

DRY FODDER STATUS IN TAMIL NADU - A SPATIAL ANALYSIS

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Crop residues continue to form the major fodder resource for livestock in the Indian subcontinent, despite augmented productivity in the livestock sub sector in the last four decades. Despite attempts made earlier to estimate feed and fodder availability in the country (Hazra and Rekib, 1991, Singh and Majumdar, 1992; Pandey, 1995; NDRI, 1996 and Ramachandra et al., 2007), there is little information available on how much of dry fodder are really available for bovines, in relation to what is required, across the districts of Tamil Nadu. Hence, this study was conducted to estimate dry fodder availability and requirement for bovine indifferent districts of Tamil Nadu.

A survey was conducted to ascertain the grain - straw ratios for various cereals, pulses and groundnut corps from 580 farmers in the State - five farmers chosen from each of the two villages, drawn from each selected block chosen from each district, at random. Secondary data on area and production of major crops in the State were collected from various issues of Season and Crop Reports, Tamil Nadu - An Economic Appraisal, and the website of Govt. of Tamil Nadu (www.tn.gov.in), for the last five years ending 2007-08. The grain-straw ratios, assessed from the survey were 1:1.77, 1:2.3, 1:2.7, 1:2.4, 1:1.8, 1:2.5, 1:1.88, 1:1.59, 1:1.7 and 1:2.1 for paddy, maize, cholam, cumbu, ragi, other cereals, black gram, green gram, other pulses and groundnut, respectively.

The dry fodder availability in each district was estimated by multiplying the total yield of each of the cereals / pulses / groundnut with their

respective grain-straw ratios and adding them. The basis of Adult Cattle Unit (ACU) of 350 kg body weight (Sastri, 1993) to homogenize the species, breed, sex, age and production differences was considered, besides taking into account the dry matter requirement per animal per day, as suggested by Banerjee (200) to estimate the dry fodder requirement of bovines. Hence, the dry fodder requirement was estimated taking the dry matter requirement of 2.50 percent per ACU, i.e., 8.75 kg of dry matter per ACU, which would include 4.4 kg of dry fodder, assuming 10 percent moisture in that.

The total dry fodder production in the State was estimated to be 76 lakh tons (Table 1). Villupuram, Thiruvannamalai, Dindigul, Erode, Perambalur, Cuddalore, Vellore and Coimbatore, belonging to either northern or western part of the State, were the leading districts in dry fodder production, each of which making available more than 3.25 lakh tons, owing to their dominance in production of cereals, pulses and or groundnut. The districts of Cauvery delta and Southern zone performed only dismally on this front.

The total dry fodder of 76.00 lakh tons were available for 81.46 lakh ACUs of bovines of the State, which constituted nearly three-fourth (71.72 percent) of cattle. However, the total dry fodder required for the bovines of the State was 117.70 lakh tons. The availability of and requirement for dry fodder in the State indicated the a deficit of 41.70 lakh tons in the State. The districts were

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Table 1
Estimated dry fodder availability and status in Tamil Nadu

Districts	Bovine population in lakh ACUs	Dry fodder			
		Availability in lakh tons	Requirement in lakh tons	Surplus / deficit in tons per annum	
				Total bovines	Per ACU
Districts of severe deficit (above -0.50 ton per ACU per annum)					
The Nilgiris	0.41	0.02	0.63	-0.61	-1.49
Sivagangai	2.14	0.81	2.97	-2.16	-1.01
Salem	5.89	2.84	8.63	-5.79	-0.98
Kanyakumari	0.77	0.42	1.15	-0.73	-0.95
Karur	1.56	0.91	2.10	-1.19	-0.76
Tirunelveli	3.95	2.45	5.45	-3.00	-0.76
Thanjavur	3.55	2.79	5.37	-2.58	-0.73
Pudukottai	2.57	2.05	3.81	-1.76	-0.68
Nagapattinam	2.49	1.95	3.61	-1.66	-0.67
Namakkal	3.32	2.69	4.86	-2.17	-0.65
Thiruvarur	2.38	1.99	3.50	-1.51	-0.63
Kancheepuram	3.54	3.30	5.49	-2.19	-0.62
Vellore	3.99	3.41	5.88	-2.47	-0.62
Erode	5.08	3.99	7.13	-3.14	-0.62
Thiruvallur	2.90	2.72	4.38	-1.66	-0.57
Tiruchirapalli	3.08	2.62	4.31	-1.69	-0.55
Villupuram	6.16	5.99	9.25	-3.26	-0.53
Dharmapuri	3.16	2.96	4.55	-1.59	-0.50
Districts of deficit (-0.30 to -0.49 ton per ACU per annum)					
Virudhunagar	2.46	2.20	3.33	-1.13	-0.46
Drishnagiri	2.48	2.43	3.51	-1.08	-0.44
Coimbatore	3.10	3.25	4.51	-1.26	-0.41
Madurai	1.86	1.89	2.55	-0.66	-0.35
Districts of moderate deficit (-0.10 to -0.29 ton per ACU per annum)					
Cuddalore	2.66	3.42	4.01	-0.59	-0.22
Ramanagathapuram	1.13	1.13	1.34	-0.21	-0.19
District of sufficiency (0 to -0.09 ton per ACU per annum)					
Thirvannamalai	3.62	5.27	5.47	-0.20	-0.06
Districts of moderate surplus (0.10 to 0.20 ton per ACU per annum)					
Perambalur	2.25	3.48	3.20	0.28	0.12
Thoothukudi	1.54	2.26	1.96	0.30	0.19
Districts of surplus (above 0.21 ton per ACU per annum)					
Dindigul	2.51	4.92	3.49	1.43	0.57
Theni	0.86	1.85	1.25	0.60	0.70
STATE	81.46	76.00	117.70	-41.70	-0.51

ranked according to their status of deficit, sufficiency and surplus into the districts of severe deficit (above - 0.50 ton per ACU per annum), deficit (-0.30 to -0.49 ton per ACU per annum), moderate deficit (-0.10 to -0.29 ton per ACU per annum), sufficiency (0 to -0.09 ton per ACU per annum), moderate surplus (0.10 to 0.20 ton per ACU per annum) and surplus (above 0.21 ton per ACU per annum).

Almost all the districts of the State showed deficit status, except only four districts viz. Theni, Dindugul, Thoothukudi and Perambalur which showed a surplus and Thiruvannamalai district where the deficit is negligible and hence ranked as the district of sufficiency. There were also two other districts viz. Ramanathapuram and Cuddalore where the deficit of dry fodder was only moderate. However, the situation in all other districts was acute. The districts - Villupuram and Erode topped (first and fourth place in the State) in dry fodder production in absolute quantity, besides Vellore, Kancheepuram and Coimbatore districts, could not support their relatively larger bovine wealth with their own dry fodder output and hence showed acute deficit status of dry fodder on per ACU basis.

This study indicated that 25 out of 30 districts of the State showed deficit of dry fodder for their bovines, with 19 of them facing an alarming problem. Changing cropping pattern, introduction of short term crop varieties, increasing use of mechanical harvesters, etc. could only bring down further more drastically the potential dry fodder availability, which is already under short supply. This issue deserves serious attention by the policy planners of both agriculture and animal husbandry of the State.

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