

# Characteristics of Agricultural Workers in Tamluk Subdivision, West Bengal, India

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**Abstract:** Agriculture is one of the important pillars of the Indian economy. But contribution of agriculture and its allied activities to Indian GDP has been decreasing over the years and also the share of agricultural workers is continuously declining. The rate of decline may be dissimilar in various parts of country but it is true that young people of present generation are less interested in farming. But Tamluk subdivision of Purba Medinipur district, West Bengal experiences differently; a much less change in percentage share of agricultural workers. This subdivision is characterized by a diversified cropping pattern and has the potentiality of agricultural rejuvenation due to its favorable physical condition. In this context the author tries to investigate the present characteristics, problems and attitude of the farmers toward farming so that proper policy can be undertaken to make the people interested in farming.

**Key Words:** Tamluk subdivision, agriculture, cultivators, labors.

## 1. INTRODUCTION:

From the era of economic development, agriculture has been one of the main driving forces of economic growth of India. It supplies raw materials to most of the manufacturers, provides employment opportunities to millions of Indians, and offers fodder for India's huge livestock. However both the share of agriculture and its allied activities to India's GDP is decreasing and also the share of agricultural workers are continuously declining over the years. Though the rate of decline is not equal throughout the country but the role of agriculture has been changed from primary to secondary source of income in many farmers' families. The present generation is no more interested in agriculture. It is the duty of government to investigate the present characteristics, problems and attitude of the farmers toward to farming so that proper measures can be taken in this regard.

Purba Medinipur district of West Bengal is agriculturally much developed, producing good amount of rice, flowers and betel leaves that contribute largely to the States' economy. The census of India 2011 data reveal that share of workers in agriculture has increased marginally (+1.76) in the district as well as in the two southern most subdivisions; Kanthi and Egra. But it has declined in two other subdivisions Tamluk and Haldia. However the decrease was comparatively lower (-1.35) in Tamluk than that in Haldia. In spite of minimum decrease, it has been chosen as study area because all these three category of crops are cultivated only in this one subdivision.

## 2. OBJECTIVE OF THE STUDY:

The main objective is to understand socio economic characteristics of the agricultural workers and their attitude toward agriculture.

## 3. METHODOLOGY:

The study is based on both secondary and primary information. Secondary information has been collected from Census of India (2011) C.D. and District Statistical Handbook (2010-11) C.D. Primary information regarding literacy, family number, monthly income etc. have been gathered through the field survey in all blocks of the subdivision. There are seven blocks in the subdivision. The sample villages were selected randomly from the list of moujas that have diversified cropping pattern. 20 agricultural households from each block have been surveyed to understand the socio-economic conditions, expectations and hopes of the farmers of this area. Thus the whole work has been divided into two parts. The first part deals with secondary data and second part deals with primary data.

## 4. LOCATION AND PHYSICAL SET UP OF THE STUDY AREA:

**Administrative set up:** Tamluk – the second largest subdivision consists of 6 Police Stations, 7 Community Development Blocks, 7 Panchayat Samitis, 82 Gram Panchayats, 852 mouzas, 2 municipalities and 11 census towns (District Statistical Handbook, 2014). The seven blocks are Tamluk, Sahid Matangini, Panskura, Kolaghat, Moyna, Nandakumar, Chandipur. The head quarter of the subdivision is situated at Tamluk Municipal town in Tamluk Community Development Block.

**Location:** The latitudinal extension of the study area is from 21°54'N to 22°N and the longitudinal extension is from 87°38'E to 88°11'E. It is bounded by river Rupnarayan in the east, Ghatal Subdivision of Paschim Medinipur district in the north, Paschim Medinipur district in the west and Haldia and Egra Subdivision in the south.

**Physiography:** Physiographically the study area belongs to alluvial plain formed by the function of three rivers namely – Rupnarayan, Haldi and Kangsabati. The average elevation is within 5 to 7 meter above mean sea level. Average slope ranges from 0-5 degree.

**Climate:** The climate of the district is tropical and characterized by hot and humid summer, abundant rainfall in monsoon and moderate winter. Average temperature varies from 25.5<sup>0</sup>C to 38.6<sup>0</sup>C. Rainfall mainly occurs during the monsoon. The normal rainfall is 1752.6 mm.

**Soil:** The study area is dominated by loamy clay soil. The soil is slightly saline in Chandipur Block only.

## 5. MAJOR CROPS CULTIVATED IN THE STUDY AREA:

Principal crop of the study area is rice. Rice in the study area is grown in approximately 67072 hectares of land covering about 87% of net cropped area (District Statistical Handbook, Purba Medinipur, 2012-13). Mainly two types of rice are cultivated- Winter Rice (*Aman in local language*) and Summer Rice (*Boro in local language*). *Aman* winter is the main rice growing season in the country as well as in the study area and it is highly dependent on the south-west monsoon which occurs from June through September. The winter rice sowing takes place between June–July and harvesting is between November and December. *Boro* or Summer Rice cultivation is characterized by sowing in December-January and harvesting in March-April. Earlier, it was cultivated in low land pockets during post monsoon season to take the advantage of the residual water in the field after harvest of *Aman* rice. But after the green revolution, it is produced in most part of the study area with the use of high yielding varieties (HYV) seeds, irrigated water and chemical fertilizers. Cultivation of this crop is also profitable for the farmers from the commercial view point. While *Aman* rice is being cultivated in all parts of the study area *Boro* is cultivated in selected part having the facility of irrigation at large scale.

This subdivision is famous for cultivation of betel leaves and different types of flowers. Betel leaves are produced in all blocks except Kolaghat and Panskura where flower is produced in abundance. The cultivation of betel requires extra care and attention. Farmers grow it in a greenhouse made up of bamboo and covered from all sides by mats of dried coconut leaves where they can maintain humidity of 40-80 percent, and temperature between 15<sup>0</sup>C and 40<sup>0</sup>C. Betel cultivation is both capital and labour-intensive. Betel leaf garden requires construction and maintenance of the greenhouse known as *boroj* in local language and also frequent watering, plucking of leaves and application of fertilizers and pesticides at a desired level. Different types of betel plants such as *Kalidhal*, *Bangla*, *Sanchi*, *Mitha* are cultivated in the study area, average life span of a betel plant is about 5 years or more.

Presence of clay loam and loamy soil along with high to medium land (*Kala land* in local language) are the main favorable factors for the development of flower cultivation in Panskura and Kolaghat Block. Though different type of flowers are grown in three different seasons of summer, rainy and winter, marigold is the predominant type cultivated throughout the year.

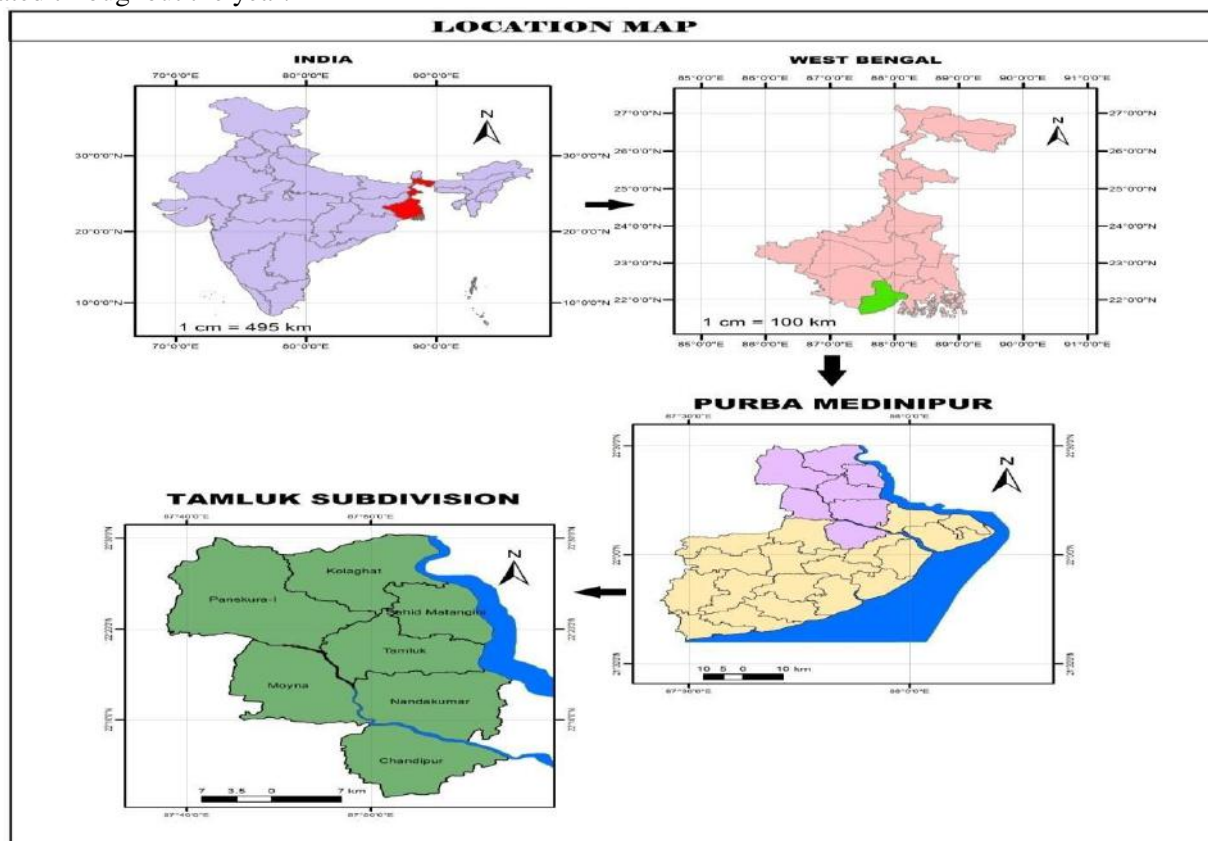


Fig.1 Map of region

## 6. DISCUSSION:

### 6.1 Dependency on Agriculture

According to Census of India -2011, 55 percent of total workers of Purba Medinipur District depend on agriculture for sustenance of life but for Tamluk subdivision it is 49%. However this figure varies from 68% in Moyna to 34% in Kolaghat. On the basis of census data, a table can be prepared showing the dependency of worker on this sector.

<b>Agricultural Workers (%)</b>	<b>Blocks</b>
>60 (High)	Moyna
45-60 (Medium)	Panskura, Nandakumar, Chandipur
<45 (Low)	Kolaghat, Tamluk, Saheed Matangini
Source: Census of India, Purba Medinipur, 2011	

The table shows that dependency of workers is low in three C.D. Blocks namely Kolaghat, Saheed Matangini and Tamluk. It is high only in one block – Moyna and medium in other blocks. If Tamluk CD block other than the Municipality area is considered, it will fall into Medium Dependency Zone. Out of seven blocks, proportion of agricultural workers to total workers is the highest in Moyna (68%), followed by Panskura C.D. Block including Panskura Municipality (54.53%) and Chandipur (54.36%). On the other hand, share of agricultural workers is very low (<40%) in the two neighboring blocks- Kolaghat and Saheed Matangini. These two blocks lie within the 10 kilometer airshed area of Kolaghat Thermal Power Plant. Thus agriculture of this area is much affected by pollution of the power plant, resulting decline of profit or non-profitability, an uncertainty in farming sector. Also easy access to Kolkata, the state capital, made the people more jobs oriented than farming. The poor development of non farming sectors of economy and less scope for pisciculture and floriculture along with high population growth in Moyna, Chandipur and Panskura have made them reliant on farming sector as compared to others.

### 6.2 Predominance of Labour over Cultivators

In India, people engaged in the sector of agriculture can be classified into two main classes –cultivators and labours. Cultivators may or may not be the owner of land but he must supervise the whole farming process. In contrast, agricultural labours are just like other worker who work on another person's land for wages without taking any risk in the cultivation. Majority of the agricultural workers (65%) of Tamluk Subdivision act as labour and the rest are cultivators. *It is the lowest in Kolaghat and highest in Chandipur.* However it is comparatively high (>70%) in the Chandipur and Moyna CD Block which experienced high population growth of >15% in the last census decade whereas it is the lowest (58%) in Kolaghat which experienced lowest population growth (12%) in the subdivision. So high population growth along with fragmentation of land into small holdings, declining profitability in agriculture and selling or conversion of agricultural land may increase the number of labours instead of cultivators.

<b>Agricultural labour (%)</b>	<b>Blocks</b>
>70 (High)	Chandipur, Moyna
60-70 (Medium)	others
<60 (Low)	Kolaghat
Source: Census of India, Purba Medinipur, 2011	

### 6.3 Seasonal character of the workers

On the basis of seasonality of agricultural worker can be classified into two -1) Main and 2) Marginal workers (Census of India, 2011). Main workers engaged for more than 6 months whereas it is vice versa for marginal worker. 74% of the agricultural workers are marginal and the rests are main type. The study area is bestowed with sufficient rainfall in monsoon, so *Aman* (winter) paddy cultivated by monsoon water with little effort and less cost dominates the cropping pattern, due to which majority of the workers are marginal. Share of marginal workers to total workers is the highest in Chandipur and lowest in Panskura.

### 6.4 Characteristics of female workers

In general the dependency of female worker in this sector is a little bit of high. So work participation rate of female agricultural worker is 49.57 whereas for male it is 49.18. However all the blocks do not experience the same. This is true for two blocks namely- Panskura and Tamluk. The ratio of proportion of male and female workers to total workers in Panskura and Tamluk are 50: 65 and 42: 48 respectively. On the other hand gender gap is the highest in (23.56) Chandipur Block and lowest (0.56) in Kolaghat Block. Like male, a good number of female agricultural workers also mainly act as labourers. Percentage share of labour to total female agricultural workers is 75 whereas that of cultivators is only 25%. Out of 7 blocks, proportion of female labour is the highest (83%) in Moyna Block and the

lowest (69%) in Panskura block and thus the difference is only 14%. But unlike the male, female are mainly marginal cultivators and agricultural labours involving in the activity for less than six months. This is because women's primary duty is confined within the household. For financial reasons they have to work, in addition to their domestic responsibilities, and are hence they are marginal worker not full fledge worker. The percentage of Main female cultivators is the highest (21.77) in Tamluk and lowest (9.48) in Chandipur, so the difference is 12.27 points. One point that must be remembered is that the difference between proportion of cultivators and agricultural labour and that of main and marginal labour is always higher for female than male.

Grade	Female Workers (%)	Blocks
High	> 60	Moyna & Panskura
Medium	30-60	others
low	< 30	Saheed Matangini

Source: Census of India, Purba Medinipur, 2011

### 6.5 Ownership of the land

Like other parts of India, study area is dominated (79%) by marginal and small farmers. Small farmers are those who own 1 to 2 hectare of land. The percentage of small farmers is more or less even in all the blocks ranging from 3.23% in Tamluk and 6.53% in Panskura. The percentage share of Marginal Farmers possessing <1 hectare of agricultural land is the highest (84.98) in Kolaghat block and lowest (50.19) in Chandipur (As per Agricultural Census 2010-11). Share of marginal farmers remain above subdivision average in the densely populated blocks of Tamluk, Sahid Matangini, Kolaghat and Moyna. It must be stated average size of holding in the district is 0.53 hectare and it will further decrease with the infinite subdivision of the land holdings (District Statistical Handbook, 2014) by virtue of inheritance laws through which land belonging to the father is equally distributed among his siblings. In this way the holdings become smaller and more fragmented with each passing generation. This fragmentation of the holdings is one of the main causes of low agricultural productivity and backward state of agriculture in most part of India

Block	Bargadars	Patta holders	Small farmers	Marginal farmers
Tamluk	6.85	3.48	4.69	84.97
Sahid Matangini	3.44	12.74	5.41	78.41
Panskura	9.09	15.76	6.53	68.62
Kolaghat	4.99	5.50	4.53	84.98
Moyna	8.02	6.04	4.89	81.06
Nandakumar	11.01	14.03	3.89	71.07
Chandipur	24.38	22.20	3.23	50.19
Subdivision	10.07	11.16	4.79	73.98

Source: District Statistical Handbook, Purba Medinipur 2014

Bargadar lawfully cultivates the land owned by another person. He is not the family member of the landowner. He/ She shall have to give the requisite share of the crop cultivated by him/her to the landowner. Tamluk subdivision has 10% of cultivators as bargadar. Share of bargadar is exceptionally high in Chandipur block and lowest in Saheed Matangini.

Pattadar is a person who owns land from government through patta which is basically a revenue record. It is an extract issued from the *Register of Land* holdings maintained, usually at the office of the *Tahsildar*. This is issued in the name of the person or persons in whose name the records relating to the holdings are maintained.

**Information from primary sources:** Besides the above information, there is much information for which data is not available. So the researcher has to collect through the interview of farmers in the year 2015-2017.

### 6.6 Number of family members

Number of family member is important because it is an indicator of changing agrarian society. Most of the families are small family with 3 to 5 members. The main reason behind the low number is breaking of joint family system and migration of male people to other localities in search of jobs. Only 19 percent of the families have more than 6 persons. They are mainly joint families cultivating paddy.

Number of members	% of families
3	22

4	29
5	23
6	8
>6	19
Total	100
Source: Sample Survey	

### 6.7 Age –Sex structure of workers

The table shows that 40-60 years age group is the main working group in this sector. The percentage of worker belonging to the 1<sup>st</sup> age group of 14-25 is minimum because, most of the persons belonging to this group are students. So they are engaged in pursuing their studies. Another important fact is that the share of women workers in the 40-60 age groups is greater than their male counterpart. It may be due to engagement of male persons in other sector of economy (Source: Sample Survey).

Age Group	Male (%)	Female (%)
14-25	8.77	2.27
25-40	35.09	36.36
40-60	45.61	54.55
>60	10.53	6.82
Total	100.00	100.00
Source: Sample Survey		

### 6.8 Level of Education

With the introduction or use of modern technology it is assumed that higher level of education can encourage the farmers to adopt new techniques in agriculture. Higher education also brings confidence and self-esteem within the farmer. Majority of the workers have primary to upper primary (class V to VIII) level of education. Only 5% of workers have college level degree. No women farmer has college level degree. < 10% of both male and female workers is illiterate and they are mainly senior citizen farmers.

Level	Male (%)	Female (%)
IL	7.14	6.06
Up to IV	17.86	30.30
V-VIII	33.93	48.48
IX-X	16.07	9.09
XI-XII	19.64	6.06
College level	5.36	0.00
	100.00	100.00
Source: Sample Survey		

### 6.9 Ration Card Status

4 % of the sample families belong to Antoyadaya card holder, 11% are BPL card holder and the others live above poverty line. However 57% of the sample families have MGNREGA job card.

### 6.10 Monthly Income

25% of sample families belong to first category and they are either the labour or sole rice cultivator. The percentage share of families belonging to highest income group is 6 and they either cultivate both rice and commercial crops or they have other source of income excepting agriculture.

Monthly Income (Rs)	% of Family
<5000	25
5-10,00	34
10-20,000	20
20-30,000	15
> 30,000	6
Total	100
Source: Survey Sample	

### 6.11 Access to agricultural loan

With the increasing cost of cultivation, many farmers need agricultural loans. There are different types of credit in India. It may be short term, long term or medium term. Loan is given both for productive and non productive purposes. Productive credit is given for purchasing land, equipment and for marketing. Non-productive credit are used for personal expenditure such as loans for expenditure on marriages, religious ceremonies etc. Generally paddy cultivators do not take loan as according to them income from cultivation is nearly equal to the expenditure associated with the cultivation. But farmers cultivating highly profitable seasonal flowers like *chrysanthemum*, *gladiolus* etc or *betel leaves* take the risk of borrowing loan either from nationalized bank or co-operative bank. Generally 30% of the sample families have taken loans for cultivating.

### 6.12 Use of fertilizers

Fertilizers are simply plant nutrients applied to agricultural fields to supplement required elements found naturally in the soil. Thus it promotes healthy growth and development of the plant and ultimately helps in increasing yields. Generally *Aman* paddy cultivation does not require much fertilizer, so few people use it if required. But as *Boro* paddy use HYV seeds so all the farmers apply fertilizers and they normally use chemical fertilizers having nitrogen, phosphorus, and potassium like DAP, Ammonia, Urea, 1026 etc. They know that use of organic fertilizers is beneficial but as it takes enough time to be effective, so they opt for chemical fertilizers. But 90% of betel cultivators and flower cultivators either use organic fertilizers or a combination of organic and chemical fertilizers to maintain the quality of product.

### 6.13 Use of Seed

Seed is a basic input for attaining higher crop yields and sustained growth in agricultural production. 70% of respondents use HYV seeds for *Aman* cultivation whereas *Boro* paddy cultivation is based fully on HYV seeds. Important traditional seeds used by local farmers are *Kumorsal*, *Lathisal*, *Kabiraj*, *Barsha*, *Patnai*, *Lalat*, *Durga* whereas some HYV seeds are *Jaya*, *Ratna*, *1008*, *1018*, *Mali4* for *Aman* and *IR8*, *IR 36*, *1026*, *Super sankar* for *Boro*. 40% of flower cultivators use traditional seeds taking from not only different local nurseries but also from other districts like Haora and Nadia. Some flower growers prepare their own seed.

### 6.14 Access to technical advice

Survey reveals that 99% of respondent farmers are not aware about different government scheme such as foreign direct investment (FDI), Direct Cash Transfer, Rashtriya Krishi Vikas Yojana, Gramin Bhandaran Yojana, National Agriculture Insurance Scheme, Agriculture Technology Management Agency, Gramin Beej Yojana etc. Many farmers know about the Kishan Credit card but there are very few (5%) who have the card. This is due to lack of their communication with panchayat and block level employee of agricultural department. Only 1% of sample farmer has a good bonding with the staff and they have mainly higher school education degree. Due to lack of coordination they have no idea about the present trend of market, so they cultivate on the basis of their own experience and many a time face enough monetary loss. This is mainly applicable for the farmers cultivating crops other than rice. Farmers also lack in motivation. Some farmers consider that though they have the required knowledge but they don't have the courage of changing from traditional to non traditional crop because of chances of failure. In this case government should come forward to encourage them.

### 6.15 Environmental awareness

In spite of technological development, agriculture in India is still dependent on natural environment. All workers, irrespective of their educational level, are aware about recent changes in the weather. According to them the main environmental problem is increase of average temperature followed by abnormal behavior of rainfall. Higher temperature above normal leads to different types of diseases in plants, mainly betel and flowers as they are very sensitive about temperature. Fertilizer can harm the environment if not used correctly. So before the application of fertilizers, farmers must know the nutrients deficiency character of the soil so that proper fertilizer can be applied and in proper amount. They all are also aware about the deterioration of soil quality due to regular application of chemical fertilizers but still they opt for chemical fertilizers instead of organic manure as the latter takes more time to become effective. 85% of farmers apply fertilizers at a higher dose than before after taking advice from fertilizers shop owner not from agriculture experts. 56% of the farmers use pesticides on a regular basis but other use it, only when required.

### 6.16 Perception about farming

About 90% of the respondent farmers are very much frustrated about farming. Poor income, uncertainty of profit, much stress and gloomy future are the main reasons of their frustration. There are very few families (10 out of 140) that are solely dependent on agriculture and the rests are taken it as secondary source of income. Around 75% of respondents surveyed agreed that they don't want to leave their land uncultivated, following the same tradition like forefathers. That is why they are still continuing with paddy or vegetable cultivation as it meets their own demand.

From the field survey it also has been established, that many young people have migrated to other states in search of non-agricultural job as they think they would earn more than that from agriculture and even in younger age than their parents. But many of them want to return their homeland at relatively older age to start a new life through cultivation of the ancestral land.

## 7. CONCLUSION:

In a nutshell it can be said, the farmers of Tamluk Subdivision are mainly small and marginal farmers cultivating mainly rice for their own sustenance. They are characterized by low level of education, low level of income, lack of modern approach. There are some families who cultivate betels and flowers with much satisfaction but most of the farmers are engaged in cultivation only to meet their own demand. But the region has great possibility of upliftment if their perception and hence approach to agriculture can be changed. They still rely on the traditional crops and knowledge gathered from their ancestors. It is the duty of government official to change their attitude towards agriculture not only as a source of income but as a source of revenue. Continuous efforts are necessary at grass root level to encourage the farmers to adopt new techniques and approaches to carry out farm operations precisely and to economize the agricultural production process.

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