



CULTIVATION AND EMPLOYMENT OPPORTUNITY IN SUNDARBANS WITH SPECIAL REFERENCE TO PATHARPRATIMA BLOCK OF SOUTH 24 PARGANAS IN WEST BENGAL,INDIA

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Abstract:

Aim- The present study aims to understand the employment opportunity in cultivation of Sundarbans with special reference to patharpratima block of South 24 parganas in West Bengal.

Method- Using the data from Department of Sundarban Affairs,Government of West Bengal,2020 census,in workers (Main workers of Multi skills,Marginal workers,Other workers,Household industries,Non-working,Agriculture labour and Cultivators) from 19 blocks,the block level Employment Opportunity Index (EOI) is constructed.

Results- The study reveals that inter-blocks variation of agriculture labour and cultivators in Sundarbans.Agriculture labour is lowest (4%) in Canning-i CD block and highest (10%) in Sandeshkhali-ii and Hingalganj.Two blocks,Mathurapur -i and Jaynagar-I remain lowest percentage (2%) of cultivators and Sagar block remains highest percentage (7%) of cultivators.

Conclusion- In spite of having agricultural land,there are less percentage of agricultural labour as well as cultivators of maximum blocks of Sundarbans.Dwellers of Sundarbans turn their face from agriculture and employment opportunity in cultivational field slowly decreased in different blocks.This study may help to review the different work field as employment opportunity,specially in patharpratima block.

Keyword- Employment opportunity,variation of agriculture labour,Cultivational field,Employment Opportunity Index(EOI).

1. Introduction- The agriculture sector's contribution to the Indian economy is much higher than the world's average (6.4%) economy.West Bengal is the first position to produce rice. In India,cultivation is still the chief occupation of the people and main pillar of country's economy.cultivation is conceived as mainstay of Indian economy.That's like,many people started to inhabit in Sundarbans basically depending on paddy cultivation.Civilization rises and falls on the basis of cultivation as well as natural calamities. 'TEBHAGA' movement is the one of an example of cultivation base revolution.But,now there is unwillingness in the part of the people to engage in agriculture. 'As per census 2011,conducted by the

Registrar General of India, the total number of agricultural workers in the country have increased from 234.1 million (127.3 million cultivators and 106.8 million agricultural labourers) in 2001 to 263.1 million (118.1 million cultivators and 114.3 million agricultural labourers) in 2011. But the share of workforce engaged in the agriculture sector (comprising of cultivators and agricultural labourers) has come down from 58.2 % in 2001 to 54.6 % in 2019-20. Agricultural labourers decrease from 263.1 million in 2011 to 152 million in 2021.

1.1) Cultivation in Sundarbans- From the regime of East India Company(1765), in cultivation of Sundarbans, Zamindari system was started. Then middlemen were created. The farmers were given the right of tenants but occupancy not. By the time, farmers had turned into share cropper, agricultural labour and mahindar. In 1954, zamindari system had been abolished. Most of the people in Bengal rather Sundarbans were depend on paddy cultivation. To all the people of Sundarbans, cultivation is present, past and future. Traditionally, the Sundarbans is characterized by small scale of farmers and paddy cultivators. Income in Sundarbans, generally comes from one of three categories of occupation like-i) forest workers ii) prawn seed collectors and iii) land owners. But in present, forest workers and prawn seed collectors are decreased for various conditions.

‘Generally, most of the lands of Sundarbans are monocropped. Among cropping patterns due to rainy season. Boro cultivation is practiced only in a small part of this region for lack of irrigation and presence of saline water mainly. Most of population are engaged mainly in rain-fed-agriculture but approximately 205 of total agricultural land is irrigated land.’ (Saha, 2015).

1.2) Research Gap – In Sundarbans, there is no target condition, to increase the employment opportunity in paddy cultivational field. Many population of Sundarbans are far from their own habitat to employment opportunity. Residence of Sundarbans are compelled to go out of state for better livelihood and there is no policy taken to come their home back to arrange alternative way of income. However, the employment opportunity in cultivational field, especially in educated people, is not highlighted. Moreover, the diversity in cultivational nature and employment status with in intra-CD blocks of Sundarbans are not observed. Creation of different opportunities for employment in cultivational sector, is not focused. No research shows to attract educated youth in the field of agriculture as the confirm source of income, sufficient for their livelihood. Thus, present study is explained on the basis of different types of workers and their agricultural pattern on Sundarbans.

1.3) Objectives of the study- To assess the employment opportunities and cultivation among CD blocks of Sundarbans in West Bengal, the present paper mainly focuses on the unemployment rent in cultivation. Thus, the main objectives of this study are :

- i) To understand the present agricultural framework ; land holding size.
- ii) To identify the obstacles to attain the full utilization of agricultural potentiality.
- iii) This study seeks to understand the scope of employability in different sectors except in cultivation.

In this context, aim of this study is to understand the present agrarian system and its role into employment support in Sundarbans.

2. Data and Methods – Data of this paper has been collect from census of India,2011 and 2020 census data (Department of Sundarban Affairs,Government of West Bengal).According to occupational stasus,there are mainly five types of workers on 19 CD blocks of Sundarbans.Dividing workers are 1.Main workers (multi skills) 2.Marginal workers 3. Household industries 4.Other workers and 5.Non-working.

Table-1 : Percentage of agriculture labour and cultivators.

Sl. no.	Name of blocks	Total population (2011)	Agricultural labour	Percentage (%)	Cultivators	Percentage (%)
1	Sagar	212037	14463	7%	13785	7%
2	Namkhana	182830	10839	6%	11421	6%
3	Kakdwip	281963	14625	5%	10440	4%
4	Patharpratima	331823	24312	7%	17007	5%
5	Mathurapur-1	195104	10263	5%	4498	2%
6	Mathurapur-2	220839	17382	8%	13387	6%
7	Kultali	229053	19102	8%	13838	6%
8	Jaynagar-1	263151	13091	5%	6092	2%
9	Jaynagar-2	252164	15802	6%	11826	5%
10	Canning-1	304724	13380	4%	10586	3%
11	Canning-2	252523	20425	8%	8733	3%
12	Basanti	336717	27453	8%	18586	6%
13	Gosaba	246598	23194	9%	14425	6%
14	Haroa	214401	19503	9%	10387	5%
15	Minakhan	199084	18028	9%	8345	4%
16	Sandeshkhali-1	164465	16034	10%	7098	4%
17	Sandeshkhali-2	160976	15043	9%	6887	4%
18	Hasnabad	203262	17049	8%	8540	4%
19	Hingalganj	174545	17577	10%	7767	4%

Source: Census of India,2011.

Table-2: Different types of workers in Sundarbans

Name Of blocks	Main Workers	%	Marginal workers	%	Household industries	%	Other workers	%	Non-Working	%	Total workers
Sagar	84881	32	39718	15	1210	0.5	15705	6	127156	47	268670
Nam Khana	41916	21	23983	12	893	0.4	18763	9	116931	58	202486
Kakdwip	59625	19	41038	13	1716	0.6	32799	10	181300	57	316523
Patharpratima	65105	18	75896	21	1614	0.5	22169	6	190822	54	355606
Mathurapur-1	36415	17	27804	13	1937	1	19717	9	130885	60	216758
Mathurapur-2	50001	21	30894	13	2470	1	16762	7	139944	58	240071
Kultali	48976	20	38694	16	3125	1	12911	5	141383	58	245089

Jaynagar-1	62654	23	26594	10	4307	2	9164	3	173903	63	276622
Jaynagar-2	55200	20	38040	14	5226	2	22346	8	158924	57	279736
Canning-1	73712	21	35136	10	3920	1	45826	13	195876	55	354470
Canning-2	43939	16	39960	15	1239	0.4	13542	5	168624	63	267304
Basanti	70206	19	62018	17	4018	1	19978	6	204673	57	360713
Gosaba	50994	20	60002	23	1178	0.5	12197	5	135602	52	259973
Haroa	57856	24	12401	5	1956	0.8	26019	11	141144	59	239376
Minakhan	45579	21	22748	10	1471	0.7	17735	8	130757	60	218290
Sandeskhkali-1	40131	22	20874	12	828	0.5	16171	9	103460	57	181464
Sandeskhkali-2	34118	20	27631	16	608	0.4	11580	7	99227	57	173164
Hasnabad	65669	27	14408	6	7242	3	32838	13	123185	51	243342
Hingalganj	40701	21	33814	18	4087	2	11270	6	100030	53	189902

Source: 2020 Census data (Department of Sundarbans Affairs, Government of West Bengal).

To show the employment opportunity in Sundarbans, a survey on Patharpratima block (9 villages) has been done. As there are 87 villages, so, as per random sampling (10%), 9 villages are selected for farmer's opinion. The present paper has been carried out both primary and secondary data. The total subject constructs mainly primary and secondary data and analysed on the basis of primary data collected from household survey on ' Random Sampling'.

2.1) Study area- Among the 19 CD blocks of Sundarbans, Patharpratima block has been selected for sample study area. The Patharpratima CD block is selected for its large area (484.47 sq.k.m) among 19 CD blocks of Sundarbans. It is a community development block that forms an administrative division in Kakdwip sub division of South 24 parganas district in the Indian state of West Bengal. It is located at 21°47'39" N latitude and 88°21'20" E longitude. This block is bounded by Mathurapur-1 and Mathurapur-2 CD blocks in north, Sundarbans forest in the east, Bay of Bengal in the south, Namkhana, Kakdwip and Kulpi CD blocks are in the west.

Patharpratima block map



There are 87 villages in Patharpratima block. As there are 87 villages, so, as per random sampling (10%), 9 villages are selected for household survey. Within nine villages, questionnaires are answered by 80 farmers. The number of farmers are selected on the basis of total number of houses of each selected villages.

2.2) Data collection and analysis- The surveyed villages of Patharpratima block are-

Kamdevpur, Sitarampur, Dakshinkashinagar, Achintyanagar, Purbachintamonipur, Lakshmipur, Kedarpur, Dakshin mahendrapur and Rakshas khali. Below mentioned data are on the basis of 80 households.

Total agricultural land- 323 bigha 9 katha (where 20 katha = 1 bigha). Mono cropped land- 306 bigha 3 katha (95%). Double cropped land- 188 bigha 3 katha (58%) Tripple cropped(Aaus)- 2 bigha (1%). Convert in fishery- 13 bigha 1 katha (4%). Fallow land- 4 bigha 2 katha (1%). 2 bigha 2 katha land are fallow for low land and low production of paddy. 2 bigha land also convert into betel vine. Tripple cropped said mainly 'Aaus' paddy. This type of paddy is produced in very short time (Baisakh to Shrabon Bengali month) but it is faced with monsoon.

Table-3: Workable and dependent population in surveyed houses

Name of surveyed villages	Total no. of houses	No. of surveyed houses	Total members in surveyed houses	Male	Female	Workable population (17-65)	Dependent population (<16, >65)
Kamdevpur	670	8	49	26	23	38	11
Sitarampur	1062	10	63	36	27	45	18
Dakshin kashinagar	1132	12	61	31	30	40	21
Achintya Nagar	1323	13	68	37	31	51	17
Purba Chintamonipur	425	6	27	13	14	17	10
Lakshmipur	812	9	44	23	21	25	19
Kedarpur	676	8	48	27	21	39	9
Dakshin mahendrapur	181	3	17	9	8	9	8
Rakshaskhali	936	11	61	33	28	35	26

Total	7217	80	438	235(54%)	203(46%)	299(68%)	139(32%)
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Source: primary survey

Table-4: Cultivators and other workers

Cultivators		Other workers								
Male	Female	Daily Wage labour	Live in other state	Casual teacher	Work in fishery	Betel vine worker	Company employee	Service	Vehicle driver	Unemployed
116	73	29	32	9	11	4	13	5	4	3
39%	24%	10%	11%	3%	4%	1%	4%	2%	1%	1%

Source: Primary survey

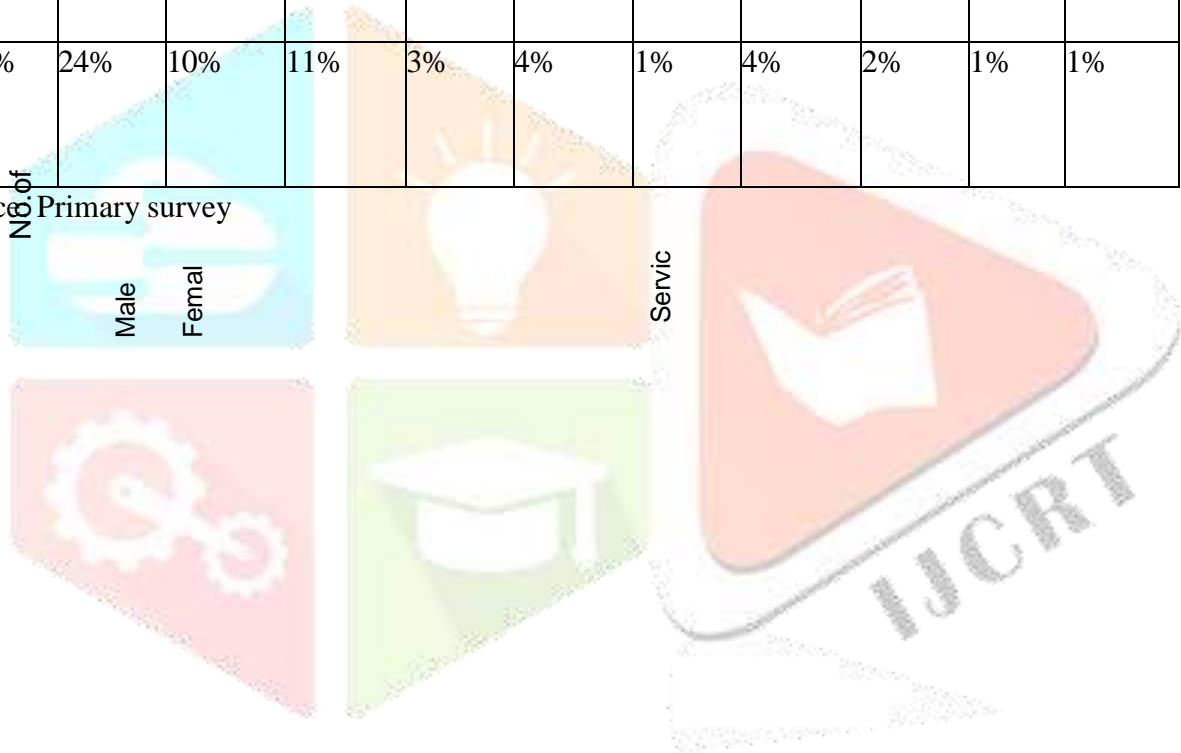


Table-5: Input for paddy cultivation

Types of paddy	Production time	Input						Total	Remarks
		seeds	Price of seeds	Pesticide	Irrigation	Labour	Price of labour		
Amon	June-October	4 kg	Rs.600	Rs.2500	-	13	$13 \times 450 = 5850$	8950	Labour cost is high
Boro	November-March	3 kg	Rs.450	Rs.5000	Rs.2500	9	$9 \times 450 = 4050$	1200	Lack of water
Aaus	April-June	3kg	Rs.450	Rs.2000	Rs.2000	9	$9 \times 450 = 4050$	8500	Hinderence of Monsoon

Table-6: Output from paddy cultivation/bigha/year

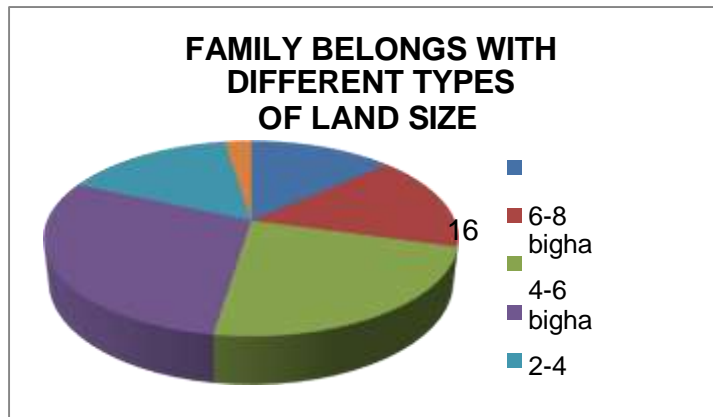
Types of paddy	Production (in Mon) 1 sack=1.4 mon	Selling price	Profit/bigha(Output-Input)
Amon	16.8	20160	$20160 - 8950 = 11210$
Boro	22.4	26880	$26880 - 12000 = 14880$
Boro	22.4	26880	$26880 - 8500 = 18380$

Source: Data of Table 5&6 are build with primary survey. 1 sack= 56 kg.

1. Annual income/year for triple cropped : $11210 + 14880 + 18380 = 44470$
2. Annual income/year for double cropped(Amon+Boro): $11210 + 14880 = 26090$
3. Annual income for mono cropped(Amon):11210

Table-7: Land size and number of family

Land size	>8 bigha	6-8 bigha	4-6 bigha	2-4 bigha	<2 bigha	Land less family
No.of family	11	13	19	24	13	2
Percentage	14%	16%	24%	30%	16%	3%



13 high 1 katha agricultural lands convert into fishery for *Venamil* paddy production. 'In Patharpratima CD blocks, 14660.14 acres of land was acquired and vested land was distributed among the peasants. The total number of patta (documents) holders was 13,264. In 2013-14 Patharpratima produced 77,077 tonnes of Amon paddy'. (Source: District Handbook, South 24 Parganas, 2020).

Name of different seeds of paddy cultivation in different time.

Amon-Dudheswar, Patnai, Morishal, Sada-mota, Kalo-mota, Gobindobhog etc. Most are cultivated of these types of paddy.

Boro-Sonachur, Pasakathi, Sreya, N-shankar etc.

Aaus-Ghenchi patnai, only one type of Aaus paddy is cultivated in Sundarbans.

3. Discussion- According to 2011 census, unemployment is a serious problem in the Sundarbans region. There are 62.06% of the people are non-workers. Actually, 1/3 of the populations do not have any work to do. As per the 2011 census, the maximum and minimum cultivators belong in Sagar block (30.52%) and Jaynagar-1 (9.72%) respectively. Maximum agricultural labourer live in Canning-2 (46.48%) and minimum in Canning-1 (18.15%). Otherhand, maximum and minimum household industrial worker are in Hasnabad (11.03%) and Sandeshkhali-2 (1.78%). Maximum numbers of other workers are in Jaynagar-1 (62.50%) and minimum in Gosaba (23.92%).

Mainly in Patharpratima block, betelvine is another important cash crop. Cyclone Amphan devastated most of the betel vine leaves during the lockdown (COVID-19) and disrupted the supply chain. Though, most of the working population are engaged in agriculture but in the respect of agricultural field there are less amount of cultivators. Slowly, more people are being engaged with other workfield. Cultivators turn their face from cultivation for low production and less profit in agriculture.

Suggestions-i) Canals should be reformed with the help of government initiative and there should be certain rules to maintain the canals for cultivation. ii) Distribution of the shallow irrigation system, reforms of canal may be executed from the government and to promote the agriculture. iii) After analyzing the nature of climate, crop selection and time of farming should be decided. Need cold storage for surplus crops. iv) As there is no advantage of daily or weekly stock of agricultural production, farmers compel to sell their crops to the middle man at very cheap rate. Often, the farmers show protest pouring their crops on the road. But there are no permanent solution.

3.1) Concluding remarks- We are all know that agriculture is the feeder to the modern and industrial economy. We have to welcome development without compromising the sustainability of agricultural economy for the sake indigenous poor people. By the way, In many developed countries, there are most of the people engaged in agriculture sector. Extensive cultivation can improve the employment opportunities in a region. Though, in Sundarbans, population density is high against the cultivable land but if earning from cultivation can upgrade then unemployment rate in agriculture would be decreased. It is also concluded by analysis from above data, in spite of having cultivable land, farmers show their little interest in cultivation. A big portion of people belong in Delhi for work. Low dearth of agriculture is not only the problem of Patharpratima village but also the problem of India and whole developing countries. If the people gradually turn their faces off to agriculture, villages rather the cities and whole country will confront starvation in future.

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