Annexure 5.1: State-wise Productivity Indicators in Milk Production in India, 2022–23

States/UTs	Average Milk per Animal (tonnes per animal)	Average Milk (tonnes) per worker
A&N Islands	1.7	6.2
Andhra Pradesh	2.8	24.4
Arunachal Pradesh	0.6	38.7
Assam	0.6	4.6
Bihar	1.6	5.4
Chandigarh	4.2	N.A.
Chhattisgarh	1.1	21.8
Daman & Diu and D&N Haveli	1.9	N.A.
Delhi	3.2	115.1
Goa	2.4	29.2
Gujarat	2.2	5.6
Haryana	3.7	27.5
Himachal Pradesh	1.6	3.9
Jammu & Kashmir	2.3	3.1
Jharkhand	1.0	13.3
Karnataka	2.3	20.0
Kerala	3.8	5.3
Ladakh	N.A.	N.A.
Lakshadweep	1.2	N.A.
Madhya Pradesh	1.6	13.3
Maharashtra	2.3	11.5
Manipur	1.0	29.0
Meghalaya	0.6	7.3
Mizoram	2.2	20.2
Nagaland	1.7	31.5
Odisha	1.1	4.7
Puducherry	2.1	1.6
Punjab	3.9	19.1
Rajasthan	2.4	22.3
Sikkim	1.9	16.0
Tamil Nadu	2.4	6.0
Telangana	2.0	71.9
Tripura	1.0	22.2
Uttar Pradesh	1.9	5.0
Uttarakhand	1.8	22.7
West Bengal	1.4	6.1
All India	2.1	9.1

Sources: Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying. 2023. Basic Animal Husbandry Statistics-2023. https://dahd.nic.in/sites/default/filess/BAHS2023.pdf. Krishi Bhawan, New Delhi and NCAER Analysis from PLFS 2022–23.

Annexure 5.2: Indicators of Dairy Producing Clusters

Pillars	*Sub-Pillars*	*Indicators*	*Source of data*	*State-wise data available (Yes/No)*	*District-wise data available (Yes/No)*
Institutional	Social Capital	Affiliated Dairy Cooperative Societies (DCS)	National Cooperative Database, Ministry of Cooperation, Government of India, 2023 Link	Yes	Yes
	Network & Partnership	FPOs	MCA data but not publicly available	MCA data but not publicly available	MCA data but not publicly available
		Membership of Dairy Cooperatives	National Cooperative Database, Ministry of Cooperation, Government of India, 2023 Link	Yes	Yes
		No. of private dairy farms	Secondary data not available	No	No
	Leadership and Vision	Dairy Federations	National Cooperative Database, Ministry of Cooperation, Government of India, 2023 Link	Yes	Not Applicable
	Entrepreneurship and Culture	Dairy Cooperative Brands	National Dairy Development Board (NDDB) database	Yes	Not Applicable
		Percentage of employers in the specific NIC code	PLFS	Yes	Yes, but not reliable
	Competition	No. of private dairy farms	No secondary data available	Not Available	Not Available
Business Infrastructure	Information Access	% of dairy farmers who are accessing technical advice	MoSPI: Situation Assessment Survey of Agricultural Households	Yes	Yes
	Market Access	Procurement volume of milk across India -% of dairy farm households who are selling to the market			
	Specialist Service	Artificial insemination centres	DHAD Annual Report 2019-20	Yes	No.
		No. of Artificial inseminations done	Basic Animal Husbandry Statistics	Yes	Infrequently available about the no. of artificial inseminations done
		Fodder farms	Basic Animal Husbandry Statistics	Yes	No
	Bulk Cooling Units	Bulk cooling units	Bimonthly Report on State Dairy Profile	Yes	No
		Liquid Milk Plants			
	Milk Processing Centre (No.)	Capacity of milk processed (Thousand Litres Per Day (TLPD))	Basic Animal Husbandry Statistics	Yes	No
	Financial Access	% of dairy farm households who have a bank account	MoSPI: Situation Assessment Survey Agricultural Households	Yes	Yes
		% of dairy farm households who have accessed institutional credit			

Pillars	*Sub-Pillars*	*Indicators*	*Source of data*	*State-wise data available (Yes/No)*	*District-wise data available (Yes/No)*
		% of dairy farm households who accessed credit for capital expenditure in farm business			
Human Resources	Competence & Expertise	% of workers who are employed in dairy industry and who have technical/vocational education	PLFS	Yes	Yes, but not reliable
		No. of training institutes	NDDB Training Institutes https://www.nddb.coop/services/hrd/training	Yes	Could be adapted to district level
	Innovation	State-wise no. of patents in dairy industry	Not Available	Not Available	Not Available
		% of ICAR institutes and State Agricultural Universities devoted to dairy or veterinary	https://icar.org.in/state-agricultural-universities, https://icar.org.in/institutes# and https://icar.org.in/state-agricultural-universities	Yes	Could be adapted to district-level
Government Support	Infrastructure	No. of PACS by State	PACS	Available	Available
		No. of Gram Panchayats covered by Dairy Cooperatives	National Cooperative Database, Ministry of Cooperation, Government of India, 2023 Link	Yes	Not Applicable
		% of (dairy development plus animal husbandry) capital expenditure to total government expenditure or total agriculture	RBI	Yes	Not Applicable
	Policies	Dairy Progeny Programme	Not Available	Not Available	Not Available

Source: NCAER Compilation of Indicators and framework adapted from
Sutawi, I. Prihartini, L. Zalizar, A. Wahyudi, L. Hendraningsih. 2022. "The Success Indicators of a Dairy Farming Cluster in Indonesia". *Asian Journal of Dairy and Food Research*. 41(1): 22–27. March.

Annexure 5.3: Occupational Mapping in the Livestock Sector

NCO-Code	*NCO-2015*	*Agriculture Skill Council of India*
1120.9900	Managing Directors and Chief Executives, Others	
1211.9900	Finance Managers, Others	
1212.0100	Personnel Managers	
1213.9900	Managers, Other Services	
1219.0100	Manager, Import and Export	
1311.0400	General Manager, Livestock Farm	
1311.0500	General Manager, Dairy Farm	
1311.1300	Manager, Livestock Farm	
1311.1400	Manager, Dairy Farm	
1420.0100	Manager, Wholesale Trade	
1420.0200	Manager, Retail Trade	
1420.0300	Manager Export	
1420.0400	General Manager, Wholesale Trade/Senior Manager, Wholesale Trade	
1420.0500	General Manager, Retail Trade, Senior Manager, Retail Trade	
1420.9900	Retail and Wholesale Trade Managers, Other	
1439	Services Manager Not Elsewhere Classified	
2141.1900	Dairy Technologist	
2250.0100	Animal Pathologist	
2250.0200	Veterinarian, General	
2250.0300	Veterinarian, Surgeon	
2250.0400	Animal Genetics	
2250.9900	Veterinarians, Other	
3240.0100	Vaccinator, Veterinary	
3240.0200	Stockman	Dairy Farm Supervisor (NSQF 5)
3240.0300	Animal Keeper	
3240.0400	Laboratory Technician, Artificial Breeding	Veterinary Clinical Assistant
3240.9900	Veterinary Technicians and Assistants, Other	Veterinary Field Assistant
3321.0100	Insurance Agent	
3321.9900	Insurance Representatives, Other	
3322.0500	Sales Supervisor, Wholesale Trade	
3322.0900	Sales Supervisor, Retail Trade	
3322.9900	Commercial Sales Representatives, Other	
4110.0100	Clerk, General	
4110.0200	Clerk, Enquiry	
4131.0100	Secretary/Back Office Support	
4131.0600	Computer Operator	
4131.9900	Typists and Word Processing Operators, Other	
4132.1400	Bill Processing Clerk	
4132.9900	Data Entry Clerk, Others	
4321.0100	Store Keeper	
4321.0200	Store Distributor	
4321.9900	Stock Clerks, Other	
4415	Filing and Copying Clerks	
4416.0101	Associate – HRO	
4419.9900	Clerical Support Workers, Other	
5164	Pet Groomers and Animal Care Workers	
5212.0100	Milkman	
5222.0100	Sales Supervisor, Wholesale Trade	
5243.0300	Home Deliveryman	
6121.0100	Farmer, Livestock	
6121.0201	Farmer, Dairy/Dairy Farmer/Entrepreneur	Dairy Farmer (Small Holding) NSQF2/Dairy Farmer Entrepreneur
6121.0300	Livestock Worker, General	
6121.0400	Herdsman	
6121.0500	Livestock Workers/Other Livestock Workers	
6121.0601	Dairy Farm Worker, General/Dairy Worker	Dairy Worker
6121.0700	Milker	
6121.0800	Milker, Machine	
6121.1400	Grass Cutter	
6121.9900	Dairy and Livestock Producers, Other	
6129.9900	Animal Producers and Related Workers, Other	
6130.0100	Artificial Breeding Technician	Artificial Insemination Technician
6130.0201	Seed Grower/Quality Seed Grower	
6130.0202	Seed Processing Worker	
6130.9900	Mixed Crop and Animal Workers, Other	
6224.0800	Yard Officer	
6310.9900	Subsistence Crop Farmers, Others	
6320	Subsistence Livestock Farmers	
6330	Subsistence Mixed Crop and Livestock Farmers	

NCO-Code	*NCO-2015*	*Agriculture Skill Council of India*
6340	Subsistence Fishers, Hunters, Trappers and Gatherers	
7127.0100	Mechanic, Refrigeration and Air-Conditioning	Bulk Milk Cooler (BMC) Operator and Chilling Plant Technician (NSQF 4)
7513.0100	Dairy Worker, General	
7513.0200	Separator Man	
7513.9900	Dairy Products Makers, Others	
753	Garment and Related Trades Workers	
9111.0100	Domestic Servant	
9112.9900	Helpers and Cleaners in Offices, Hotels and Other Establishments, Other	
9212	Livestock Farm Labourers	Helper
9213	Mixed Crop and Livestock Farm Labourers	
9321	Hand Packers	
		Livestock Service Provider (NSQF 4)
		Milk Procurement and Input Supervisor (NSQF 5)
		Milk Tester (NSQF3)
		Village-level Milk Collection Centre in-charge (NSQF 4)

Sources: Ministry of Statistics and Programme Implementation, Government of India. 2023. Periodic Labour Force Survey (PLFS), July 2022-June 2023. Document No.: DDI-IND-CSO-PLFS-2022–23. https://microdata.gov.in/nada43/index.php/catalog/179; National Career Service. Directorate General of Employment, Ministry of Labour and Employment, Government of India. National Classification Of Occupations-2015 (Code Structure). https://www.ncs.gov.in/Documents/National%20Classification%20of%20Occupations%20_Vol%20I-%202015.pdf and; Agriculture Skill Council of India website. https://asci-india.com/.