The Pharma Innovation

RM Dhuppe
M.Sc. (Agri), Department of
Animal Husbandry and Dairy
Science, College of Agriculture,
Latur, Maharashtra, India

Dr. AT Shinde
Associate Professor, Department
of Animal Husbandry and Dairy
Science, College of Agriculture,
Latur, V. N. M. K.V., Parbhani,
Maharashtra, India

LM Jadhao
M.Sc. (Agri), Department of
Animal Husbandry and Dairy
Science, College of Agriculture,
Latur, V. N. M. K.V., Parbhani,
Maharashtra, India

Buffalo marketing in Nanded district

RM Dhuppe, Dr. AT Shinde and LM Jadhao

Abstract
The study was conducted to assess the marketing of buffalo in Naigaon, Loha, Biloli, Nanded livestock markets in Nanded district of Maharashtra state. The data regarding marketing of buffalo was collected through personal interview of 10 sellers, 10 buyers, 10 brokers of each market. During study of buffalo marketing in selected four markets of Nanded district, (40% sellers and 42.5% buyers preferred to purchase Marathwadi buffalo. However (27.5% sellers) and (37.5% purchasers) preferred to Murrah buffalo because there was special demand for Marathwadi and Murrah buffalo. Majority of buffalo sellers (40%) and purchasers (35%) sold and purchased at the age of 4 to 5 years. (47.5%) of sellers expected need of brokers to search customer while (40%) buyers need broker to fix the appropriate price of buffalo. (65%) buffalo sellers in Nanded district brought buffaloes on the day of market while only (35% sellers) brought buffaloes on previous day of market. Majority (47.5%) sellers and (35%) purchaser sold and purchased buffaloes through channel I.

Keywords: Age, broker, buffalo, marketing, price, purchaser, seller

Introduction
According to 20th livestock census, livestock sector plays an important role in Indian economy. Livestock sector contributes 4.11% to national GDP and 25.6% agriculture GDP. India ranks 1st in world with total buffalo 109.85 million and Maharashtra ranks 3rd in India with its population 5.6 million (Anonymous, 2018) [1]. Marketing pattern of buffaloes generally refers to sale and purchase of buffaloes (milch, dry, pregnant, heifers, male and female calves) from village, animal fair, directly from owners, middle men in different seasons. Common source of purchasing of buffaloes mainly depend on time and place when purchase is needed. It is important to sort out uneconomic, unproductive stock and maintain healthy and productive buffaloes. Most of the buffalo's owners try to retain good qualities buffaloes and sell unproductive or low yielding buffaloes (Jadhoun *et al*., 2014) [3]. There are four marketing channels in which, Channel I-Seller/ farmer- Buyer/Farmer, Channel II - Seller/ Farmer-Broker-Buyers/Farmers, Channel III- Seller/Farmer-village Trader-Brokers- Buyers/Farmers, Channel IV - Seller/Farmer- Group Intermediaries - Buyer/ Farmer (Selvakumar and Kathiravan, 2019) [6].

Material and Methods
Selection of market
Livestock markets mostly controlled by agricultural produce marketing committee (APMC) and Gram panchayat in Nanded district were selected for the study. The four markets selected was represent whole district as per the geographical area of the district. These markets are mostly Naigaon, Biloli, Loha, Nanded.

Selection of sellers, purchasers and brokers
Ten sellers, ten purchasers and ten brokers were selected from each market on random sampling basis and they were interviewed.

Methods of data collection
The information on Marketing of Buffaloes in Nanded District was collected by personal survey interview method. For collection of information from sellers, purchasers, brokers and agricultural produce marketing committees the separate interview schedules and questionnaire were designed. The nature of information to be collected from these sources was different from each other. The information was collected from selected four markets on the weekly market days in the month February, March, April and May, 2022 by visiting each market for 4 times.

Corresponding Author:
RM Dhuppe
M.Sc. (Agri), Department of
Animal Husbandry and Dairy
Science, College of Agriculture,
Latur, Maharashtra, India

Method of data analysis
According to the objectives of study, the data collected through personal interview, which was further tabulate and statistically analyse by simple tabulation technique as per Panse and Sukhatme (1967) [5] and the results are interpreted for conclusion.

Result and Discussion

Table 1: Distribution of buffalo seller according to breeds of buffalo sold in selected markets is presented in Table 1

Sr. no	Breeds	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	Murrah	03 (30)	02 (20)	03 (30)	03 (30)	11 (27.5)
2	Marathwadi	04 (40)	04 (40)	03 (30)	05 (50)	16 (40)
3	Jaffrabadi	00 (00)	00 (00)	01 (10)	00 (00)	10 (25)
4	Pandharpuri	02 (20)	01 (10)	01 (10)	00 (00)	04 (10)
5	Nagpuri	00 (00)	00 (00)	00 (00)	01 (10)	10 (25)
6	Non-descript	01 (10)	03 (30)	02 (20)	01 (10)	07 (17.5)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

From Table 1. It was observed that majority (50%) sold Marathwadi buffaloes in Nanded market which was highest among other market whereas (40%, 40% and 30%) Marathwadi buffaloes sold in Loha, Naigaon and Biloli market. Majority (30%) Murrah buffaloes sold in Loha, Biloli and Nanded market. Whereas (20%, 10% and 10%) sellers sold Pandharpuri buffaloes. Nagpuri (10%) and Jaffarabadi (10%) buffaloes arrived for sale in the all four markets of Nanded district. Majority (30 percent) non-descript buffalo sold in Naigaon market whereas (10%, 20% and 10%) of non-descript buffaloes sold in Loha, Biloli, Nanded market.

It was noticed that in all selected markets of Nanded district maximum (40%) sellers engaged in selling Marathwadi buffaloes. Followed by (27.5%) engaged in selling Murrah buffaloes while remaining average buffalo sellers (17.5%) and (10 percent) engaged in selling Non-descript and Pandharpuri buffaloes. Jaffrabadi and Nagpuri buffaloes were same (25%) arrived for sale in all four markets of Nanded district. This trend indicates that in Nanded district there was special market demand for Marathwadi and Murrah buffaloes.

Table 2: Distribution of purchasers according to breeds of buffalo purchased in selected markets

Sr. no	Breeds	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	Murrah	05 (50)	03 (30)	03 (30)	04 (40)	15 (37.5)
2	Marathwadi	04 (40)	05 (50)	04 (40)	04 (40)	17 (42.5)
3	Jaffrabadi	00 (00)	00 (00)	01 (10)	00 (00)	10 (25)
4	Pandharpuri	01 (10)	01 (10)	01 (10)	01 (10)	04 (10)
5	Nagpuri	00 (00)	00 (00)	00 (00)	01 (10)	10 (25)
6	Non-descript	00 (00)	01 (10)	01 (10)	00 (00)	02 (05)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The data regarding distribution of buffalo purchasers according to breeds of buffalo purchased in selected markets is presented in the Table 2. It was noticed that
From above four markets (50%) buffaloes in Naigaon market preferred to purchase Marathwadi buffaloes while (50%) buffalo buyer from Loha market participated in purchasing Murrah buffaloes. (10%) buffalo buyer purchased Pandharpuri buffalo in Biloli market. While remaining same

(05%) buffalo buyer in Naigaon, Biloli market were involved in non-descript buffaloes in all selected markets of Nanded district. From the above result it was concluded that the maximum buffalo buyer (42.5%) was involved in purchasing Marathwadi buffaloes followed by Murrah buffaloes (37.5%) while Pandharpuri buffaloes (10%) and non-descript buffaloes (05%) buffalo breeds in all selected markets of Nanded district. Jaffarabadi and Nagpuri (25%) were the same buffaloes arrived for sale in all four markets.

Table 3: Distribution of sellers, according to the age of buffaloes sold in selected market

Sr. No	Age (years)	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	2 to 3	02 (20)	01 (10)	01 (10)	02 (20)	06 (15)
2	3 to 4	03 (30)	03 (30)	01 (10)	02 (20)	09 (22.5)
3	4 to 5	04 (40)	03 (30)	05 (50)	04 (40)	16 (40)
4	5 to 7	01 (10)	02 (20)	02 (20)	00 (00)	05 (12.5)
5	Above 7	00 (00)	01 (10)	01 (10)	02 (20)	04 (10)
6	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The buffalo sold in selected markets were distributed on the basis of age of buffalo is presented in Table 3. Which shows that the% buffalo sellers sold 2 to 3 years, 3 to 4 years, 4 to 5 years, 5 to 7 years, above 7 years. It was seen that in Nanded market (50%) buffaloes were sold at the age 4 to 5 years buffaloes were sold by sellers and their number was highest as compare to other markets. While (30%) sellers in Loha and Naigaon market sold at the age 3 to 4 years of buffaloes. Whereas, (20%) sellers sold at the age above 7 years buffaloes in Nanded market. From the above result it was observed that in selected markets of Nanded district maximum buffalo sold by sellers (40%) sold at the age 4 to 5 years buffaloes followed by (22.5%) 3 to 4 years buffaloes. (15%) of buffaloes sold at the age 2 to 3 years while (12.5%) of buffaloes sold at the age 5 to 7 years of age. (10%) buffaloes sold at the age above 7 years of age in all selected markets.

Our result of the study similar with Upale and Lokhande (2012) [7] reported that (58%) of marketed buffaloes were from the age 3 to 5 years which indicates that there was high preference by the buyers to these buffaloes.

Table 4: Distribution of buyers, according to the age of buffaloes purchased in selected market

Sr. No	Age (Yrs.)	Markets				Total
		Loha	Naigaon	Nanded	Biloli	
1	2 to 3	01 (10)	02 (20)	02 (20)	01 (10)	06 (15)
2	3 to 4	02 (20)	03 (30)	03 (30)	05 (50)	13 (32.5)
3	4 to 5	05 (50)	04 (40)	03 (30)	02 (20)	14 (35)
4	5 to 7	02 (20)	01 (10)	01 (10)	02 (20)	06 (15)
5	Above	00 (00)	00 (00)	01 (10)	00 (00)	01 (2.5)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The buffalo purchased in selected markets of Nanded district according to age was presented in Table 4. Which shows that the% buffalo buyer purchased 2 to 3, 3 to 4, 4 to 5, and 5 to 7 and above 7 years. The result of study showed that in selected markets of Nanded district maximum (35%) buyers preferred to purchase at the age 4 to 5 years buffaloes followed by (32.5%) 3 to 4 years buffaloes. While (15%) of buffaloes purchased 2 to 3 and 5 to 7 years of age. Minimum purchased

of buffaloes occurs (2.5 percent) of above 7 years of age. Our result of the study similar with Upale and Lokhande (2012) [7] reported that (58%) of marketed buffaloes were from the age 3 to 5 years which indicates that there was high preference by the buyers to these buffaloes.

Table 5: Channels adopted for sale of buffalo in selected markets

Sr. No	Channels	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	Channel -I	07 (70)	03 (30)	05 (50)	04 (40)	19 (47.5)
2	Channel-II	00 (00)	02 (20)	02 (20)	02 (20)	06 (15)
3	Channel-III	02 (20)	04 (40)	03 (30)	04 (40)	13 (32.5)
4	Channel-IV	01 (10)	01 (10)	00 (00)	00 (00)	02 (05)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The channels adopted by sellers to sale buffaloes in market is presented in Table 5. Shows that the% seller who sold their buffaloes through channel-I Sellers/farmers-Buyers/farmers), (Channel II- Sellers/farmers-Brokers-Buyers/farmers), (Channel III- Sellers/farmers- Village traders-Brokers-Buyers/farmer), (Channel IV-Seller/farmer-group intermediaries-buyer/farmer) in Loha, Naigaon, Biloli and Nanded. From above result showed that, in all selected markets of Nanded district maximum number of sellers (47.5%) sold their buffaloes through channel I because using this channel farmer got appropriate price for buffaloes. (15%) sellers sold buffalo through channel II, while (32.5%) sold through channel III. Whereas minimum (05%) sold through channel IV.

From result it was concluded that maximum buffalo sellers adopted channel -I as a channel to sell their buffalo in all four markets. However, channel- IV was less preferred to sell the buffalo. Dixit *et al.* (2016) [2] reported the different marketing channel in the sale of buffaloes from villages. Maximum sale of buffaloes to take place (38.5%) respondents sold their buffaloes directly to buyers. While (16%) respondents sold their buffaloes through traders. Jadhoun *et al.* (2014) [3] reported sale of Murrah buffaloes was studied and reported that majority of (80.63%) of beneficiaries and (61.87%) of non-beneficiaries sold their buffaloes directly to purchaser. Whereas (15.62%) beneficiaries and (33.13%) non-beneficiaries sold through middlemen like traders, brokers etc. However, very few beneficiaries (03.75%) and non-beneficiaries (05.00%) sold their buffaloes to others sources like, government livestock farms, commercial dairy farmers and private dairy farms.

Table 6: Channels adopted for purchase of buffaloes in selected markets

Sr. No	Channels	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	Channel-I	07 (70)	01 (10)	03 (30)	03 (30)	14 (35)
2	Channel-II	01 (10)	01 (10)	03 (10)	03 (30)	08 (20)
3	Channel-III	01 (20)	07 (80)	04 (60)	01 (20)	13 (32.5)
4	Channel- IV	01 (10)	01 (10)	02 (20)	01 (10)	05 (12.5)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage.

The information regarding channel adopted by purchasers to purchase buffaloes in market was present in Table 6. Shows that the% purchaser who purchased their buffaloes through channel-I Sellers/farmers-Buyers/farmers, Channel II-Sellers/farmers-Brokers-Buyers/farmers, Channel III-Sellers/farmers-Village traders – Broker -Buyers/ farmer, Channel IV - Seller /farmer-group intermediaries-buyer/farmer Loha, Naigaon, Biloli, Nanded market in Nanded district. The results of study showed that in selected markets of Nanded district, majority (35%) purchasers engaged in purchasing buffaloes through channel- I. While (20%) purchasing buffaloes through channel II and average (32.5%) purchasers engaged in purchasing buffalo through channel III whereas minimum (12.5%) buffalo purchasers purchase through channel IV.

Finding of study correlates with Jadhon *et al*. (2014) reported that with regards of channels of purchasing of Murrah buffaloes nearly three fourth of beneficiaries (74.38%) and (59.38%) non beneficiaries purchased their buffaloes directly from dairy farmers. Whereas, (20 percent) beneficiaries and (33.75%) non-beneficiaries purchased through middleman like traders, brokers.

Table 7: Need of brokers, according to seller in selected markets

Sr. No	Need of broker for the seller	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	To search a customer	07 (70)	05 (50)	04 (40)	03 (30)	19 (47.5)
2	To negotiate the price	01 (10)	02 (20)	01 (10)	01 (10)	05 (12.5)
3	Guarantee of payment	02 (20)	03 (30)	04 (40)	04 (40)	13 (32.5)
4	Cheating	00 (00)	00 (00)	01 (10)	02 (20)	03 (7.5)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The above data regarding need of broker for various reason to sold buffalo was presented in Table 7. Showed that% seller reported need of broker to search a customer, to negotiate price, for guarantee of payment and avoid cheating.
According to market study reported selected markets of Nanded district, maximum buffalo sellers (47.5%) expected need of broker to search customers. While (32.5%) sellers need broker to give guarantee of payment. Whereas, (12.5%) sellers need broker for to negotiate the price and remaining (7.5%) sellers need broker to avoid cheating from buyers.
The present results of study are similar with Upale and Lokhande (2012) [7] reported nearly (77%) sellers and buyer

opened that there is need of middlemen in selling of animal because middlemen help them in various ways *viz.* searching the buyer, finalize the price, provide guarantee of buffalo to purchasers and for buyer, help in negotiation of price, selection of right type of buffalo, to buy on credit.

Table 8: Need of brokers, according to buyers in selected markets

Sr. No	Need of broker for the buyer	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	To fix the price	05 (50)	03 (30)	03 (30)	05 (50)	16 (40)
2	Choice of buffalo	01 (10)	04 (40)	04 (40)	02 (20)	11 (27.5)
3	For purchasing on credit	02 (20)	01 (10)	02 (20)	01 (10)	06 (15)
4	For guarantee of buffalo	02 (20)	02 (20)	01 (10)	02 (20)	07 (17.5)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The data regarding need of broker for purchasing according to buyers in selected markets was presented in Table 8. Shows that% buffalo buyers reported need broker to fix price of buffalo, for choice of buffalo, purchasing on credit and for guarantee to fix the price of buffalo. The study noticed that in all selected markets of Nanded district, majority (40%) buffalo buyers need of broker to fix price of buffalo. While (27.5%) buyer need broker for choice of buffalo. Whereas (17.5 percent) buyer need broker for guarantee of payment and remaining (15 percent) buyer need broker for purchasing

buffalo on credit.
The result findings similar with Upale and Lokhande (2012) [7] reported that on the total sellers, 60% fixed price of buffaloes through middlemen. Nearly 77% sellers and buyer opened that there is need of middlemen in selling of animal because middlemen help them in various ways *viz.* searching the buyer, finalize the price, provide guarantee of buffalo to purchasers and for buyer, help in negotiation of price, selection of right type of buffalo, to buy on credit.

Table 9: Distribution of sellers according to arrival of buffaloes in the market

Sr. No	Arrival of buffaloes	Markets				Total
		Loha	Naigaon	Biloli	Nanded	
1	On the day of marketing	08 (80)	05 (50)	07 (70)	06 (60)	26 (65)
2	Previous day of market	02 (20)	05 (50)	03 (30)	04 (40)	14 (35)
	Total	10 (100)	10 (100)	10 (100)	10 (100)	40 (100)

Figures in parentheses indicates percentage

The data regarding arrival of buffaloes in selected markets of Nanded district was given in Table 9. Showed that 80, 50, 70 and 60% buffalo seller from Loha, Naigaon, Nanded and Biloli market brought their buffaloes on the day of marketing whereas 20, 50, 30, 40% brought buffalo on previous day of marketing. From above mentioned results it was observed that maximum (65%) buffalo sellers in Nanded district bring their buffaloes on the day of market while (35%) sellers bring their buffaloes on previous day of market.
The result correlates with Haque *et al.* (2020) [4] reported that maximum farmers (73.3%) purchased their buffaloes from local market followed by another buffalo farmer (26.7%). Buffaloes were taken to local market for selling on market days.
Upale and Lokhande (2012) [7] reported that on an average within a month time, traders sold all the buffaloes purchased. Further, it is seen that 60% sold were made within weeks' time followed by 20% sold or purchased buffaloes were sold on same day in same market and Lastly 15% within fortnight.

Table 10: Details of market charges in selected buffalo markets

Sr. No.	Market charges	Markets			
		Loha	Naigaon	Biloli	Nanded
1	Entrance fee for sellers	10	10	05	10
2	Market fees for buyer	30	30	20	30

From Table 10. Shows that in Loha, Naigaon, Nanded, market Rs. 10 per head entrance fee and Rs.30 market fee was charged from seller and buyer by APMC respectively. While in Biloli market Rs.5 per head entrance fee and Rs. 20 market

fee was charged from seller and buyer by APMC respectively.

Conclusion
It was concluded from the results of present study as, during marketing of buffalo in selected four markets of Nanded district, it was found that majority of 40% sellers and 42.5% buyers were sold and purchased Marathwadi buffaloes because of less maintenance cost. Whereas 30% sellers and 37.5% buyers showed more interest in marketing of Murrah breed because, it has good yield and less problem.
Age of buffalo was the imp criteria followed in marketing of buffalo. The age group categorized 2 to 3 years, 3 to 4 years, 4 to 5 years, 5 to 7 years and above 7 years. Result indicated that majority 40% sellers and 35% buyers prefer to sold and purchased 4 to 5 years of buffaloes. While least 10% sold by sellers and 2.5% purchased by buyers. Majority of sellers (47.5%) need broker to search customer and 40% buyers need to fix the price of buffalo. It was observed that maximum (65%) in selected markets brought their buffaloes on the day of market because of sellers came from nearby areas. It was seen that majority sellers (47.5%) sold buffalo through channel I and (35%) buffalo purchased through channel I.

References
1. Anonymous. 20th Livestock Census. Department of Animal Husbandry and Dairy Science. 2018.
2. Dixit VB, Bharadwaj A, Singh KP, Duhan A, Hema T. Farmers perception abut importance of phenotypic characters in pricing of a buffalo. Indian Journal of Animal Sciences. 2016;86(6):101-103.

3. Jadoun YS, Jha SK, Bhadauria P. Marketing pattern of Murrah buffaloes among dairy farmers affected by Integrated Murrah Development Scheme of Haryana. Indian Journal of Dairy science. 2014;67(6):541-546.
4. Haque S, Alam J, Asad LY, Enayat K, Tashmina S. Socioeconomic status of buffalo farmers & management practices of buffalo in selected areas of Jamalpur district in Bangladesh. Asian Australasian Journal of food safety security. 2020;4(2):49-52.
5. Panse VG, Sukhatme PV. Statistical methods for agricultural workers. Second edn. ICAR, New Delhi. 1967.
6. Selvakumar KN, Kathiravan G. Marketing channels, market structure & conduct of cattle shandies in Tamil Nadu, An Exploratory study. International Journal of Educational Science & research. 2019;9(6):29-36.
7. Upale PK, Lokhande T. The buffalo marketing system in Solapur cattle market centre of Solapur district, A Geographical study ARRS. 2012;1(1):63-68.