

STUDY ON MIGRATION PATTERN OF DANGI CATTLE HERDERS IN AKOLE BLOCK OF AHMEDNAGAR DISTRICT

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Abstract: The present study was undertaken in Akole block of Ahmednagar district, situated in Sahyadri mountain of Western Ghats, during the year 2018-19. The *Kanadis, Mahadev Kolis and Thakar* pastoralists are migrating to other places and regions as a coping mechanism against the scarcity of fodder and water in the region during summer. The scarcity of fodder at any time is a function of stocking rate and carrying capacity of the system at that time, which is affected mainly by the amount of precipitation and livestock population. This has been covered through analysing migration routes, management of animals during migration, feeding practises along with plants used for feeding, human involvement and difficulties faced by the communities.

The study indicated that migration period was about 4 months starting from the month of January, followed traditional migration route of total 208 km, the herd size was found to be in a range of 10 to 90 animals, two persons from a family were involved in this migration and totally open system and extensive management system was followed by the cattle herders. The total of 13 species of fodder plants were documented which have contributed as major source of fodder for the livestock. The rapid decline of grazing land, lack of good quality fodder grasses, lack of livestock health services, harassment and exposure to criminal elements are some of the difficulties faced by the herders during the migration.

Keywords: Migration, Dangi cattle herders, Akole block

INTRODUCTION

A cattle rearing is an important enterprise in dry land regions and in most semiarid agricultural systems. Pastoralists, by definition, derive most of their livelihood from raising livestock on natural forages or crop residue, rather than on cultivated and stored fodder or fenced pastures. For the pastoralists like Dangi Cattle herders in Akole Block of Ahmednagar District, Maharashtra, India, domestic animals are a living asset that contribute to household income, food security, and health through dietary diversification. The pastoralists have developed traditional migration routes and a partition of responsibilities, with some castes specializing in animal herding and others in cropping (Malhotra and Mann, 1982). Over the centuries, herders

have developed traditional knowledge of animal husbandry and natural resource management. This knowledge has allowed them to endure periodic severe droughts on their communally-managed rangelands (Kavoori, 2005). Dangi breed is originated from Dang District of Gujrat, and mostly found in Akole block of Ahmadnagar district and Sinner, Igatpuri block of Nasik district. The breed is medium size, sturdy in high rain due to its oily skin and hard hoof with excellent working abilities in rice fields as well as on hill rocks. Six strains named as Bhahada, Manhera, Kala, Khaira, Shevra, Para found based on colour coat. This study was conducted to understand the migratory route, management during the migration and Dangi breed rearing in migratory system.

GEOGRAPHICAL DISTRIBUTION AND ENVIRONMENT OF STUDY AREA

The present study area Ahmednagar district is situated more or less in the central part of the Maharashtra state. The Akole block is located between 19°32' N 74°0'E. The average rainfall of area was 508.9 mm. According to 2011 population census total population of Akole tehsil was 2,91,950 settled in 189 villages. In Akole block thick forests are sheltered and hill forts such as Harischandragad (1424 m), Kullang hill fort (1470 m), Ajoba hill (1375 m), Ratangad (1297 m) and Kalsubai hill (1646 m) are present. Kalsubai hill is the highest peak of Sahyadri ranges in Maharashtra.

MATERIAL AND METHODS

Herders with significant numbers of migratory Dangi cattle were selected for study during the year 2018-19. As cattle herders were migrating during the deficit period, the migratory tracts were identified based on the results of the enquiry from the Dangi cattle keepers by direct identification. The places covered during migration and their distance was obtained from enquiries. The information on migratory tracts of the cattle herds during different months in a year and the total distance travelled by the herd were collected. All three communities Kanadis, Mahadeo Kolis and Thakars were interviewed during their migration with a specially designed questionnaire during 2018-19. Data was collected on the general palatable fodder species available during the migration for grazing, fodder samples were analyzed in the laboratory for their nutritional content and constraints faced by 50 migrating families.

RESULTS AND DISCUSSION

Migration route

As indicated by the cattle herders the season for cattle migration is from February to October and the typical route for migration along with the names of major halting places were identified and searched with the Google maps, the choice of halting places was based on the availability of water bodies. The traditional migration route of total 208 km was followed by the herders

(Figure 1). Two persons per family depending on the herd size were involved in the activity. The livestock migration mechanism was reported to cope with fodder and water scarcity from Sudan, Nigeria, Yunnan, Rajasthan (Yi Shaoliang *et al.*, 2007; Louhaichi *et al.* 2014; http://www.fao.org/ag/againfo/home/documents/2013_FAO_sudan_Newsletter.pdf; https://projekte.unihoehenheim.de/atlas308/b_niger/projects/b2_4_2/html/english/ntext_en_b2_4_2.htm);). The herd size was ranged from 2 to 57 animals and flock /herd of 598 cattle were migrated in a group. Louhaichi *et al.*, (2014) reported that the herd size from 42 to 250 small ruminants and 35 to 220 cattle during migration in Rajasthan.

Available fodder species in migration tract and nutrient content: During the present study commonly available fodder resources were documented and analysed for their nutritive values (Table 1). Among the fodder species, 7 are herbs (grasses and legume), 3 are trees, and 3 shrubs. Among studied species *Melia azadarach* has highest crude protein content (15.46 %); *Dicanthium annulatum* has highest crude fibre content (34.87 %); *Azadirachta indica* has highest ether extract content (3.24 %); *Indigofera cordifolia* has highest ash content (21.56 %) and silica content (5.31%). On other hand *Dicanthium annulatum* has lowest crude protein content (5.61 %); *Clerodendrum multiflorum* has lowest crude fiber content (18.09 %); *Cymbopogon martinii* has lowest ether extract content (1%); *Prosopis julifera* has lowest ash content (5.22%) and silica content (0.63 %).

Constraints faced during migration: The Dangi cattle owners were asked for the major constraints faced during the migration period and they were ranked based on the priority (Table 2). The rapid decline of common grazing lands, lack of good quality fodder grasses and lack of health services were the major constraints faced by the cattle owners. These observations were similar with reported by Louhaich *et al.*, (2014).

CONCLUSIONS

The migration of Dangi cattle in Akole tehsil of Ahmednagar is an age old practice that allows livestock keepers to maintain their herds

because of better fodder and water availability during scarcity. The fodder availability in terms of fodder trees and grasses are partially rich in nutrient content which suffice the needs of the animals during migration. The constraints faced by during migration are decline in common land, lack of quality fodder grasses and access to health services. Harassment by criminals and restrictions on grazing create a lot of problem to the farmers. The shrinking of common

grazing lands has made it difficult for large herd owners to maintain the animals in their native areas round the year. The interventions of state government by making provision of mobile veterinary services and quality medicines on different migratory routes will help in reducing losses to livestock owners. Control of criminals will provide a healthy space for livestock owners in different regions and ensure safety of people engaged in this enterprise.

Table 1: Nutritional evaluation of fodder species in Akole block of Maharashtra

#	Botanical Name	Local Name	Dry matter (%)	Crude Protein (%)	Crude Fibre (%)	Ether extract (%)	Ash %	Silica %	Season of availability (months)
1	<i>Clerodendrum multiflorum</i> O. Ktze.	Tahakal	92.42	14.25	18.09	1.10	12.70	4.38	February July-August
2	<i>Melia azadarach</i> L.	Bakan	91.05	15.46	20.63	1.19	9.61	1.62	Available throughout the year but used during scarcity
3	<i>Azadirachta indica</i> A. Juss.	Limb	93.41	10.17	20.21	3.24	6.44	0.67	April, May, June
4	<i>Indigofera cordifolia</i> Heyne ex Roth.	Godali gawat	92.38	9.76	20.32	1.41	21.56	5.31	July to October
5	<i>Grewia asiatica</i> L.	Gandhari	89.78	10.62	20.55	1.33	11.45	2.66	February, March and October
6	<i>Prosopis julifera</i> (Sw.) DC.	Wadebabli pods	90.69	13.74	29.86	1.64	5.22	0.63	February, March
7	<i>Heteropogon contortus</i> P. Beauv	Surad	92.31	6.06	31.15	1.03	9.74	4.69	July to October
8	<i>Setaria intermedia</i> (Roth.) R. & S.	Chikta	91.45	7.04	28.82	1.17	15.32	5.15	July to October
9	<i>Themeda triandra</i> Forssk.	Kandal	92.07	6.01	34.42	1.46	12.43	4.99	July to October
10	<i>Apluda mutica</i> L.	Flvara	84.92	5.84	34.47	1.28	13.24	4.75	July to October
11	<i>Cymbopogon martinii</i> Wats.	Turda	94.52	6.42	30.22	1.00	11.19	4.06	July to October
12	<i>Tephrosia purpurea</i> (L.) Pers.	Suradi	90.49	5.95	34.15	1.68	10.11	5.01	July to October
13	<i>Dicanthium annulatum</i> (Forssk.) Stapf	Malvel	92.17	5.61	34.87	1.19	13.4	3.16	July to October

Table 2: Constraints faced by the cattle herders during migration

#	Name of constraint	Frequency (%) (N=50)
1	Rapid decline of common grazing lands due to encroachment and restrictions	92
2	Lack of good quality fodder grasses	86
3	Lack of livestock health services and quality veterinary medicines	80
4	Harassment and exposure to criminal elements during migration	46
5	Restrictions to livestock grazing on land controlled by the forest department	38
6	Proliferation of non-edible plant species in common lands	28
7	Theft of animals during stay in other districts	20

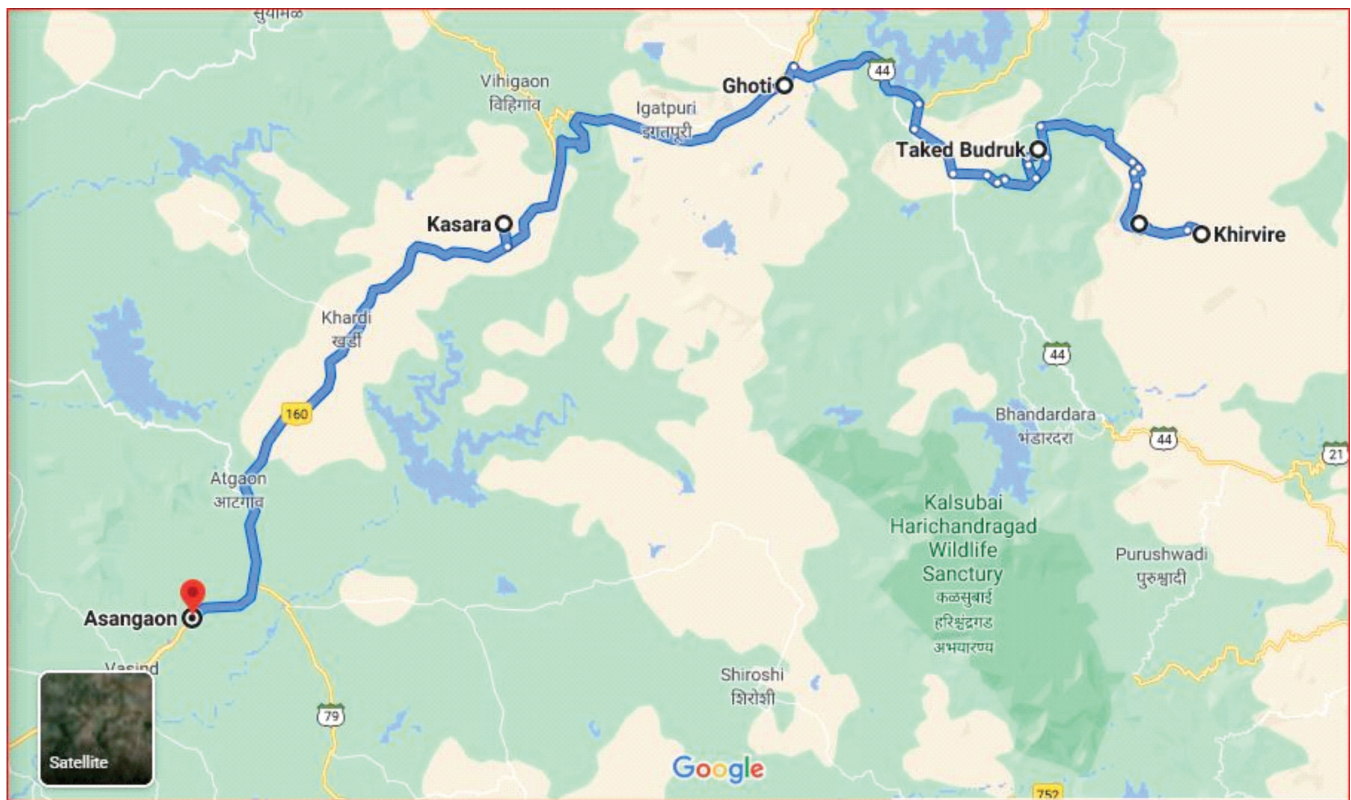


Figure 1: Traditional migration route of Dangi cattle herders

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