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SOCIO-ECONOMIC STATUS OF FISHERMEN DEPENDENT ON THE LANJUD RESERVOIR, NEAR KHAMGAON BULDHANA (MH)

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ABSTRACT

Present research work was carried out to assess the socio-economic status of 39 fishermen depending on the Lanjud dam situated on the Lendi River near Khamgaon. From Nov 2020 to Dec 2021, a one-year survey of the Lanjud reservoir in the Buldana district of Maharashtra was conducted. During the study it was found that the fishery business is male dominant, the majority of fishermen were found illiterate, the majority of fishermen belonged to the age class 31-45 years, in addition to 27 fishermen employed in other part-time jobs. Along with this study, some other basic amenities status of fishermen was studied. This study revealed that the socioeconomic condition of fishermen in the study area is poor. Government agencies, NGOs, and relevant stakeholders should take the necessary actions to raise the literacy rate and the standard of living.

Keywords: Socio-economic status, Lanjud Dam, Fishery status, Fishermen, community.

1. Introduction

India has a prosperous variety of fauna and flora due to the presence of rich freshwater habitats and it ranks as one of the world's huge diverse nations. Fisheries play a very huge role in the socioeconomic development of the fishing community. Fish is a rich source of protein supply to the rural community where potentialities for production exist. (Shriparna Saxena, 2012)

Despite the fact that India has abundant fishing resources. However, it is not being properly and fully utilized. As a result, there is a fish supply shortage in relation to demand. This could be due to the fishermen being technologically, economically, and socially backward. As a result, the government, cooperatives, and the fishing industry should take appropriate steps to exploit available resources and improve the socioeconomic conditions of fishermen. Community information on various aspects such as income, living costs, fishing gear, boat transport, and infrastructure marketing are termed socioeconomic information. Socioeconomic status is the strongest indicator of people's life (Kitagawa and Hauser, 1973; Marmot et al., 1987).

Fresh water from the Lanjud dam is especially used for drinking, domestic and agriculture purposes. But apart from these, the reservoir is used for catching fish. During the investigation from November 2020 to December 2021, 31 fish species belongings to 8 families and 13 orders were recorded from Lanjud dam (Kale & Bathe, 2022). The current work was undertaken with the objective to investigate the socioeconomic status of the fishing community. The socio-economical study provided a useful tool for better understanding the life condition of fishermen communities in the context of changing environmental and socioeconomic factors affecting their traditional livelihood from the given area.

2. Study Area

The Lanjud dam is a Medium Irrigation Project constructed on the Lendi River,10 km on Khamgaon-Nandura Highway, North-West near Khamgaon Dist. Buldana (MS). It was sanctioned in 1984 and has a catchment area of about 66.96sq km. The gross storage capacity of the Dam is 1.9892 mcm. It coordinates 760 -36'-00" longitudinally and 20-00'-45" latitudinal. The dam has a total length of 1215m with a height of about 12.55m. It was mainly constructed to supply water to MIDC Khamgaon, nearby agriculture, and drinking

water to the surrounding villages.



Fig. 1. Geographical location of the research site- The Lanjud dam. (Source-Google Maps)3. Material and Methodsofficial documents. The obtained informatio

The present study was carried out from Nov 2020 to Dec 2021, among the fishermen engaged in fishing in Lanjud reservoir. 39 individuals from the fishermen's community were interviewed. To acquire primary data, questionnaires, discussion, observation, and personal interview methods were used. whereas secondary data were obtained from

official documents. The obtained information was accumulated and analyzed by MS Excel. Collected data explain the socio-economic and livelihood condition of fishermen of Lanjud dam.

4. Result and Discussion

During the tenure of the socioeconomic study of fishermen, we have found the following data

Sr. No.	The age group of fishermen (yrs.)	No. of Fishermen	Percentage
1	0-15	-	-
2	16-30	6	15.38
3	31-45	23	58.97
4	46-60	6	15.38
5	61-75	4	10.25



Table 2: Sex distribution of fishermen

Sr. No	Sex	No. of Fishermen	Percentage
1	Female	-	-
2	Male	39	100

Table 3: Marital status of fishermen

Sr. No.	Marital status of fishermen	No. of Fishermen	Percentage
1	Unmarried	2	05.12
2	Married	37	94.87





Table 1: Age distribution of fishermen

Sr.	Educational	No. of	Percentage			
No.	Qualification	Fishermen				
1	Illiterate	28	71.79			
2	Up to SSC	9	23.07			
3	Up to HSC	2	05.12			
4	Graduate	-	-			

Table 4: Educational status of fishermen



Table 5: Mode of transportation of fishermen

Sr.	Transportation	No. of	Percentage		
No	Facility	Fishermen			
1	In thermacol boxes	11	28.20		
2	In open trays/bags	28	71.79		

Table 6: Selling point of fishermen

No. of

Fishermen

39

-

No. of

Fishermen

4

20

15

Percentage

100

-

10.25

51.28

38.46

Selling Point

Local market

Export

Fishermen's

monthly income

1000-3000

3001-6000

Above-6000

Sr.

No.

1

2

Sr.

No.

1

2

3





Table 7: Monthly income of fishermen (Rs.) Fishermen's Income Percentage 38.46 Above-6000 51.28 3001-6000 10.25 1000-3000

0

Figure 8

Table 8: Status of accommodation of fishermen

Sr.	Housing condition	No. of	Percentage
No.		Fishermen	
1	Jute, Straw, plant	9	23.07
	leaves, and soil		
2	Tin and wood	20	51.28
3	Brick, wood & tin	7	17.94
4	Brick and cement	3	07.69



20

40

60

Table 9: Basic amenities status of fishermen

Sr. No.	Electricity and Water supply	No. of Fishermen	Percentage
1	Regular	09	23.07
2	Irregular	30	76.92

Table 10: Basic amenities status of fishermen

Sr.	Fuel facilities for	No. of	Percentage
No.	cooking	Fishermen	
1	Tap Water	8	20.51
2	Tube Well	24	61.53
3	Dam Water	7	17.94





Sr. No	Employed in other part-time jobs	No. of Fishermen	Percentage
1	Yes	27	69.23
2	No	12	30.76





Table 12: Basic amenities status of fishermen

Sr.	Sanitation	No. of	Percentage
No.	practices	Fishermen	
1	Open	5	12.82
2	Kachha	12	30.76
3	Ring Slap and	15	38.46
	Wooden houses		
4	Pakka	7	17.94

From the above (Table 1) it was concluded that 58.97 percent of fishermen's age group present between 31-45 yrs., 15.38 percent were present under 30 yrs., whereas 25.63 percent of fishermen's age group present between 45-75 yrs. So, the middle age group was dominated by fishing. From the present study, it was found that the (Table 2) rural area fishery business is male-dominated, and females do not show interest in the fishery. The above study (Table 3) reveals the majority of the respondent were married (94.87%) and the remaining few were unmarried (05.12%). Generally, in rural areas, they may have arranged marriages within close relations.

As far as their education is concerned (Table 4) most the of fishermen in the study area were illiterate (71.79%) only a few of them are able to do signatures. Of all the respondents only 23.07% of fishermen were educated up to SSC and only 05.12% up to HSC. In the survey (Table 5) it was found that 71.79% of fishermen don't have thermacol boxes they transport fish in open trays and bags as soon as possible after catching and the rest 28.20% transport fish in thermacol boxes with the ice. The selling point (Table 6) for all the fishermen is a local market no fish will be exported out.

The average monthly income of the fishermen's community is very low than the national per capita income (Table 7). 10.25% of respondents had the lowest income between Rs. 1000-3000. 51.28% of respondents had a monthly income between Rs. 3001-6000.



38.46% of respondents came under highest monthly income above Rs. 6000. The nature of the house reflects the fishermen's social status. During the survey (Table 8), it was found that 51.28% of households of fishermen were wooden walls with a tin shed. 23.07% of households were from Jute, Straw, plant leaves, and soil. 17.94% of households were containing brick, wood & tin and very few fishermen (07.69%) were able to make their houses with brick and cement.

From the present survey, it was found that (Table 9) there was 76.92% of fishermen have irregular electricity and water supply facility, and only about 23.07% of fishermen had electricity and water supply facility.

As far as fuel facility for cooking is concerned (Table 10) 20.51% of respondents used tap water. 61.53% used tube well and 17.94% used dam water. During the study period, it was found (Table 11) that only 30.76% of fishermen solely depended on fishing while the rest 69.23% engaged in other part-time jobs along with fisheries such as agriculture, casual labor, fish vending, businessmen, etc.

As the fishermen of the rural area (Table 12) are not conscious of sanitation. In the study period, it was found that 17.94% of toilets were pakka. 38.46% were semi-pakka as it was made up of ring slap and wooden houses. 30.76% were kaccha and 12.82% of the fishermen had no sanitary facilities open.

5. Conclusion

The present study was conducted to assess the socioeconomic condition of fishermen dependent on the Lanjud dam near Khamgaon Dist. Buldhana. The fishing community of the study area was found very poor and illiterate. Due to illiteracy and non-mechanization of crafts and gears, they are falling behind in fish

production. Fishermen also lack technical knowledge of boat operation. The monthly income of fishermen was lower than the national per capita income. Government organizations, non-governmental organizations, and respective organizations or groups should take the necessary steps to assist the community in improving their livelihood.

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Avifaunal diversity at and around Lanjud dam of Buldhana district, Maharashtra

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ABSTRACT

The avifaunal diversity at and around Lanjud dam was studied from October 2021 to September 2022. The present study was carried out to find the avian diversity of the study area. The birds were observed and photographed using a digital camera. The study reveals that a total of 56 species including water birds and land birds belonging to 33 different families and 15 different orders were recorded. Out of the finding, 46 bird species were residential, 8 bird species were residential migratory and 2 species was winter migratory. During investigation 52 are Least concern, 02 are Near threaten, and 02 are Non assessment birds recorded.

Keywords: Avifauna, Lanjud Dam, Diversity, Bird Diversity, Khamgaon

INTRODUCTION

Avifaunal diversity forms an important component of the natural ecosystem (Manjunath and Joshi, 2012). Because of their ability to fly through the air and their exquisite coloration, birds have always captured man's attention. A variety of environmental issues can be studied using birds as useful models and ideal bio-indicators. A closer look is being taken as field ornithology methods, ecological studies, and conservation monitoring are receiving more and more attention. The various lakes and wetlands in any city serve as a balancing reservoir for sustaining native flora and fauna (Grimmett and Inskipp, 2007; Surana et al., 2007).

Khamgaon taluka is known as the most developed city in the Buldana district (M.S.) of India. Latitude 20.6833, and Longitude 76.5666 are the coordinates. It contains 132 villages. A Lanjud reservoir is located 10 kilometers from Khamgaon. It has a harsh climate. Winters are extremely cold, while summers are extremely hot, with temperatures reaching 49^oC.

After Nagpur, Khamgaon has the hottest summer city in Vidarbha. The average annual rainfall is 694.69 mm.

Fresh water from the Lanjud dam is especially used for drinking, domestic, and agricultural purposes and used for catching fish. From this dam during November 2020 to December 2021, 31 fish species belongings to 8 families and 13 orders were recorded (Kale and Bathe, 2022). The socioeconomic condition of fishermen dependent on the Lanjud dam was also studied (Bathe et al., 2022). The present investigation was conducted in and around Lanjud reservoir, near Khamgaon, District Buldhana. The dam is built on the Lendi River and it is surrounded by human settlements, farmlands, and bushes that serve as natural habitats for birds. The present study determines the current status of avian diversity in the Lanjud reservoir region and creates an updated bird checklist for the purpose of conserving indigenous and migratory species that live in this area.

MATERIAL AND METHOD

Study area:

The Lanjud dam is situated 10 km, on Khamgaon-Nandura Highway i.e. NH 6, North-West of Lendi River and surrounded by human settlements like Parkhed, Kurha, Pimpri -Deshmukh villages and has a concern with the MIDC area. It has a catchment area of about 66.96sq km and comes under a Medium Irrigation Project and was sanctioned in 1984. The gross storage capacity of the Dam is 1.9892 mcm. It coordinates 760 - 36' - 00'' longitudinally and 200- 00'- 45'' latitudinal. The dam has a total length of 1215m with a height of about 12.55m. It was mainly constructed to supply water to MIDC Khamgaon, nearby agriculture, and drinking water to the surrounding villages.

Methodology:

The present investigation was carried out from October 2021-September22. The bird observation was carried out using binoculars during the morning from 6 am to 10 am and in the evening from 5 pm to 7 pm. The photographs of the bird were taken using D5300 Nikon Camera with a 70-300 Zoom lens. The identification and field diagnosis of birds was carried out by using the standard literature of Grimmett et al., (1999), Ali and Ripley, (1995), and the

book Indian Birds by Salim Ali (1996). Birds observed were recorded and identified by the habitat type; ecological status, Abundance, and checklist were prepared.

RESULT AND DISCUSSION

The survey was conducted to record biodiversity and the ecological status of birds from the Lanjud dam region, 10 km, distance from the Khamgaon-Nandura Highway, Khamgaon Dist. Buldana, Maharashtra of India. In the present report total of 56 bird species belonging to 33 different families and 15 different orders were recorded. Out of the finding, 46 bird species were residential, 8 bird species were residential migratory and 2 species was winter migratory. The findings of the preceding studies are typically similar to the findings of the current report, which show that resident birds outnumber resident migratory and migratory birds. The birds can be seen in all three seasons, but they are most visible in the winter and less so in the summer due to food scarcity. Out of 56 birds investigated in the present study 52 are Least Concern, 02 are Near Threaten, and 02 are Nonassessment Birds. A total of 42 bird species were found to be common, 11 species were found to be uncommon, and 03 species of birds were found to be occasional. The maximum bird species belonging to the order Passeriformes.

Many researchers did related work such as Patil et al., (2016) was reported 143 species of birds belonging to 15 orders and 41 families. Out of total 143 species, 07 are migrants, 95 are Resident and 41 are Resident migrants. Seasonal variation is well-marked in birds due to the availability of food and nesting and suitable environmental conditions. The largest number (60) of bird species is recorded from the order Passeriformes which belongs to 17 families. Puri (2015) reported 27 species from Zaliyalake in Gondia district. Lad and Patil (2015) recorded 131 species from Bhayander and Naigaon wetlands in the Thane district. Rohankar and Kothare (2020) reported 17 species of birds of 16 families and observed that out of those 17species 16 are the least concern and 1 is near threatened belongs to the family threskiornithidae i.e. Threskiornis melanocephalus (White Ibis). Kakade and Kasture (2022) reported that 55

Order	Family	Scientific Name	Common Name	Status	IUCN	Abunda
					Status	nce
		Accipiter badius	Shikara	StatusIUCN StatusA nRLCCRLCCRLCCRLCCRLCCRMLCCRMLCCRMLCCRMLCCRMLCCRMLCCRMLCCRMLCCRMLCCRMLCCRLCC <trr>RLCC<tr< td=""><td>С</td></tr<></trr>	С	
		Buteo buteo	Common buzzard	R	LC	0
		Butasturteesa	White-eyed buzzard	R	NT	U
Accipitriformes	Accipitridae	Anas poecilorhyncha	Spot bill duck	R	LC	С
		Milvus migrans	Black kite	R	LC	С
		Anser indicus	Bar-headed goose	RM	LC	С
		Hieraaetus pennatus	Booted eagle	StatusRLCRNTRLCRRRR <t< td=""><td>0</td></t<>	0	
Apodiformes	Apodiae	Apus affinis	House swift	R	LC	С
	Bucerotidae	Ocyceros birostris	Indian grey hornbill	StatusIUCN StatusRLCRNTRLCRLCRLCRMLCRMLCRRRRRRR </td <td>С</td>	С	
Bucerotiformes		Ocyceros griseus	Malbar grey hornbill		U	
	Upupidae	Upupa epops	Common hoopoe	R	LC	С
Caprimulgiformos	Podargidae	Tetrachotomies moniliger	Frog mouth owl	RM	LC	U
Capitinuignoi mes	Strigidae	Athene brama	Spotted owlet	R	LC	С
	Jacanidae	Metopidius indicus	Bronze-winged jacana	R	LC C LC C LC C LC C LC C LC C LC U	С
	Scolopacidae	Actitishypoleucos	Common sandpiper	RM	LC	С
Charadriiformes	Recurvirostridae	Himantopus himantopus	Black winged stilt	R	LC	С
	Charadridae	Vanellus indicus	Red wattled lapwing	R	LC	С
		Vanellus malabaricus	Yellow wattled lapwing	R	LC	U
	Glareolidae	Glareola lacteal	Small pratincole	R	LC	С
		Aredeola grayii	Indian pond heron	R	LC LC LC	С
	Andridan	Ardea cinerea	Grey heron	RM	LC	U
Delecaniformer		Ardea purpurea	Purple heron	R	LC	U
Pelecalinormes	Aldeldae	Ardea alba	StatusStatusStatusShikaraRLCCCommon buzzardRLCOWhite-eyed buzzardRNTUSpot bill duckRLCCBlack kiteRLCCBar-headed gooseRMLCCBooted eagleWMLCOHouse swiftRLCCIndian grey hornbillRLCCMalbar grey hornbillRMLCUCommon hoopoeRLCCFrog mouth owlRMLCCBornze-winged jacanaRLCCBlack winged stiltRLCCRed wattled lapwingRLCUSmall pratincoleRLCCGrey heronRMLCUPurple heronRLCCGreat egretRLCCVellow-footed green pigeonRLCCVellow-footed green pigeonRLCCWhite kingfisherRLCCGreen bee-eaterRLCCGromon nuckooRLCCGray francolinRLCCCommon kestrelRMLCCGray francolinRLCCGray francolinRLCCGray francolinRLCCGreen bee-eaterRLCCGreav francolinRLC <td< td=""><td>С</td></td<>	С		
		Bubulcus ibis	Cattle egret	R	NotationStatusRLCRLCRLCRLCRLCRMLCRMLCRMLCRMLCRMLCRMLCRMLCRMLCRMLCRMLCRMLCRLC <t< td=""><td>С</td></t<>	С
		Egretta garzetta	Little egret	R		С
		Treronphoenicoptera	Yellow-footed green pigeon	R	LC	С
Columbiformes	Columbidae	Columba livia	Rock pigeon	R	LC	С
		Streptopelia chinensis	Spotted dove	R	LC	С
	Alcedinidae	Alcido benghanlensis	Common kingfisher	R	LC	С
Coraciformic	Halcyonidae	Halcyon smyrnensis	White kingfisher	R	LC	С
Coracitorinis	Coraciidae	Coracias benghalensis	Indian roller	R	LC	С
	Meropidae	Merops orientalis	Green bee-eater	R	LC	С
Cuculiformer	Cuaulidaa	Eudynamys scolpacea	Asian koel	R	LC	С
Gucumormes	Gucunuae	Cuculus canorus	Common cuckoo	R	LC	С
Falconiformis	Falconidae	Falco tinnunculus	Common kestrel	RM	LC	С
Galliformes	Phasianidae	Ortygornis pandiceiranus	Gray francolin	R	LC	С

Table 1: Preliminary list of birds observed at and around Lanjud reservoir, Khamgaon, Dist-Buldhana (M.S.)

Barthe et al., 2023

		Francolinus pictus	Painted francolin	R	LC	U
		Erancolinus francolinus	Plack flancolin	D		11
		Francolinus francolinus		ĸ	LC	0
		Coturnix coturnix	Common quail	R	LC	C
		Pavo cristatus	Indian peafowl	R	LC	С
Gruiformes	Rallidae	Amaurornis phoenicurus	White-breasted water hen	R	LC	U
		Gallinula chloropus	Common moor hen	R	LC	U
Passeriformes	Monarchidae	Terpsiphone paradise	Indian paradise fly catcher	R	NT	0
	Sturnidae	Acridotheres tristis	Common myna	R	LC	С
	Muscicapidae	Saxicoloides fulicata	Indian robin	R	LC	С
	Pycnonotidae	Pycnonotus cafer	Red vented bulbul	R	LC	С
	Corvidae	Corvus splendes	House crow	R	NA	С
		Corvus macrorhynchos	Jungle crow	R	NA	U
	Dicrudidae	Dicrurus macrocercus	Black drango	R	LC	С
	Passeridae	Passer domesticus	House sparrow	R	LC	С
	Motacillidae	Motacilla alba	White wagtail	WM	LC	С
	Nectariniidae	Cinnyris asiaticus	Purple sunbird	R	LC	С
	Leiothrichidae	Argya strita	Jungle babbler	R	LC	С
		Microcarbo niger	Little cormorant	RM	LC	С
Psittaciformes	Psittaculidae	Psittacula krameri	Rose Ringed parakeet	R	LC	С
		Psittacula cyanocephala	Plum headed parakeet	R	LC	С

Abbreviations used above table

Status: R-Resident RM- Resident Migrant, and WM- Winter Migrant

IUCN Status: Least Concern (LC), Near Threaten (NT) and Non assessment (NA). **Abundance:** C- Common, U- Uncommon, O-Occasional, and Rr- Rare



Fig.1- Avian species percentage in respective orders

Species including aquatic and terrestrial birds belonging to 18 orders & 34 families were recorded in and around Nalganga Dam.

CONCLUSION

The most recent status of bird diversity is provided by this study, which also adds to our understanding of the bird diversity in and around Lanjud Dam. The protection and conservation of threatened and vulnerable birds will benefit from the findings of this study on the biodiversity of birds. The study reveals that a total of 56 species including water birds and land birds belonging to 33 different families and 15 different orders were recorded. Out of the finding, 46 bird species were residential, 8 bird species were residential migratory and 2 species was winter migratory. During the investigation 52 are Least concern, 02 are Near threat, and 02 are Non-assessment birds were recorded. A total of 42 bird species were found to be common, 11 species were found to be uncommon, and 03 species of birds were found to be occasional.

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