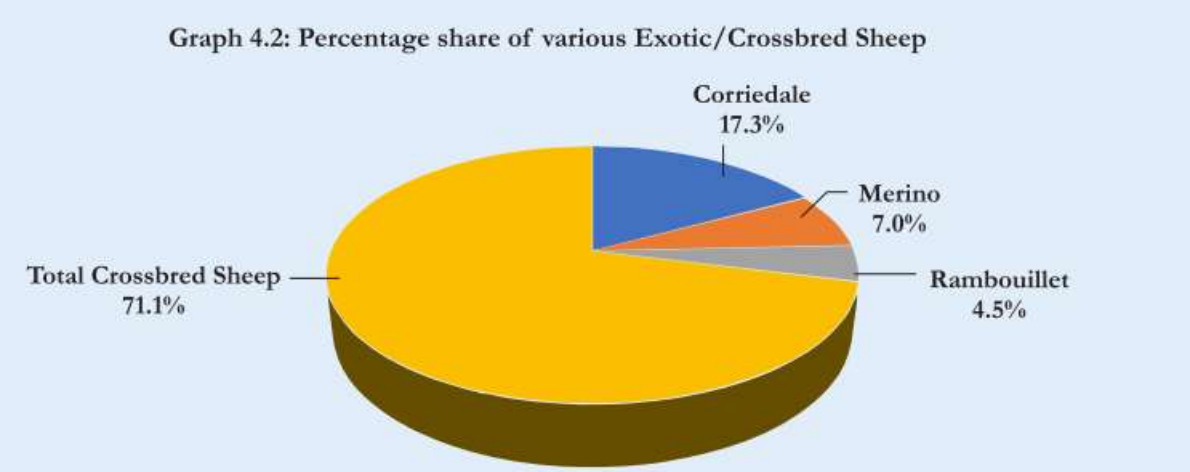
- **Indigenous:** Nellore, Mandya (**typical "U" shaped conformation from the rear**), Trichy black, Madras red, Mecheri

- Among the pure exotic breeds, Corriedale is having a share of 17.3%. The other breeds namely Merino and Rambouillet are contributing 7.0% and 4.5% respectively.

- It is observed that among the indigenous breeds the Nellore breed contribute the highest in the category with 20.0% following which the breeds namely Bellary, Marwari, Deccani, Kenguri and Mecheri contribute a major share as shown in the diagram

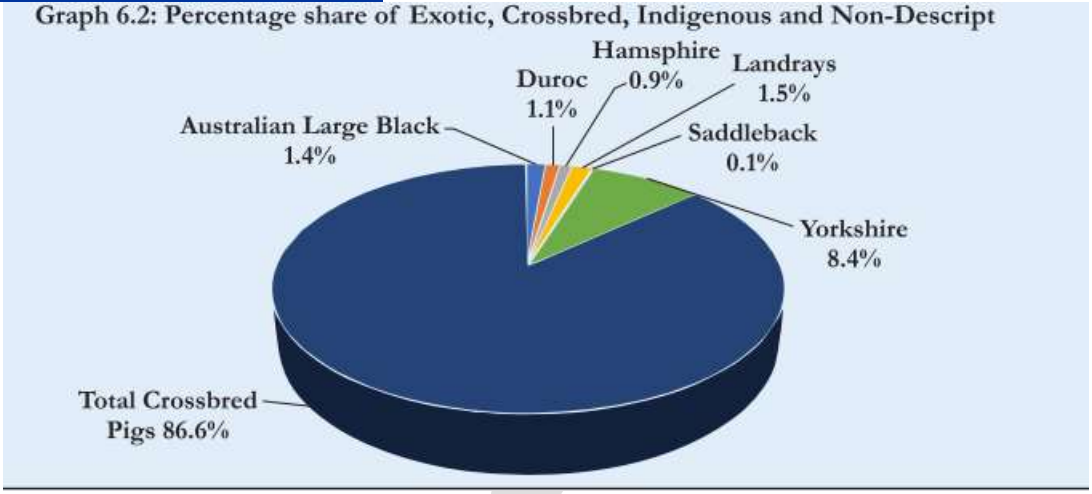


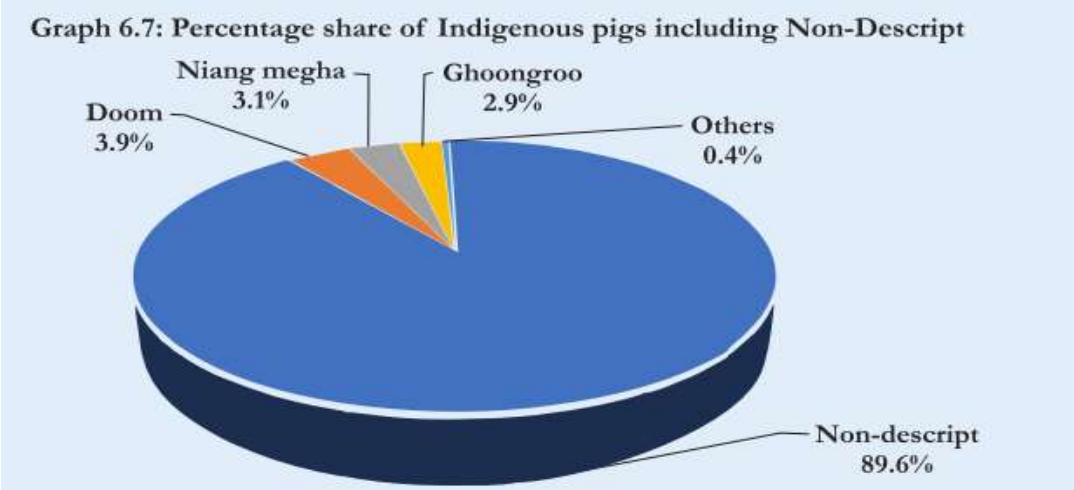
- **Exotic:** Merino(Spain), Rambouillet(France), Dorset(UK), Corriedale(Native of New Zealand)



5.5 Pig Breeds

- Large White Yorkshire, Middle White Yorkshire, Landrace
- Gestation Period **114 Days**





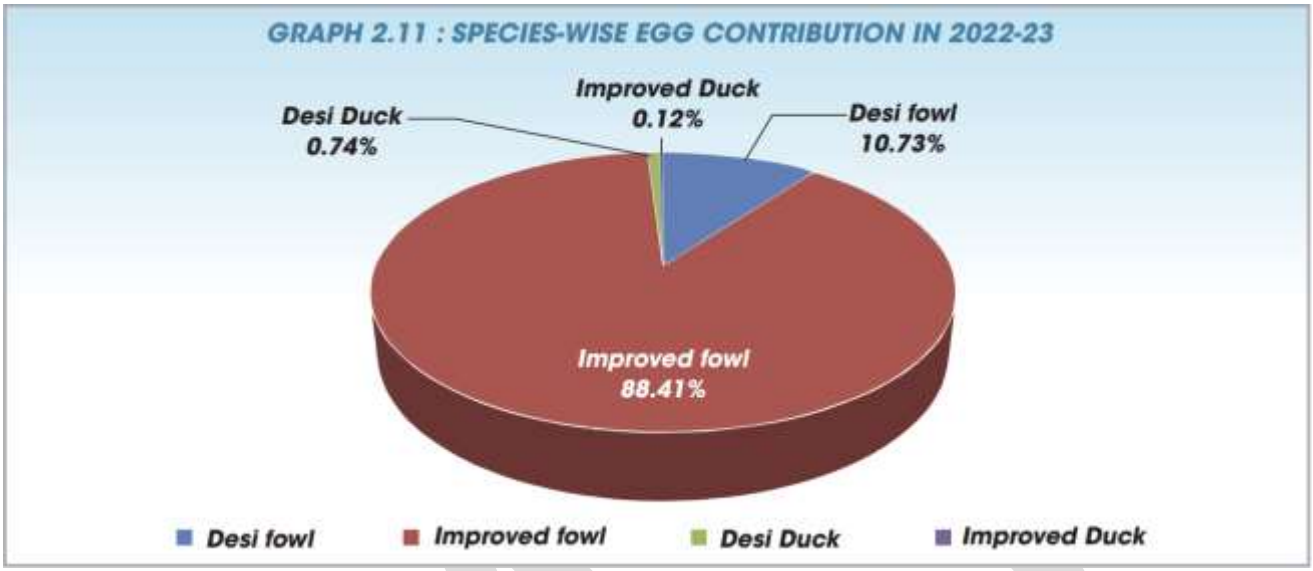
5.6 Poultry Breeds

Non Asiatic	Asiatic
American - New Hampshire, White Plymouth Rock, Rhode Island Red, Wyandote II	Listed below
Mediterranean Class – Leghor, Minorca, Ancona	
English Class – Australorp, Sussex, Orphington	
Native breeds of egg type chicken	Native breeds of Broiler (Meat) Purpose
Breed: Aseel, Frizzle, Kadaknath, Naked neck	LI-80, Golden-92, Priya, Sonali, Devendra Caribro

Some breeds laying high number of eggs per year

Red Sussex	**250-300**

Rhode Island Red	**280**
Plymoth rock	**280**

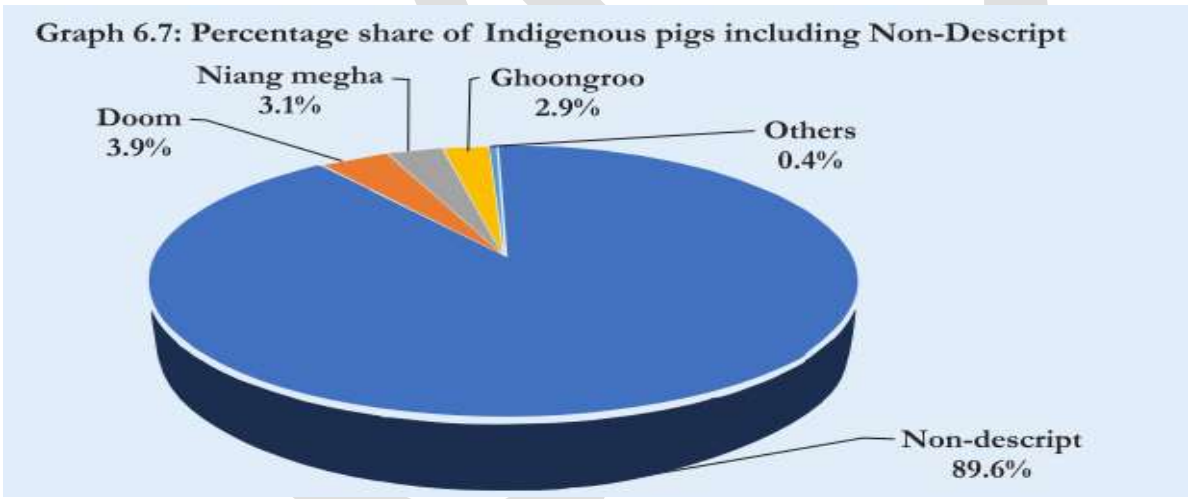


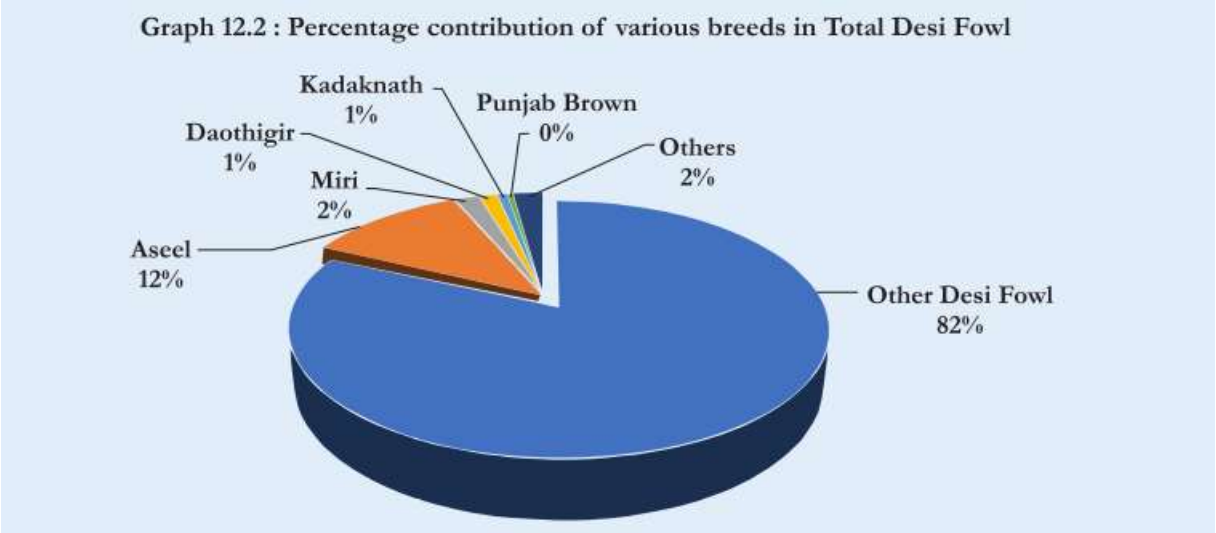
Others

- **CHABRO** - (Multi-coloured dual purpose bird)
- **CHABROWN** - (coloured prolific egg laying bird)
- **Aseel Cross** - (Pure desi bird dual type, Game bird)
- **CHANN** - (coloured dual purpose & heat resistant bird)
- **KADAKNATH (Kalamassi)** - (Pure desi bird, GI Tag Jhabua MP)
- **KALINGA BROWN** - Cross of White leghorn and RIR, Suitable for both backyard & intensive farming
- **KAVERI** - Egg type rural bird
  ** There is overlapping in some breeds for egg and meat
- Assam has highest TURKEY population
- As per 20th Livestock Census the Fowls contributes nearly 94.84% of the total Poultry Population

Maximum Population of Breed	**State**
Aseel	Tamil Nadu
Miri	Assam
Daothighir	Assam
Kadaknath	Maharashtra
Punjab Brown	Haryana
Desi Fowl	Andhra Pradesh
Improved Fowl	Tamil Nadu

Breed Name	Backyard Poultry	Poultry Farm	Total	Percentage share with respect to total (%)
Aseel	2,61,37,632	75,42,951	3,36,80,583	4.2
Miri	54,03,648	7,445	54,11,093	0.7
Daothigir	36,94,955	1,302	36,96,257	0.5
Kadaknath	15,99,417	4,38,058	20,37,475	0.3
Punjab Brown	1,68,859	11,96,941	13,65,800	0.2
Ankaleshwar	7,02,147	6,19,859	13,22,006	0.2
Chittagong	23,855	12,17,145	12,41,000	0.2
Busra	9,95,386	2,23,338	12,18,724	0.2
Ghagus	4,55,230	3,05,734	7,60,964	0.1
Kashmir Favorolla	5,97,619	7	5,97,626	0.1
Harringhata Black	4,54,979	781	4,55,760	0.1
Danki	1,07,648	60,684	1,68,332	-
Tellichery	1,47,438	1,267	1,48,705	-
Kaunayen	1,10,706	4,122	1,14,828	-
Mewari	1,10,041	4,583	1,14,624	-
Hasli	85,733	5,652	91,385	-
Kalahasthi	11,736	38,000	49,736	-
Nicobari	25,641	974	26,615	-





6 Systems of livestock Production

Extensive	Requires extensive land
Semi Intensive	Few months grazing
Intensive	Total confinement to shed

7 Breed-wise Report of Livestock and Poultry

The major highlights of Breed-wise Report of Livestock and Poultry are summarized below:

- The report has covered 184 recognized indigenous/exotic & crossbred breeds of 19 selected species that are registered by the **NBAGR (National Bureau of Animal Genetic Resources).**
- There are 41 recognized indigenous whereas 4 exotic/crossbred breeds of cattle covered in this report.
- As per the report, the Exotic and Crossbred animal contribute nearly **26.5% of the total cattle population whereas 73.5% are Indigenous and Non-descript cattle.**
- **Crossbred Jersey has the highest share with 49.3% as compared to 39.3% of Crossbred Holstein Friesian (HF) in total Exotic/Crossbred cattle**.
- **Gir, Lakhimi and Sahiwal** breeds have major contribution in total Indigenous Cattle.
- In Buffalo, the **Murrah** breed majorly contributes with 42.8% which is commonly found in UP and Rajasthan.
- In Sheep, there are 3 exotics and 26 indigenous breeds were found in the country. Among the pure exotic breeds, **Corriedale breed** majorly contributes with 17.3% and in the indigenous breeds the Nellore breed contribute the highest in the category with 20.0% share.

- In Goats, there are 28 indigenous breeds found in the country. The **Black Bengal** breed contributes the highest with 18.6%.
- In exotic/crossbred pigs, crossbred pig contributes 86.6% whereas Yorkshire contributes majorly with 8.4%. In indigenous pigs, Doom breed major contributes with 3.9%.
- In Horse & Ponies, the share of **Marwari breed** majorly contributes with 9.8%.
- In Donkeys, the share of **Spiti breed** contributes with 8.3%.
- In Camel, **Bikaneri** breed majorly contributes with 29.6%.
- In Poultry, desi fowl, Aseel breed majorly contribute in both backyard poultry and commercial poultry farm.
- Maximum population of MITHUN is in Arunahal Pradesh & Yak J n K

8 Schemes in Animal Husbandry

8.1 Rashtriya Gokul Mission

- It is being implemented for **development and conservation of indigenous bovine breeds** since December 2014.
- The scheme is also continued under umbrella scheme Rashtriya Pashudhan Vikas Yojna **from 2021 to 2026** with a budget outlay of Rs.**2400 crore**.

Significance:

- The RGM will result in enhanced productivity and benefit of the programme, percolating to all cattle and buffaloes of India especially with small and marginal farmers.
- This programme will also benefit women in particular since over 70% of the work involved in livestock farming is undertaken by women.

Components:

- Availability of High genetic Merit Germplasm
- Extension of Artificial Insemination Network
- Development and Conservation of indigenous Breeds
- Skill Development
- Farmers Awareness
- Research Development and Innovation in Bovine Breeding

Implementing Agency:

- Rashtriya Gokul Mission will be implemented through the "State Implementing Agency (SIA viz Livestock Development Boards).

Significant Initiatives:

Gopal Ratna Awards:

- For farmers **maintaining the best herd of Indigenous Breed and practicing best management practices.**
- National Gopal Ratna Award is one of the highest National Awards in the field of livestock and dairy sector. Awards are conferred in three categories, namely

- Under RGM, with an objective to encourage the Milk producing farmer, individuals working in this sector, and Dairy cooperative societies who provide market access to the milk producers, this department has continued to confer National Gopal Ratna Award during 2022 in the following categories:
  - **(i) Best Dairy farmer rearing indigenous cattle/buffalo breeds**
  - **(ii) Best Artificial Insemination Technician (AIT)**
  - **(iii) Best Dairy Cooperative Society/ Milk producer Company/ Dairy Farmer Producer Organisation**
- The National Gopal Ratna Award consists of a Certificate of merit, a memento, and amount in each category as under:

i. Rs. 5,00,000/-(Rupee five lakh only) -1st rank
ii. Rs. 3,00,000/- (Rupee three lakh only) -2nd rank and
iii. Rs. 2,00,000/- (Rupee two lakh only) -3rd rank

- 3 best dairy farmers, 3 best AI technicians and 3 best dairy cooperatives in the country were felicitated on the eve of National Milk Day on **26th November 2022 at Bengaluru**.

Induction of MAITRIs

Kamdhenu Awards:

- For best-managed Indigenous herd by Institutions/Trusts/ NGOs/ Gaushalas or best-managed Breeders' societies.

Gokul Grams:

RGM envisages the establishment of integrated cattle development centers, 'Gokul Grams' to develop indigenous breeds including up to 40% nondescript breeds (belonging or appearing to belong to no particular class or kind) with objectives to:

- Promote indigenous cattle rearing and conservation in a scientific manner.
- Propagate high genetic merit bulls of indigenous breeds.
- Optimize modern Farm Management practices and promote Common Resource Management.
- Utilize animal waste in an economical way i.e., Cow Dung, Cow Urine.
- Recently, funds have been released for setting up of 16 Gokul Grams.

National Kamdhenu Breeding Centre (NKBC):

- It is being established as a Centre of Excellence to develop and conserve Indigenous Breeds in a holistic and scientific manner.

E-Pashu Haat:

- It is a web portal which provides information on pet cattle, trading of bovine animals that were not offered on any other platform in the country.

Nakul Prajnan Bazaar:

- An e-market portal connecting breeders and farmers, for quality- disease-free bovine germplasm.

Pashu Sanjivni:

- An animal wellness program encompassing the provision of animal health cards ('Nakul Swasthya Patra') along with unique identification and uploading data on National Database.

Advanced Reproductive Technology (ART):

- **Including Assisted Reproductive Technique- IVF/Multiple Ovulation Embryo Transfer (MOET)** and sex-sorted semen technique to improve the availability of disease-free female bovines.
- IVF is important tool for genetic upgradation of bovine population at rapid rate, work which is done in **7 generations (21 years in case of cattle and buffaloes) can be done in 1 generation (3 years in case of cattle and buffalo) through IVF.** The technology has huge potential in enhancing farmers' income through production of only female calves with genetic potential of producing 4000 kg of milk per lactation thus increasing farmers income by manifold.
- **Nationwide AI Programme has been initiated in September 2019** and under the programme AI services delivered free of cost at farmers' doorstep. Nationwide Artificial Insemination Programme (NAIP) Phase-IV has been initiated from 1st August 2022 covering 3.3 crores animals through artificial insemination in 604 districts with less than 50% AI coverage. As on 2nd December 2022, 4.20 crore animals have been covered, 5.19 core artificial inseminations performed, and 2.78 crore farmers benefitted under NAIP.
- **Accelerated Breed Improvement Programme using sex sorted semen is implemented to produce female calves with 90% accuracy**. Farmers taking AI with sex sorted semen are incentivized @ Rs 750 per pregnancy and balance amount will be met by the farmer taking up pregnancy through sex sorted semen

National Bovine Genomic Center for Indigenous Breeds (NBGC-IB):

- It will be established for selection of breeding bulls of high genetic merit at a young age using highly precise gene-based technology.
- Genetic upgradation using advanced reproductive technologies

National Digital Livestock Mission (NDLM)

- The Department of Animal Husbandry & Dairying, Government of India has taken up a digital mission, "National Digital Livestock Mission" (NDLM) with NDDB. **This will help in improving the productivity of the animals, control diseases that affect both animals and humans, ensure quality livestock both for domestic and export markets.**
- NDLM is about formation of an integrated ecosystem for the livestock sector. It was conceptualized by Department of Animal Husbandry & Dairying, with the guidance of the office of PSA to the PM.

Breed Multiplication Farms

- Breed Multiplication Farm component has been initiated to attract entrepreneurship for the dairy sector, and to simultaneously create the opportunity for developing a hub and spoke model of dairy farming where small and marginal dairy farmers can thrive with the help of a local hub of reliable dairy services.
- **Subsidy of 50% (up to Rs 2 crores per farm)** on capital cost (excluding land cost) is proposed to be provided to private entrepreneurs under this scheme for establishment of breed multiplication farms of minimum herd size of 200 heads of bovines in the country except for hilly states and north eastern states where the number is 50. Further, for bank loan the entrepreneur can get an interest subvention of 3% by integrating with the AHIDF Scheme. As on 2nd December 2022 the Department has supported for establishment of 28 Breed Multiplication Farm.

Animal Husbandry Startup Grand Challenge 2.0

- In order to scout for innovative and commercially viable solutions to address the problems faced by the animal husbandry and dairy sector Problem Statements have been prepared by the Department for organizing Animal Husbandry Startup Grand Challenge 2.0 during 2021-22. The startup grand

challenge was launched by FAHD Minister on 26th November 2021 and last date for submission of applications by startups was 31 Jan 2022.

- Grand start-up Conclave on 28th February, 2023 **in Hyderabad**

8.2 NATIONAL PROGRAMME FOR DAIRY DEVELOPMENT

The Department of Animal Husbandry and Dairying is implementing "National Programme for Dairy Development" (NPDD) across the country since **February 2014** with an **objective of creating/ strengthening of infrastructure for production of quality milk, Procurement, Processing and Marketing of Milk & Milk Products by the State Implementing Agency (SIA).**

Now, the scheme has slightly been restructured **from 2021-22 to 2025-26.**The NPDD scheme aims to enhance quality of milk and milk products and increase share of organized milk procurement. The scheme has two components:

Component 'A' focuses towards **creating/strengthening of infrastructure for quality milk testing equipment as well as primary chilling facilities for State Cooperative Dairy Federations/ District Cooperative Milk Producers' Union/SHG run private dairy/Milk Producer Companies/Farmer Producer Organisations.** The scheme will be implemented across the country for the period of five year from 2021-22 to 2025-26.

Component B - Dairying through Cooperatives" aims at increasing sales of milk and dairy products by increasing farmer's access to organised market, upgrading dairy processing facilities, marketing infrastructure and enhancing the capacity of producer owned institutions thereby contributing to increase in return to milk producers in the project area. The sub-scheme has an outlay of Rs.1568.28 crore including loan component of Rs.924.56 crore (JPY 14,978 million by Japan International Cooperation Agency (JICA)), central grant share of Rs 475.54 crore and participating Institutes' (PI) share of Rs.168.8 crore for the period of 5 years from 2021-22 to 2025-26. Eligible States are Uttar Pradesh, Bihar, West Bengal, Madhya Pradesh, Punjab, Andhra Pradesh, Telangana, Rajasthan, and Uttarakhand. The sub-scheme is implemented by this Department through NDDB. Department of Animal Husbandry and Dairying provides loan assistance to the Eligible Participating Institutions namely, Milk Unions, Milk Producer Companies, State Milk Federations, Multi-State Milk Cooperatives at a subsidized rate of 1.5% p.a. through NDDB (Implementing Agency) subject to norms of the scheme.

8.3 DAIRY PROCESSING & INFRASTRUCTURE DEVELOPMENT FUND (DIDF)

DIDF was launched by DAHD in December 2017 with the objective to create/ modernize the milk processing, chilling and value addition infrastructure towards components Milk processing, Chilling and Value added Products facilities, etc. for the Dairy Co-operative, Multi State Dairy Cooperative, Milk Producer Companies (MPC), NDDBs subsidiaries. Under this scheme 2.5% interest subvention loan from National Bank for Agriculture and Rural Development (NABARD) through NDDB/NCDC. **Under DIDF, Funding Period is 2018-19 to 2022-23 and repayment period is upto 2030-31 with spill over to first quarter of the FY 2031-32.**

8.4 SUPPORTING DAIRY COOPERATIVES AND FARMER PRODUCER ORGANIZATIONS ENGAGED IN DAIRY ACTIVITIES

The Scheme was launched during 2017-18. The scheme is being implemented through **National Dairy Development Board (NDDB).**

Main objective of the scheme is to assist the Cooperative Societies and farmer producer organizations engaged in dairy activities by **providing soft working capital loan to tide over the crisis on account of severely adverse market conditions or natural calamities**. Due to Economic Impact of Covid-19 on Dairy Sector, Ministry of Fisheries, Animal Husbandry and Dairying has introduced a new component "**interest subvention on Working capital loans for Dairy sector" as one of the component with an outlay of Rs 203 Cr for 2020-21.** Under the scheme, an interest subvention of 2% per annum on the working capital loan is being provided to the producer owned Institutes (POIs.). Further, for prompt and timely repayment, an additional 2% per annum interest subvention is payable at the end of the loan repayment/interest servicing period. Thus the actual implementation of scheme started during 2020-21.Temporarily, the other component namely "working Capital loan" was kept in suspension since 2020-21. The Union Cabinet has approved implementation of central sector scheme **Supporting Dairy Cooperatives and Farmer Producer Organizations engaged in dairy activities (SDCFPO)** as a part of Umbrella Scheme " **Infrastructure Development Fund " from 2021-22 to 2025-26 with an outlay of Rs 500 Cr.The Scheme has been implemented with budgetary allocation of Rs 100 Cr during 2022-23.**

8.5 NATIONAL LIVESTOCK MISSION

For sustainable and continuous growth of livestock sector by emulating the success achieved in dairy and poultry sectors, across species and regions, the National Livestock Mission (NLM) was launched in 2014-15. This Mission was formulated with the objectives of sustainable development of livestock sector, focusing on improving availability of quality feed and fodder, risk coverage, effective extension, improved flow of credit and organization of livestock farmers / rearers, etc.

Recently, National Livestock Mission has been **revised and realigned with an outlay of Rs.2300 crore for the five years i.e. starting from 2021-22.** The re-aligned scheme has been approved by the Cabinet on **14.07.2021. The focus of the scheme is towards employment generation, entrepreneurship development; increase in per animal productivity and thus targeting increased production of meat, goat milk, egg and wool under the umbrella scheme Development Programme.** The excess production will help in the export earnings after meeting the domestic demands. The **concept of NLM Scheme is to develop the entrepreneur in order to create the forward and backward linkage for the produce available at the unorganized sector and to link with the organized sector.**
The scheme is implemented with the following three Sub-Missions:

1. **Sub-Mission on Breed Development of Livestock & Poultry:** Proposes to bring sharp focus on entrepreneurship development and breed improvement in poultry, sheep, goat and piggery by providing the incentivization to the individual, FPOs, SHGs, Section 8 companies for entrepreneurship development and also to the State Government for breed improvement infrastructure.
2. **Sub-Mission on Feed and Fodder development**: This Sub-Mission aims towards strengthening of fodder seed chain to improve availability of certified fodder seed required for fodder production and encouraging entrepreneurs for establishment of fodder Block/Hey Bailing/Silage Making Units through incentivisation.
3. **Sub-Mission on Extension and Innovation:** The sub-mission aims to incentivize the Institutes, Universities, Organizations carring out research and development related to sheep, goat, pig and feed and fodder sector, extension activities, livestock insurance and innovation.

Under National Livestock Mission, for the first time, the Central Government is providing direct 50% subsidies to the Individuals, SHGs, JLGs, FPOs, Section 8 Companies, FCOs to establish Poultry Farms with Hatcheries and brooder mother units, sheep and goat breed multiplication farm, piggery farm and feed and fodder units. The subsidy units for these activities are as under:

1. Poultry farms activities: up to Rs. 25 lakh
2. Sheep and Goat breed multiplication farm: Rs.50 lakh
3. Piggery breed multiplication farm: Rs.30 Lakh
4. Feed and Fodder Unit: Rs. 50 lakh.

8.6 AHIDF

Under AtmaNirbhar Bharat Abhiyan stimulus package, Animal Husbandry Infrastructure Development Fund (AHIDF) was set-up with the corpus of Rs. 15000 crore. The Animal Husbandry Infrastructure Development (AHIDF) has been approved for incentivizing investments by **individual entrepreneurs, private companies, MSME, Farmers Producers Organizations (FPOs) and Section 8 companies to establish** (i) the dairy processing and value addition infrastructure, (ii) meat processing and value addition infrastructure and (iii) Animal Feed Plant.(iv) Breed improvement Technology and Breed Multiplications farms for Cattle/ Buffalo/Sheep/Goat/ Pig and technogically assisted Poultry farms.

The objectives of the scheme are to help increasing of milk and meat processing capacity and product diversification thereby providing greater access for unorganized rural milk and meat producers to organized milk and meat market, price realization for the producer, availability of quality milk and meat products for the domestic consumer,

generating entrepreneurs, promoting exports, quality and cheap animal feeds and to availability of quality protein rich food to the Indian consumer.

Farmer Producer Organization(FPO), Private companies, Individual entrepreneurs, Section 8 companies, Micro Small and Medium Enterprises are the eligible entities who would take benefit under the scheme. The Animal Husbandry Infrastructure Fund will be implemented by the Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying. The Central Government is providing 3% interest subvention. The Central Government has also set up Credit Guarantee Fund to provide credit guarantee of 25% of the borrowing to those projects which are covered under MSME definition. The interest subvention will be provided to the beneficiaries over a period of 8 years maximum up to 10 years of repayment period provided the beneficiaries are not defaulter. A portal has been developed for online submission of applications at the portal ahidf.udyamimitra.in developed by SIDBI

The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the continuation of Animal Husbandry Infrastructure Development Fund (AHIDF) to be implemented under Infrastructure Development Fund (IDF) with an outlay of Rs.29,610.25 crore for another three years up to 2025-26. The scheme will incentivize investments for Dairy processing and product diversification, Meat processing and product diversification, Animal Feed Plant, Breed multiplication farm, Animal Waste to Wealth Management (Agri-waste management) and Veterinary vaccine and drug production facilities.

Government of India will provide 3% interest subvention for 8 years including two years of moratorium for loan up to 90% from the scheduled bank and National Cooperative Development Corporation (NCDC), NABARD and NDDB. The eligible entities are individuals, Private Companies, FPO, MSME, Section 8 companies. Now the Dairy Cooperatives will also avail benefits for modernization, strengthening of the dairy plants.

Government of India will also provide credit guarantee to the MSME and Dairy Cooperatives up to the 25% of the credit borrowed from the Credit Guarantee Fund of Rs.750 crore.

Feature	Facts
Budget	• Animal Husbandry Infrastructure Development Fund (AHIDF) worth **Rs. 15,000 crores**
Capacity	• India is producing milk of 188 million tonnes and by 2024 the milk production is expected to rise up to 330 million tons. Only 20-25% milk is coming under processing sector and Government is trying to bring the same upto 40%.

DIDF	• Dairy Processing Infrastructure Development Fund (DIDF) is being implemented for infrastructure development **in cooperative sector** and AHIDF is a first type of scheme for private sector.
Who?	• Farmer Producer Organizations (FPOs), MSMEs, Section 8 Companies, Private Companies and individual entrepreneurs with minimum **10% margin money** contribution by them
Repayment	• The balance 90% would be the loan component to be made available by scheduled banks.There will be 2 years moratorium period for principal loan amount and 6 years repayment period thereafter.
Subvention	• Government of India will provide **3% interest subvention** to eligible beneficiaries
CGF	• Government of India would also set up **Credit Guarantee Fund of Rs. 750 crore** to be managed by **NABARD**. Credit guarantee would be provided to those sanctioned projects which are covered under MSME defined ceilings. Guarantee Coverage would be upto 25% of Credit facility of borrower.
Udyami Mitra	• The beneficiaries intending to invest for establishing dairy and meat processing and value addition infrastructure or strengthening of the existing infrastructure can apply for loan in the scheduled bank through **"Udyami Mitra" portal of SIDBI.**

9 Points to remember

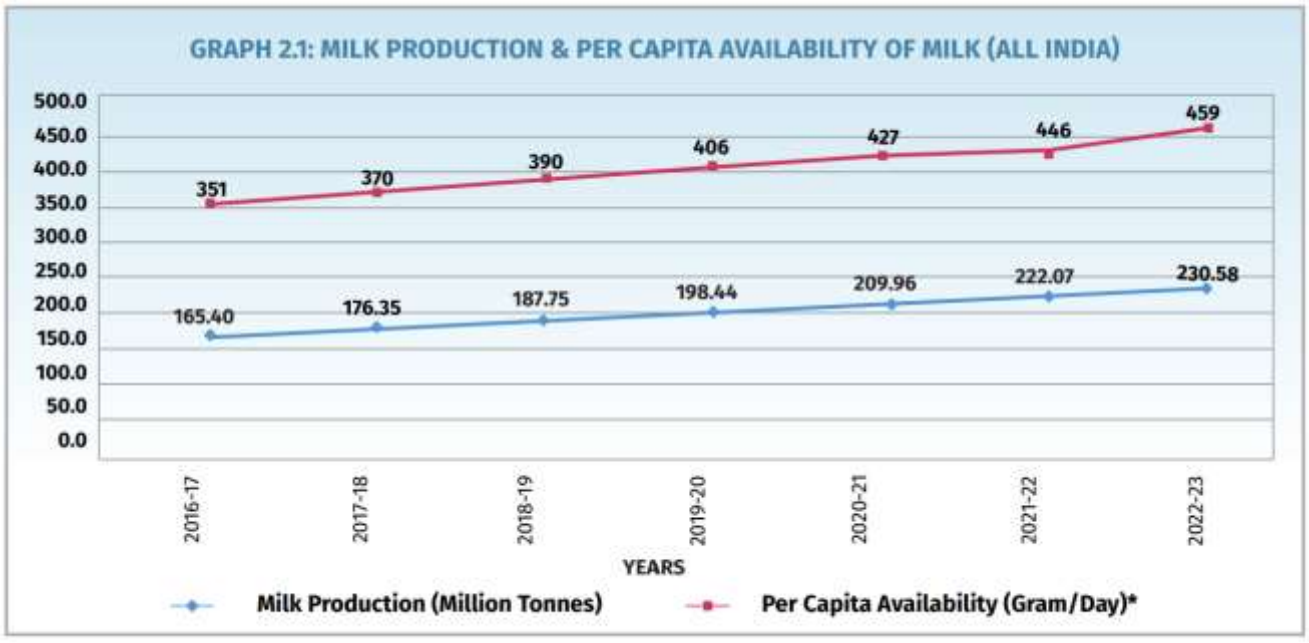
- **Nationwide Artificial Insemination Programme (NAIP) Phase-IV** has been initiated from 1st August 2022 covering 3.3 crores animals through artificial insemination in 604 districts with less than 50% AI coverage.
- Subsidy of 50% (up to Rs 2 crores per farm) on capital cost (excluding land cost) is proposed to be provided to private entrepreneurs for establishment of breed multiplication farms of minimum herd size of 200 heads of bovines in the country.
- 3 best dairy farmers, 3 best AI technicians and 3 best dairy cooperatives in the country were felicitated with National Gopala Ratna Awards on the eve of National Milk Day on 26th November 2022 .
- **Online portal for High Genetic Merit (HGM) Bull** distribution has been launched during the year 2022.
- **For the first time in the world, whole genome sequencing and genomic chip for DNA based selection of buffalos has been developed with funding under Rashtriya Gokul Mission.** This has led to 2.5% higher genetic gain among buffalo population in a sustainable manner.

- Joint Declaration of intent has been signed between Ministry of Fisheries Animal Husbandry and Dairying, Government of India and Ministry of Food, Agriculture and Fisheries, Kingdom of Denmark for cooperation in the field of Animal Husbandry & Dairying on 2nd May 2022 in Copenhagen Denmark.
- International Dairy Federation World Dairy Summit (IDF WDS), 2022 organized at India Expo Centre & Mart, **Greater Noida, 2023 in Chicago USA, 2024 Paris**
- World Milk Day on **1st June 2022**

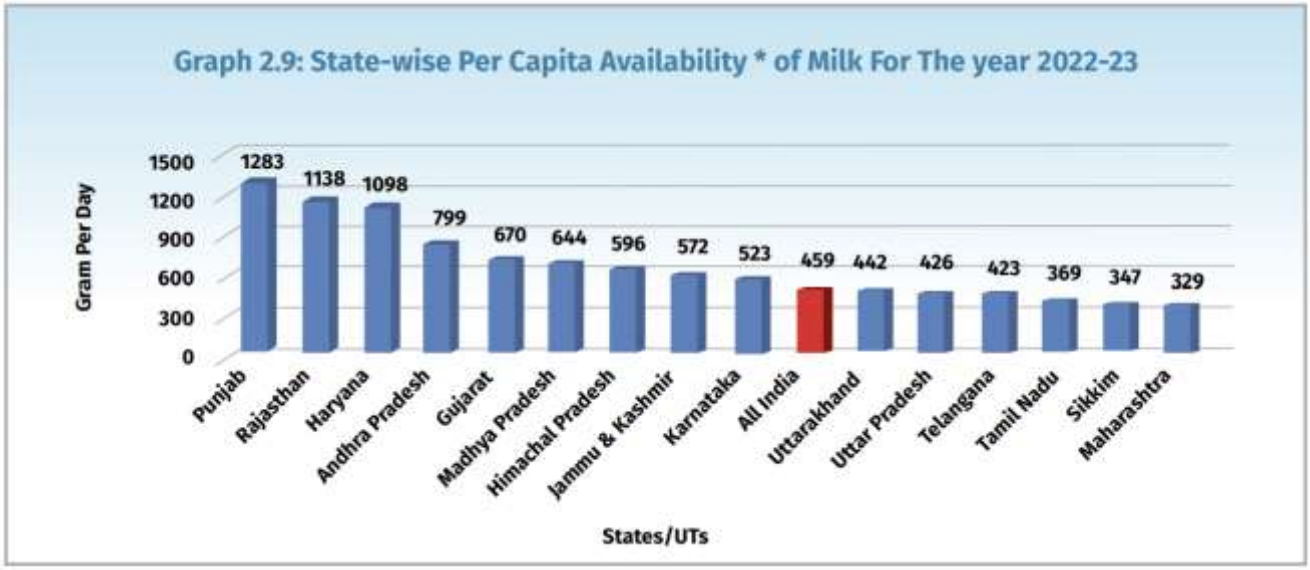
10 Basic Animal Husbandry Statistics

The major highlights of "Basic Animal Husbandry statistics 2022" are given below:

- Total milk production in the country is 230.58 million tonnes during 2022-23.
- India ranks 1st in the world in terms of total milk production. (Source: FAO).
- The milk production has increased **by 3.83%** over the previous year (2021-22).
- The per-capita availably of milk is **459 grams per day.**
- The average yield per animal per day for exotic/crossbred is **8.55 Kg/day/Animal** and for indigenous/non-descript is **3.44 Kg/day/ Animal.**
- The milk production from exotic/crossbred cattle has increased by **3.75%** and indigenous/ non-descript cattle has increased by **2.63% as** compared to previous year. The milk production from buffaloes also increased by 3.69% as compared to previous year.



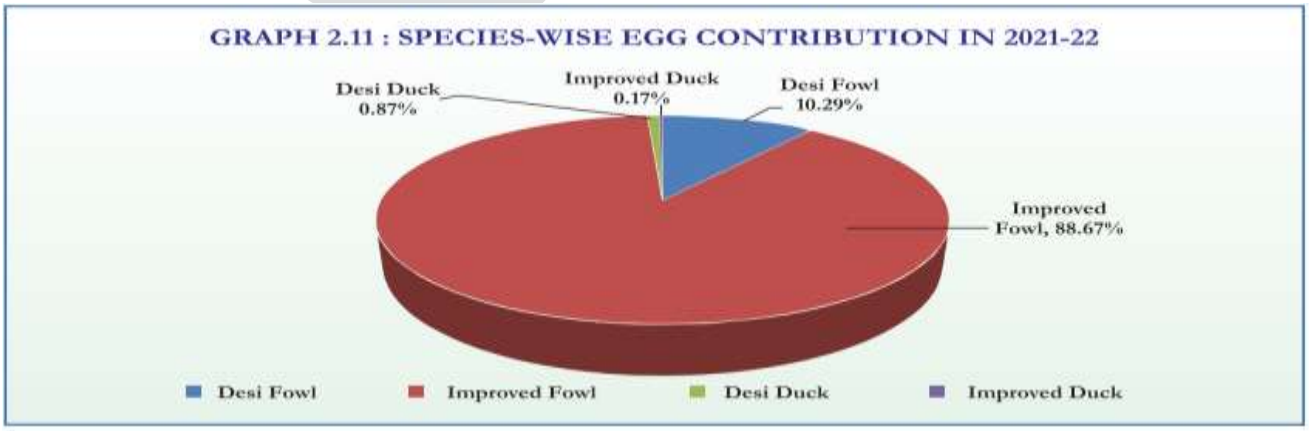
*Based on Projected Human Population according to Population Census-2011



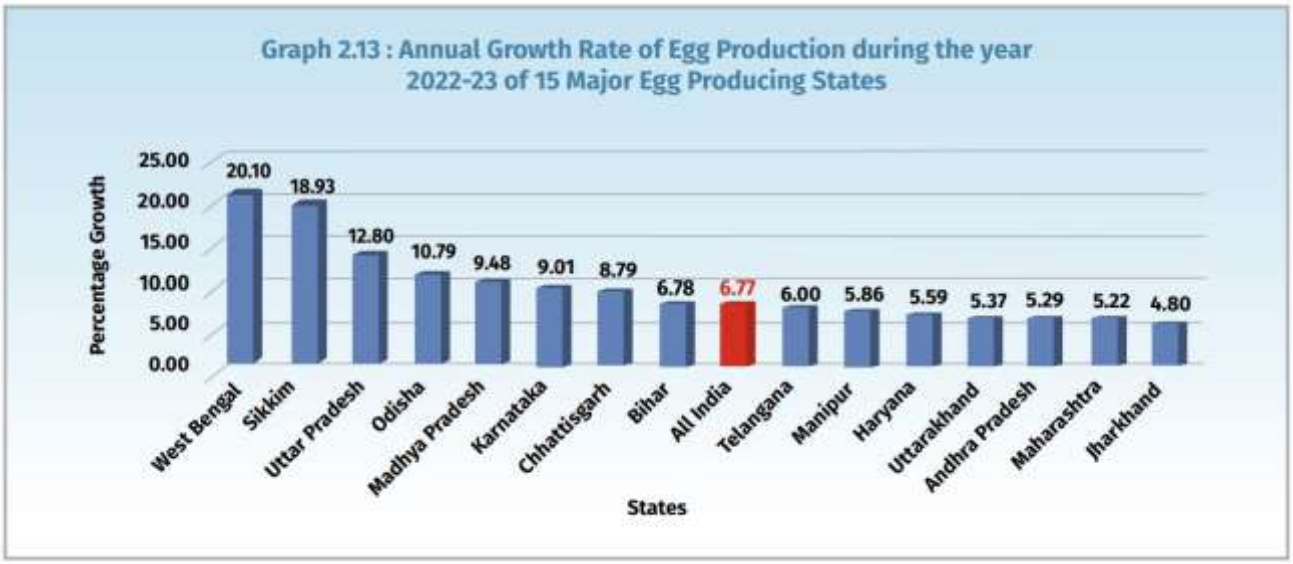
- Top 5 Milk producing States are: **Uttar Pradesh (15.72%), Rajasthan (14.44%),** Madhya Pradesh (8.73%), Gujarat (7.49%), Andhra Pradesh (6.70%). They together contribute 53.08% of total Milk production in the country.

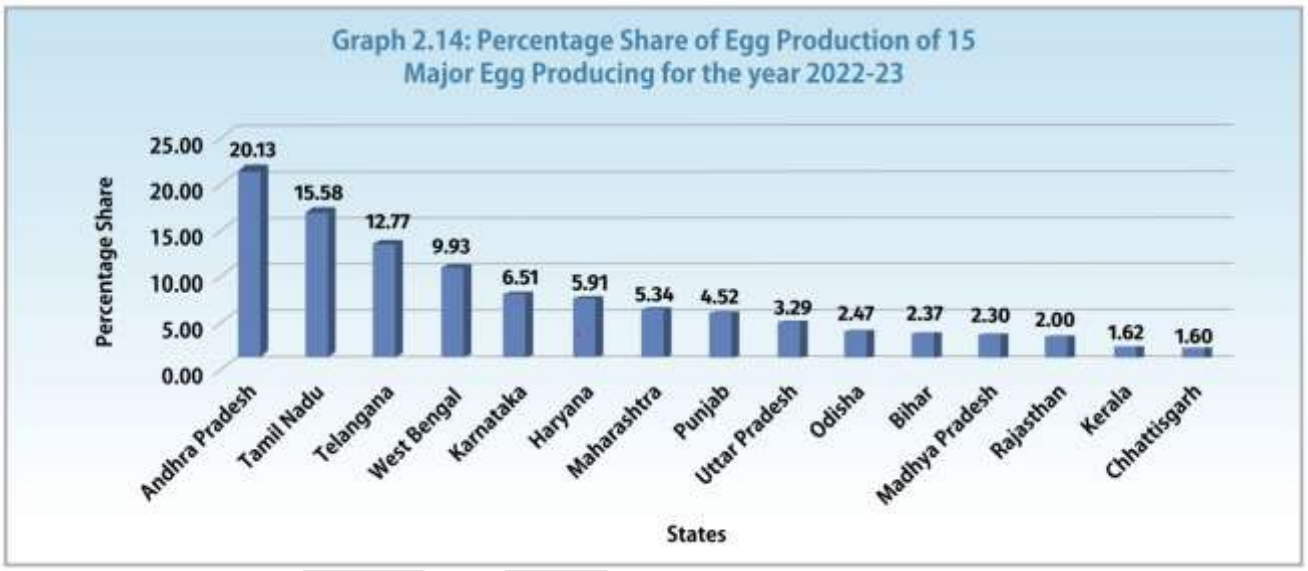
Highlight of Egg Production

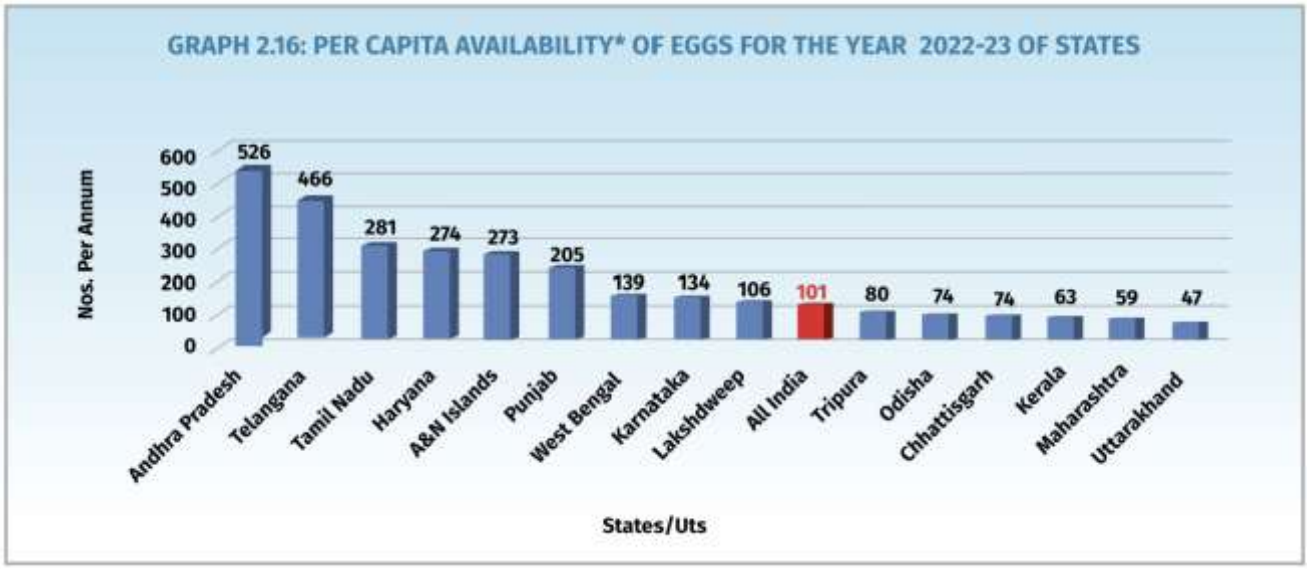
- The total egg production in the country is 138.38 billion numbers during 2022-23.
- India ranks 3rd in the world in terms of total Egg production (Source: FAO).
- The egg production has increased by 6.77% as compared to previous year (2021-22).
- The per-capita availability of egg is 101 eggs per annum.
- Top 5 egg producing States are Andhra Pradesh (20.13%), Tamil Nadu (15.58%), Telangana (12.77%), West Bengal (9.93%) and Karnataka (6.51%) They together contribute 64.93% of total egg production in the country
- The total egg production from commercial poultry is 118.16 billion numbers and backyard poultry are 20.20 billion numbers contributing 85.40% and 14.60% of total production of egg respectively.
- The per capita availability reached at 101 eggs per annum in the year 2022-23, a Six-point jump from 95 eggs per annum of the previous year 2021-22.



- The Annual Growth Rate for egg production the year 2022-23 is registered as 6.77%. West Bengal has highest growth rate for egg production (20%) followed by Sikkim

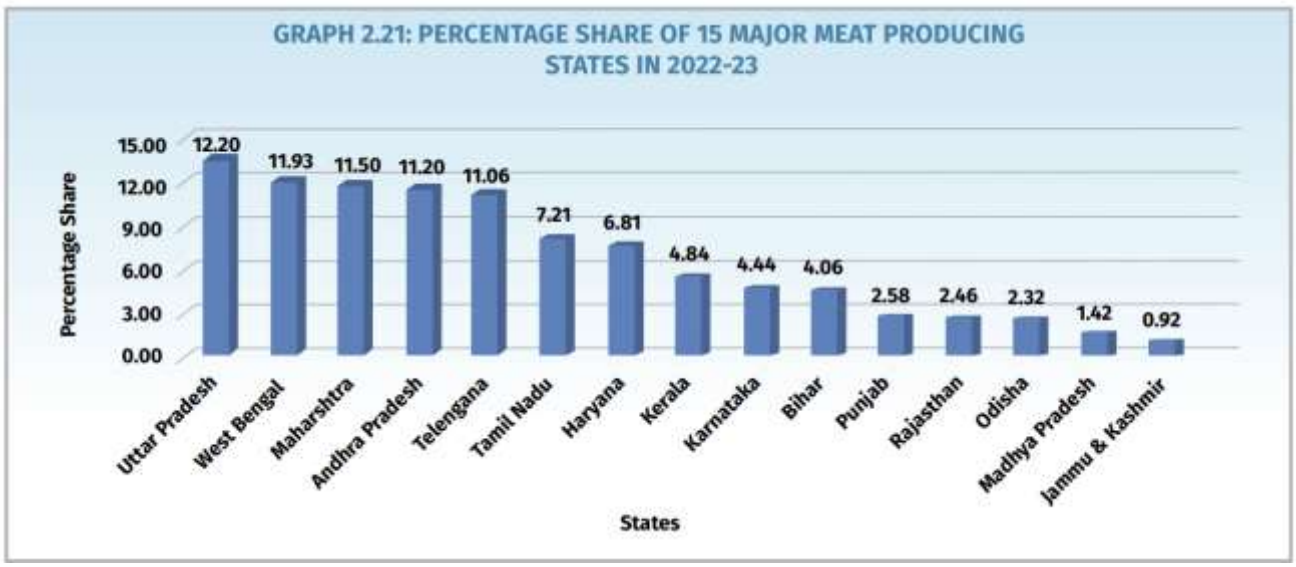




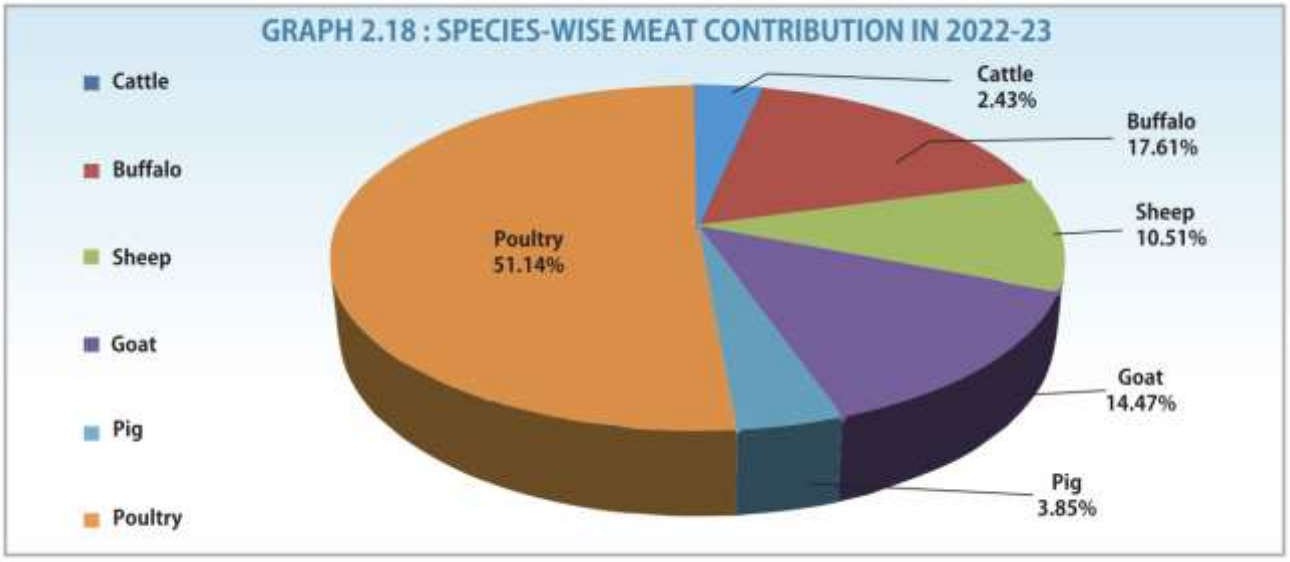


Highlight of Meat Production

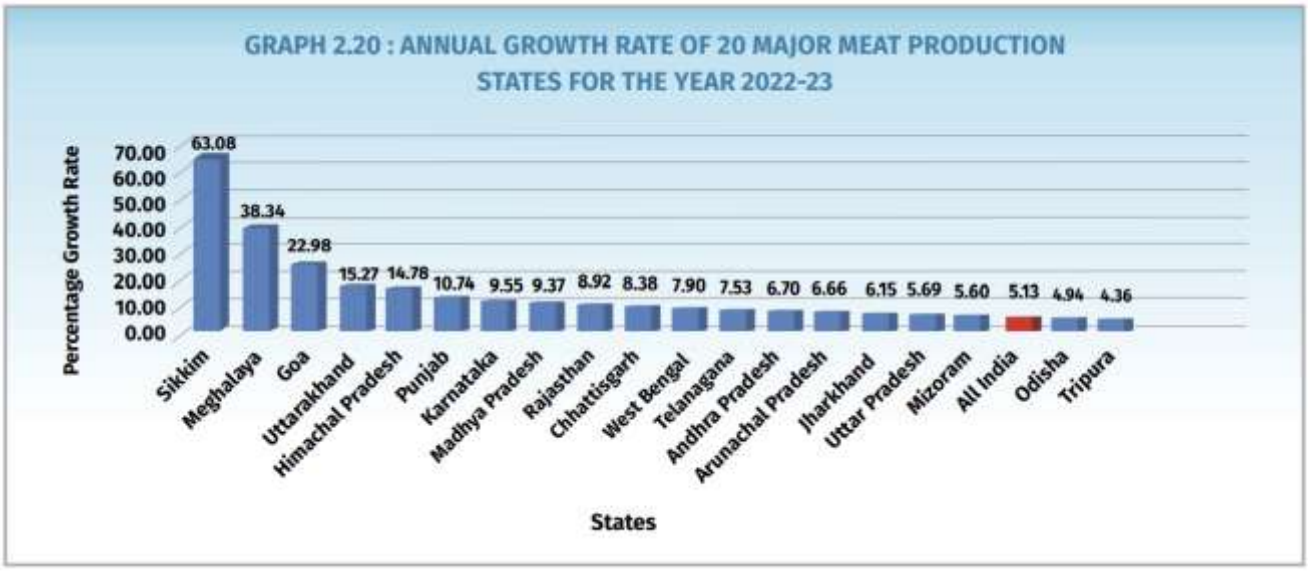
- The total meat production in the country is 9.77 million tonnes during 2022-23.
- India ranks 8th in the world in terms of total Meat production (Source: FAO).
- The meat production has increased by 5.13% as compared to previous year (2021-22).
- The meat production from poultry is 4.995 million tonnes, contributing about 51.14% of total meat production. The growth of poultry meat production has increased by 4.52% over previous year.
- The top 5 meat producing States are Uttar Pradesh (12.20%), West Bengal (11.93%), Maharashtra (11.50%), Andhra Pradesh (11.20%) and Telangana (11.06%). They together contribute 57.90% of total meat production in the country.
- The per capita availability reached at 7.10 Kg/Annum the year 2022-23, a 0.28-point jump from 6.82 Kg/Annum of the previous year 2021-22.



- Species wise contribution



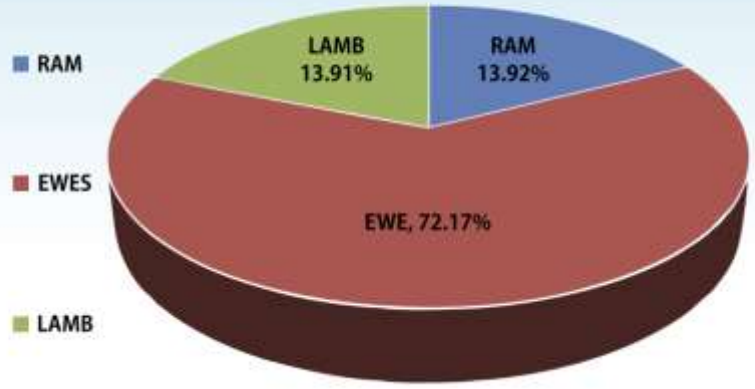
- The annual growth rate of Meat Production is 5.13%
- State wise growth of Meat Production



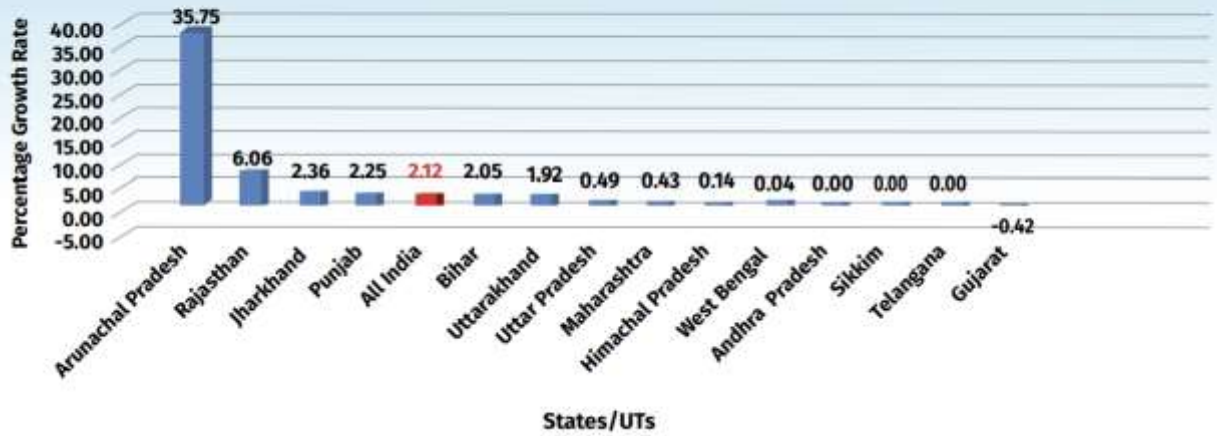
Wool Production Highlights

- The total wool production in the country is 33.61 million Kgs
- The top 5 wool producing States are Rajasthan (47.98%), Jammu & Kashmir (22.55%), Gujarat (6.01%), Maharashtra (4.73%) and Himachal Pradesh (4.27%). They contribute 85.54% of total wool production in the country

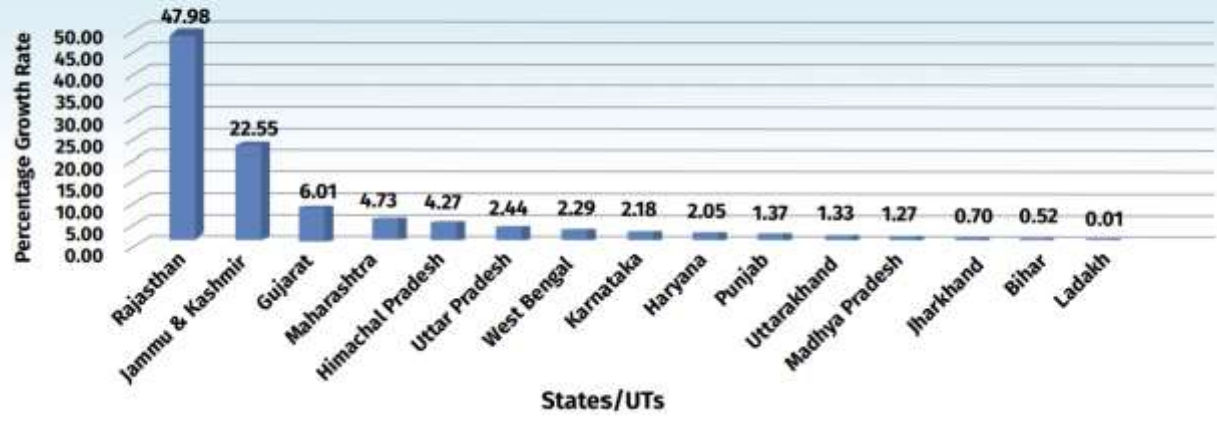
GRAPH 2.24 SPECIES-WISE SHARE IN WOOL PRODUCTION IN 2022-23



GRAPH 2.26: ANNUAL GROWTH RATE OF 15 MAJOR WOOL PRODUCING STATES IN 2022-23



GRAPH 2.27: PERCENTAGE SHARE OF WOOL PRODUCTION IN 15 SELECTED STATES DURING 2022-23



- The per-capita availability of milk is **444 gram/day** during 2021-22 increased by 17 gram/day over previous year.

- Per Capita availability of meat is 6.82 kg/annuam during 2021-22 increased by 0.30 kg/annuam over previous year.

- During 2014-15 and 2020-21, the value addition of sector grew at a compound annual growth rate of 7.93%.
- In 2020-21, the share of Livestock at constant prices in Agriculture Sector and total GVA was 30.13% and 4.9% respectively.

11 Schemes of Ministry

The Ministry of Fisheries, Animal Husbandry and Dairying, Government of India presently implementing the following schemes and programme in all States/ UTs including Gujarat for development of Fisheries, Animal Husbandry and Dairy Sectors:

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY),**
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF),**
- **Rashtriya Gokul Mission (RGM),**
- **National Livestock Mission (NLM),**
- **National Programme for Dairy Development (NPDD),**
- **Dairy Processing and Infrastructure Development Fund (DIDF),**
- **Supporting Dairy Cooperatives and Farmer Producer Organizations (SDCFPO),**
- **Entrepreneurship Development and Employment Generation (EDEG),**
- **Livestock Health and Disease Control Programme (LHDCP),**
- **Animal Husbandry Infrastructure Development Fund (AHIDF).**

NEXT – PART IX

Animal Husbandry Part II

Introduction to common feeds and fodders, their classification and utility. Housing, Milking, Dehorning, Techno commercial parameters and NABARD Model Projects