



Spatio-temporal analysis of bovine and ovine composition and bovine milk production trend in Himachal Pradesh, India: District-wise analysis

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Supplementary Table 1. Trends in lactating efficiency of bovine population across the districts of Himachal Pradesh

District	Year	Lactating efficiency (LE)		
		Indigenous cattle	Crossbred cattle	Buffaloes
Bilaspur	2007	0.33	0.43	0.45
	2012	0.37	0.37	0.42
	2017	0.48	0.52	0.45
Chamba	2007	0.32	0.34	0.46
	2012	0.32	0.31	0.54
	2017	0.40	0.50	0.36
Hamirpur	2007	0.54	0.53	0.50
	2012	0.52	0.40	0.54
	2017	0.44	0.55	0.47
Kangra	2007	0.46	0.42	0.46
	2012	0.66	0.36	0.44
	2017	0.39	0.48	0.37
Kinnaur	2007	0.41	0.40	-
	2012	0.42	0.43	-
	2017	0.41	0.50	-
Kullu	2007	0.37	0.31	0.16
	2012	0.50	0.41	0.49
	2017	0.49	0.56	0.83
Lahul-Spiti	2007	0.53	0.58	-
	2012	0.47	0.46	-
	2017	0.59	0.55	-
Mandi	2007	0.40	0.31	0.55
	2012	0.45	0.39	0.58
	2017	0.43	0.52	0.50
Shimla	2007	0.42	0.40	0.74
	2012	0.51	0.40	0.85
	2017	0.43	0.55	0.34
Sirmour	2007	0.33	0.33	0.42
	2012	0.39	0.29	0.45
	2017	0.42	0.45	0.34
Solan	2007	0.44	0.41	0.52
	2012	0.49	0.36	0.44
	2017	0.45	0.55	0.45
Una	2007	0.32	0.38	0.44
	2012	0.31	0.27	0.41
	2017	0.40	0.46	0.39
Himachal	2007	0.38	0.37	0.48
	2012	0.45	0.37	0.47
	2017	0.42	0.52	0.42

Supplementary Table 2. Forecasted values of milk production and nutritional demand in Himachal Pradesh

Year	Milk production ('000 MT) using ARIMA (0,2,2)	Nutritional demand ('000 MT)	Gap between demand and supply ('000 MT)
2000	749.40	655.60	-93.80
2001	761.20	665.53	-95.67
2002	773.00	674.06	-98.94
2003	793.09	682.58	-110.51
2004	813.19	691.11	-122.08
2005	833.28	699.63	-133.65
2006	853.37	708.16	-145.21
2007	873.47	716.68	-156.78
2008	926.49	725.21	-201.28
2009	979.52	733.74	-245.79
2010	1032.55	742.26	-290.29
2011	1138.61	750.79	-387.82
2012	1180.86	758.07	-422.79
2013	1223.11	764.53	-458.58
2014	1265.35	770.99	-494.36
2015	1307.60	777.45	-530.15
2016	1349.84	783.80	-566.04
2017	1392.09	789.06	-603.03
2018	1434.39	794.20	-640.19
2019	1504.89	799.35	-705.54
2020	1559.13	804.50	-754.63
2021	1613.37	809.64	-803.73
2022	1667.61	813.69	-853.92
2023	1721.84	817.75	-904.09
2024	1776.08	821.80	-954.28
2025	1830.32	825.85	-1004.47
2026	1884.55	829.90	-1054.65
2027	1938.79	832.86	-1105.93
2028	1993.03	835.70	-1157.33
2029	2047.26	838.66	-1208.60
2030	2101.50	841.51	-1259.99