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## RESEARCH ARTICLE

### KAPLA BEEL AND ITS IMPACT ON SOCIO- ECONOMIC CONDITION OF DEPENDENT PEOPLE

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#### ABSTRACT

This paper presents the resources of kapla beel, and its impact on socio-economic status of dependent people. The kapla beel economically supports the dependent people for their survival. The dependent people earn their livelihoods directly through capturing of fishes and cultivating paddy in wetland areas. Around the beel there are seven villages namely Kapla, Baniakuchi, Helaypara, Amrikhowa, Haldhibari, Sinadi and Churchuria village having approximately 14,100 population. Out of these 710 persons primarily and 654 were secondarily dependent on beel resources. The dependent people overexploit the fish and land resources of the beel to maximum extent and as a result of that Kapla beel facing several kinds of threats and in the long run destroys the potentialities of ecosystem services to dependent population on sustain basis. It is necessary to take some protective measures to conserve kapla beel and its resources to provide benefit to dependent population around the beel on sustained basis.

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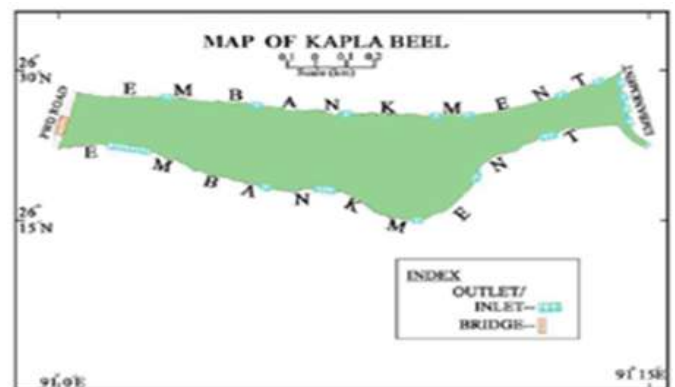
#### INTRODUCTION

The economic benefits that man derive from the wetlands are water supply, food, fodder, fuel, fibre, transport, agriculture, seasonal plain farming, tourism, water sports, culture and heritage development. Wetlands provide tremendous economic benefits to the mankind through production of various types of fishes. In general two thirds of world's inland fish harvest comes from the wetlands (Jhingran, 1991). India ranks 7<sup>th</sup> position among fish productivity nations of the world and employed 5.97 million people of whom 2.40 million people are full time fishermen (Nayak and Mishra, 2008). The beels in Assam are traditionally used as natural fisheries which are extremely rich in nutrients, othes aquatic resources have immense production potential for various types of flora and fauna. The study of socio-economic condition of fishermen were carried out by several workers Saha and Banerjee (1991), Deka (1999), Barik and Sarma (2006) and Nayak and Mishra (2008). However there is scarcity of work on socio-economic condition of fishermen. Therefore, the present study was designed to investigate the socio-economic condition of fishermen which are engaged in fishing activity in kapla beel.

#### Study Area

The kapla beel is a freshwater wetland located in Barpeta district of lower of Assam. Geographically it lies at the intersection of 26°15'–26°30' N latitude and 91°0'–91°15' E longitude (Map-1). The beel is surrounded by Kapla, Haldhibari, Sinadi, Baniakuchi, Helaypara and Amrikhowa

and Churchuria villages. There are about 14,100 people living in the surrounding villages of kapla beel.



Map-1. Kapla beel.

#### MATERIALS AND METHODS

A comprehensive study on utilization of kapla beel resources was essential to analysis the utilization pattern and to formulate some measures to maintain the resources on sustained basis for dependent population for their socio-economic development. Initially the surrounding villages of kapla beel were surveyed and total number of population was estimated. A questionnaire was prepared and distributed to the head of families which are dependent directly or indirectly on the beel resources. The questionnaire was distributed to about 60% of dependent families and personally interviewed them.

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## RESULTS AND DISCUSSION

Ecosystem resources are of great value to the dependent population. In aquatic ecosystem the most important resources are fish and fishery, aquatic vegetation as fodder and paddy cultivation in the beel area. Study of beel resources will enhance the scope for sustainable use of the resources and optimization of ecosystem services to dependent people. The fish resource of kapla beel composed of 39 species. The fish was captured from the month of October to May of each year. In Kapla beel fishing was carried out by three groups of people. The first group comprised of neighbouring people, fishing for self consumption and commercial purposes. The second group of people comprised of fishermen from nearby Chenga, Tapa and Barmada villages who indulged in fishing for commercial purposes. The third group of people was fishermen from far away places like Marigaon (of central Assam) and Bihar (North India) who were hired by lessee for fish capturing in the beel. The first group of people was dependent for both fishing and agriculture and other beel resources

average daily income of each fisherman was ranging between rupees 78.00 to 89.00 for the study period against the total fish catch ranged between 12378- 17345 kg yr<sup>-1</sup>.

Kapla beel is blessed with good potential of aquatic resources. Around the beel there are six villages namely Kapla, Baniakuchi, Helaypara, Amrikhowa, Haldhibari and Churchuria village having approximately 14,100 population. Out of these 710 persons primarily and 654 were secondarily dependent on beel resources i.e. 52.05% primarily and 47.95% was secondarily dependent on beel resources. The neighbouring villagers used the beel land for agricultural practices. About 29 families were engaged in cultivation in the beel area. They used 12-27 hectares of land for the period of December to April of each year. They cultivated only one type of rice popularly called Bodo paddy. The study also revealed that production of rice in beel area was 2.63 – 3.34 tons/hectare of land. In addition to fishery and agricultural resources the local inhabitants collected certain species of aquatic plants namely *Trapa bispinosa* and *Nelumbo nucifera*.

**Table 1. Income of fishermen from fishery resources of Kapla beel**

YEARS	Fishing gear used	Fish capturing period	Fishermen engaged/day	Total fish catch(kg)/month	Avg.fish catch/day (kg)	Total income @ Avg.Rs. 55-60/kg	Daily income/ fishermen (Rs.) (Approx.)	daily income of each fishermen (Rs.)
2003	Cast net	October	35	1080	34.84	64800.00	35.84	89.00
	Gill net	November	35	1440	48.00	86400.00	49.37	
	Dip net	December	40	3575	115.32	160875.00	77.84	
	Dingari	January	40	3340	107.74	150300.00	72.73	
	Pallo	February	40	3410	121.78	187550.00	100.47	
	Hook etc	March	25	1560	50.32	109200.00	84.54	
		April	12	2190	73.00	142350.00	237.25	
	May	18	750	24.19	52500.00	56.45		
Total		240 -250 days	7428/yr	17345	—			
2004	Cast net	October	30	1120	36.13	67200.00	43.35	82.00
	Gill net	November	22	1221	40.70	85470.00	77.70	
	Dip net	December	30	3120	100.65	218400.00	140.91	
	Dingari	January	32	3301	106.48	165050.00	106.48	
	Pallo	February	32	2905	103.75	159775.00	103.75	
	Hook etc	March	28	1200	38.71	72000.00	66.36	
		April	22	1208	40.26	84560.00	80.53	
	May	22	605	19.52	42350.00	39.03		
Total		240 -250 days	6306/yr	14680	—			
2005	Cast net	October	22	1043	33.65	52150.00	45.87	78.00
	Gill net	November	22	1122	37.40	56100.00	51.00	
	Dip net	December	30	2900	93.55	174000.00	112.26	
	Dingari	January	30	1500	48.38	105000.00	67.74	
	Pallo	February	33	1680	60.00	117600.00	76.36	
	Hook etc	March	21	2280	73.55	159600.00	147.09	
		April	21	902	30.06	63140.00	60.13	
	May	21	960	30.97	67200.00	61.94		
Total		240 -250 days	6058/yr	12387	—			

The second group of people were engaged in fishing, cutting grasses of beel area for animal and fish feed. The third group mostly dependent on fishing for their livelihood and they were engaged by lessee (mahaldar) of the beel. This group remained in the beel during peak fishing season only. The fishermen used different types of fishing gears such as Cast net, Gill net, Dip net, Dingari, Pollo and Hook etc and they practiced one of the important fishing method called “Katal fishing” that yielded maximum fish catch. The fish was captured for the period of 240–250 days in each year (Table –1). During this period the total fish landing was 17345 kg in 2003, 14680 kg in 2004 and 12378 kg in 2005. The total numbr of fishermen engaged in the study period was 7428, 6306 and 6058 in the respective years of study. Almost all the fishermen were illiterate and the males were chief earner for the family. The

The *Trapa bispinosa* is commonly known among the inhabitants as ‘singhori’ from which a kind of fruit is obtained which has great commercial edible value. The local villagers collected 15 – 42 kg of singhori each year from the entire beel area. The flower of *N. nucifera* popularly known as ‘lotus’ has commercial value and collected by locals for marketing. The grass plant of the beel namely *Typha sp.* and *Sparganium erectum* was collected by locals for use of fodder for live stocks and fishery. During the study period 92–135 Tons of grasses were collected by the villagers from the beel. The dependent people earn their livelihood from these resources which were obtained from the beel. The local villegers excessively utilized every available resources of the beel without any strategy for the sustainable development of beel resources. The present study emphasized the need to apply

appropriate management technique to sustain the kapla beel ecosystem resources for providing better ecosystem services on sustain basis and improve the socio economic condition to the dependent neighbouring population.

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