

FIELD REPORT
ON
“SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACT OF
FLORICULTURE IN KHIRAI VALLEY, PANSKURA, PURBA
MEDINIPUR, WEST BENGAL - A CASE STUDY”

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PREFACE

Floricultural activities have an important role in Socio-Economic development. Now a days due to the rapidly increasing the floricultural activities, When the floricultural activity rapidly growth then the other cultivation is decreasing but no everywhere because flower is cultivated in suitable monsoon type season in India as well as the India in West Bengal. The present study is an attempt to understand the features of socio-economic development due to the increasing Floricultural activities and its impact on agricultural land with special in Panskura-1 Municipality of Purba Medinipur district Of West Bengal, India the project report has been prepared on the basis of secondary data collected from different source of articles and journal as well as a literature survey.

The entire study has been presented in chapters nine. The first is the introduction of the study area, Objective, methodology, literature review, and description of the study area. The Second chapter controlling factors mainly the physical and cultural factor of the study area and then the third chapter discusses the socio-economic condition of the flower grower's family, Then the final chapter discusses the problems, threats, weakness and suggestion and conclusion.

ABSTRACT

Floriculture is playing a great role in Indian economy. It has big contribution to the economy of a developing country like India but is always subjected to some adverse environmental consequences. Floriculture cultivation is an important sector contributing to employment opportunities, comprising of growing loose flowers mostly for worship, garland making and decoration, traditional decoration for different ceremony, rituals, programs, functions and increasing national income. Mainly this floricultural activity in Kasai River bank region alluvium plain region in Panskura municipality area of East Medinipur district of West Bengal, India is now of national importance for changing the socio-economic status of rural communities. Following the same way, this study has been made on physical background, to clarify the demographic characteristics, to determine the socio-economic status as well as to examine the Floriculture information of the study area by applying secondary data base, also primary data collection and cartographic and statistical methods. The results of the study show that flower cultivation have overtaken other agricultural production at an unprecedented growth rate. Flower based economic activity offered more profitable option than rice or vegetables farming. Mainly through flower base business people earned more and also created a flower-based market place. But the region has faced many environmental problems due to the increasing growth rate of unplanned and unregulated practices of floricultural activity as well as the unscientific use of chemical fertilizers and pesticides, exploitation of water for irrigation process. So, both the government and the local people need to take quick steps to improve the current situation. And also, this study area created an attractive place mainly in winter season around the colorful flowers garden so, here crowded situation also increased time to time and also this situation badly effected on flower garden. So, the government need to take some restriction rules to improve the current effected situation.

Key words:

Floriculture, environmental consequence, used water proper way for irrigation process, created flower-based market placed etc.

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CHAPTER-I

INTRODUCTION

1.0 INTRODUCTION:

Floriculture is the important commercial economy of the agricultural sector. In its early stage of development, floriculture used to be practiced in combination with agriculture along infertile banks of river Kasai and Khirai. Later the practice gradually spread over the neighboring two Blocks namely Panskura I and Kolaghat (Formerly Panskura II) have emerged as important flower growing region of the district, as the farmers become attracted to floriculture due to its lucrative return. Major types of flowers produced are Merigolds, Asters, Tuberose, Chrysanthemums, Gladiolus, Dahlias, Juhi, Beli etc. Which have large demand in national and international market. This flower-based industry in India is characterized by growing traditional cultivation, comprising of growing loose flowers mostly for worship, garland making and decoration forms the backbone of Indian economy presently. Khirai- A valley of Flower Khirai of DoKanda village, Panskura, Purba Medinipur is highly developed in floriculture. Present study is mainly focused on factors affecting to the Floriculture development in this region.

1.1 Objectives:

The main objectives of this filed study are to find out a hidden, undiscovered things for development the floriculture activity in this region:

- The study aims to clarify the economic development of this area's farmers.
- This study also seeks to examine the type of soil condition mainly fertile type of soil to growing the flower production.
- It's also determined the relationship between economic condition and social status of study area.
- Understand the different way to developed flower-based business, economic growth of those region farmers.

1.2 Limitation:

These field survey have some limitation to data collection this are-

- ❖ Whole study is based on primary data source.
- ❖ Insecurity limiting access to the population of concern.
- ❖ Lack of details study on this topic previously.
- ❖ Time of the door-to-door survey much of people don't cooperate properly form giving their information.

CHAPTER II

Literature review:

Ananya Sahu, Soumendu Chatterjee and Ashish kr. Paul (2011), Before 1990 Percentage of floriculturist among the farmers was negligible but now more than 70% of the farmers in Panskural and Kolaghat Blocks are practicing flower cultivation along with paddy. This tremendous growth of floriculture in these two blocks has strengthened the economic base and quality of life of the farmers. The impact of floricultural growth on income, educational achievement and use of sophisticated goods among the cultivators. Floriculture industry should be built up. Because it is one of the expanding and dynamic enterprises in India. Commercialization of the marketing strategies, extraction of colors, essence of them using the various chemical substances obtainable from flowers etc.

Ayan Kumar Maity, Chandralekha Bandyopadhyay and Saunava Manna (2021), Floriculture is the important commercial economy of the agricultural sector. It includes production processing and marketing of all flower (Kodama, 2012). About 50 nations are actively engaged in floriculture 2011 254 thousand hectares area was modern cultivation in floriculture in India. This industry in India is characterized by growing traditional cultivation. Along the bank of Kangsabati the magnificent varieties of flowers are cultivated which look like multi colors carpet. Also, in Flower Garden shows the inter cultivation of different types of vegetables. Winter season is very much significant as this time very suitable for blooming of flowers. Socio Economic condition of this region is gradually changes through this practice. Ecotourism concept and also women empowerment has high chances to introduce with careful planning of Government and local Administration.

Partha Sarathi Ghosh, Dr. Krishnendu Gupta (2019), Flower being the most important elements of agri-business sector are cultivated by all the people irrespective of caste, class and religion. When the flower cultivation practice starts and the farmers are understanding that flower-based industries are grow rapidly than other types of Agri-based industry then farmers are cultivated different types of flowers with increasing their flower-based business. Floriculture is an emerging industry in west Bengal with very high prospects and is a sunrise industry in the state. Therefore, they are able to invest big amount to apply different kind of inputs in order to raise the net value of flower per acre of gross flower area.

Dipankar Biswas, R. Sarkar (2022), Farmers livelihood is deeply rooted in marigold floriculture, alleviate rural poverty, provide job opportunities, regular income, and food security. The study presents how farmer's lifestyles and livelihoods affect this ornamental flower cultivation. Entertainment factors partially mediate the positive relationship between economic factors and marigolds, and they fully mediate the negative relationship between economic factors dampen the positive relationship between economic factors and marigold floriculture, and at the same time, social factors strengthen the positive relationship between economic factors and entertainment factors. The socio-economic impacts vary in groups- moderators one groups- moderators: one group of farmers cultivating irregularly per year gave importance on social sides, and the other group who grew them regularly benefitted in the economic field. Besides, the whole marigold farming system is controlled by the effects of continuous cultivation years and farmers' farming knowledge.

Saikat Mukharjee, Chitrasena Padhy, Nibedita Mishra, Payal Mishra, Ashutosh Nayak and M Pranavasri (2023), Flowers are significant in Indian culture. In India, floriculture is a traditional kind of agriculture with enormous potential for helping small and marginal farmers to established lucrative side businesses. It has been successful agri-business in recent years, both in Indian and internationally. Through precision farming has an important role in the agricultural and horticultural sector, but due to the high cost of the technological advanced. In 2018, India held a 0.40 percent share of the global export Market for floriculture activities, which may be attributable to shortcoming in upholding international quality standard, a lack of adequate integrated cold chain management procedures, an unorganized market, and improper distribution channels (Anumala and Kumar, 2021) West Bengal has been counted as number one in cut flower production and Tamil Nadu has been counted as number one in loose flower production (Vahoniya et al,2018).

CHAPTER-III

3.0 About Khirai valley:

At Panskura-1 municipality Kansai River bank region near DoKanda village, Khirai flower garden is called the '**Valley of flower**'. Located at $22^{\circ}55''$ N- $87^{\circ}30''$ E. It covers about 2,500 acres. It is well connected by roads as well as the southeastern railway line. The farmland is located in East Midnapore district between Khirai and Panskura station. There is a small river that rise on the fringes of the Chhota Nagpur plateau in Bengal, the Kasai is not a perennial river its bed has dried up in many places. Instead, there are stretches of alluvial soil.

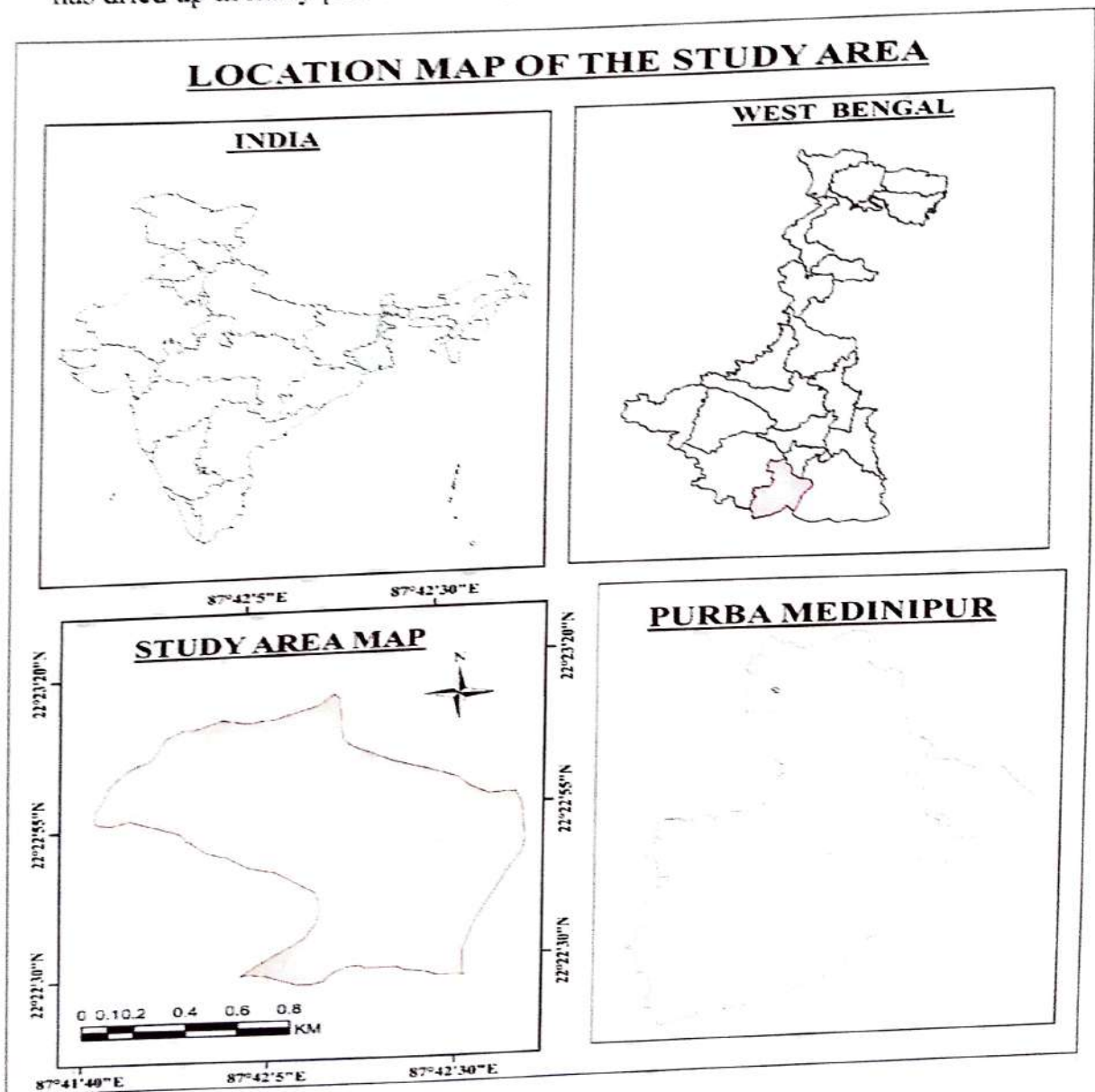


Fig No:2.1 Location Map of Khirai valley, Dokanda village

CHAPTER-IV

DATA BASE AND METHODOLOGY

4.1 Sources of Data:

The data base is one of the most important tools for any study. For collection of any data base, primary and secondary data sources have been needed. The study based on different primary and secondary data to help understanding the socio-economic factor of floriculture activity.

4.1.1 Secondary data Source:

- ❖ To understand the physical and natural factor to development the floriculture activity of the study area literature review has been done from different book, articles, research paper etc.
- ❖ Also study the previous survey work from different articles and web pages to understand time to time socio-economic growth of flower growers.
- ❖ Secondary data also help to known the history of growth rate of floriculture.
- ❖ With the help of secondary data mainly census data help to compare to the present data so find the difference between past and present time data.

4.1.2 Primary Data Sources:

- ❖ Intensive door to door survey has been carried out covering total 40 household at Kansai River bank area village name is DoKanda of Panskura municipality, Purba Medinipur in West Bengal.
- ❖ Mainly this survey was covered by flower growers' family near the Kasai fertile river bank region.
- ❖ Mainly door to door survey most of the family members help to collection primary data accurately.

4.2 Methodology:

Objective-wise methodology of field report are-

1. The study aims to clarify the economic development of this area's farmers.

The methods of data collection

- ✚ Primary data collection through the questionnaire.
- ✚ Statistical data of monthly income of family.
- ✚ Secondary data collection from different census handbook.

2. This study also seeks to examine the type of soil condition mainly fertile type of soil to growing the flower production.

The methods of data collection

- ✚ Primary data collection through the questionnaire.
- ✚ Secondary data through the different source of data.

3. It's also determined the relationship between economic condition and social status of study area.

The methods of data collection

- ✚ Primary data collection through questionnaire.
- ✚ Secondary data collection from different website, book, journal, and articles.
- ✚ Cartographic and statistical method for data analysis.

4. Understand the different way to developed flower-based business, economic growth of those region farmer.

The methods of data collection

- ✚ Primary data collection through questionnaire.
- ✚ Secondary data collection from different website, book, journal and articles.

❖ House-Hold Survey:

At first primary data through intensive door to door household survey with the help of structured questionnaire.

To fulfill the objectives of the study, data on socio-economic factors (level of education, Occupation, Income, expenditure pattern, types of growing flowers name etc.) were collected Khirai valley region of Panskura municipality in West Bengal.

❖ Cartographic and Statistical Analysis:

- I have compiled all the primary and secondary data and tabulate the data to prepare master table. After that analyzed data for preparation of diagram and subsequent analysis.
- Statistical analysis has been done. We have drawn some cartogram by suitable cartographic techniques.
- Map of study area has been done by Arc-GIS 10.3 software.

❖ Sex ratio

The **sex ratio** is the ratio of females to males in a population. Sex ratio has been carried out by using this formula

$$\text{Sex Ratio} = \text{Female Population} \div \text{Male Population} \times 100$$

❖ Literacy Rate

Literacy rate is defined by the percentage of the population of a given age group that can read and write. Literacy rate has been calculated by following formula

$$\text{Literacy rate} = \text{No. of Literate population} \div \text{Total population} \times 100$$

❖ Dependency Ratio:

The dependency ratio is a measure of the number of dependents aged zero to 14 and over the age of 65, compared with the total population aged 15-64. This demographic indicator give insight into the number of people of non-working age, compared with the number of those of working age. The dependency ratio has been calculated using the following formula.

$$\text{Dependency Ratio} = [(\text{Total Number of Children under age 14}) + (\text{Total Number of Senior Citizens above age 65})] / \text{Total Number of people from the age group of 15 to 65} \times 100$$

❖ Socio-Economic Status:

Socio economic status of the study area has been calculated on the basis of modified Kupuswamy scale 2021

Modified Kupuswamy scale 2021					
Education of head		Occupation of head of the Family		Monthly Family Income	
Level of Education	Score	Occupation	Score	Income Ranges (Rs.)	Score
Profession	7	Legislators	10	>123,322	12
Graduate	6	Professionals	9	61633-123321	10
Intermediate or diploma	5	Technicians	8	46129-61622	6
HS certificate	4	Clerks	7	30831-46128	4
Middle school certificate	3	Skilled workers	6	18497-30830	3
Primary school Certificate	2	Agricultural workers	5	6175-18469	2
Illiterate	1	Trade worker	4	<6174	1
		Mechanics	3		
		Elementary occupation	2		
		Unemployed	1		

❖ Software used

Arc GIS: It is a geographic information system (GIS) for working with maps and geographic information. It is used for creating and using maps, compiling geographic data, analyzing mapped information, sharing and discovering geographic information, using maps and geographic information in a range of application, and managing geographic information in a database.

❖ MS-Excel:

It's have compiled all the primary and secondary data and tabulate the data the prepare master table with MS-Excel. For the interpretation of data and subsequent analysis we have prepared different diagrams with the help of MS-Excel software.

Primary data collection



Plate No: 3.1 Household Survey



Plate No: 3.2 Marigold Flower's Garden

CHAPTER-V

FACTOR'S CONTROLLING FLORICULTURE

5.0 Mainly two types of controlling factors discussed below:

5.1 Physical Factors

All physical factors which influence on floriculture of Khirai valley are explained in below:

CLIMATE

A) Temperature and Relative humidity

The climate follows a hot tropical monsoon weather pattern. Summers last from mid-April to mid-June with diurnal highs ranging from the upper 30s°C to the mid-40s°C and lows in the low 30°C in the winter. The temperature in Khirai is 15°-28°C, while humidity is 39%. If we are looking for weather in Khirai during Winter season (Dec, Jan, Feb).

Table No: 2.1 Best season for growing of flower

Name of the Season	No	Percentage%
Autumm (Sept, Oct, Nov)	1	2.5%
Winter (Dec, Jan, Feb)	37	92.5%
Spring (Mar, Apr, May)	2	5%

Source: Field survey 2023

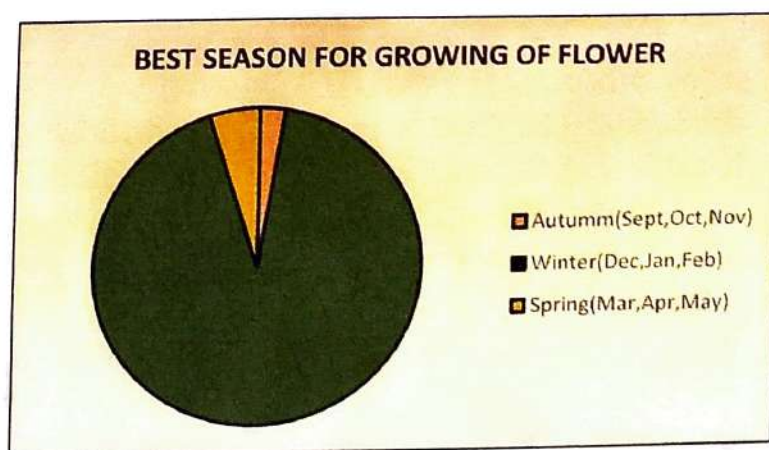


Fig: 4.1 Best season for growing of flower

B) Rainfall

Monsoon rains can last from mid-June to late August with rains from the southeast monsoon. The annual rainfall is around 150mm. In rainy season Kansai River bridge opposite side cultivated crops like: Potato, Nuts, etc.

C) Fog

In winter this area is mostly affected by fog it is too much unfavorable on flower cultivation. Foggy conditions and absence of sunlight restrict solar radiation, resulting in burning of plants. This foggy condition are shows mainly winter season.



Plate No:5.1 Foggy condition in Winter

D) Soil

The soil of the district is mostly Alluvial (77.5%) type, as the district under coastal alluvium and its deposition. Some area has clay soil (22.5%). Soil of this region Consists of different layers like sand, silt and clay. The district is situated on flood plains of the rivers RupNarayan and river Kansai. And therefore, huge amount of clay is dominating in soil texture. Alluvial soil is one of the best soils, requiring the least water due to its high porosity. The consistency of alluvial soil ranges from drift sand and rich, loamy soil to silt clays. This type of Fertile soil are appropriate for the growing floriculture activities.



Table No: 2.2 Type of soil

Soil Name	No	Percentage %
Clay soil	9	22.5
Alluvial soil	31	77.5

Source: Field survey 2023

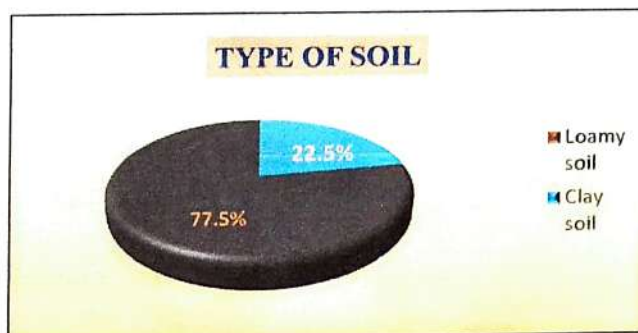


Fig: 4.2 Type of Soil

E) Irrigation system

Kansai (Kansabati) river in Panskura (DoKanda village) is the major sources of irrigation water (82.5%) to the floricultural fields in Khirai Valley of Flower. And also, the (17.5%) are use Wells and Tube-wells and Wells source of irrigation system out of 40 House hold. Mainly in this region River irrigation system highly favorable. Due to the availability of river water.

Table No: 2.3 Type of irrigation system

Irrigation type	No	Percentage%
Rivers	33	82.50%
Wells	2	5%
Tube-wells	5	12.5%

Source: Field survey 2023

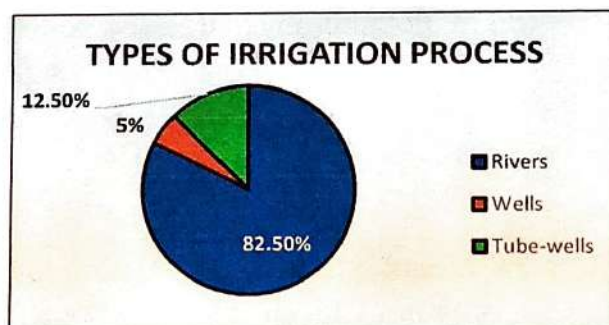


Fig:4.3 Type of Irrigation process

F) Flood

On account of flood with the river Kansai every year the people of that area are victims and they passed their life with very critical condition. On the other side we have found with their explanation in the other season like winter except rainy reason they cultivate huge flower and vegetables from flood deposited alluvial soil. Flood is a natural hazard situation some it creates suddenly and end after few days.

5.2 Cultural Factors

A) Market

The farmer near the Kansai River bank region supplies their flowers daily in **Howrah Mallik ghat** and the **Kolaghat** market respectively. They transported it through local train from Khirai Station regularly. They plucked the flowers just before the previous day in the afternoon. In the market they sell the flowers in the two ways like loose flowers and Garlands at the cost of Rs.8/kg (loose flowers) and Rs.16/kg (as Garlands) separately. In this way they earned 500-1000/- per day and spent their livelihood pattern.

B) Accessibility

The Valley of Flower is well connected by roads and railways. The Farmland is located in East Medinipur district between Khirai station and Panskura station. It is easily accessible by local trains from Kolkata at regular interval. It takes around two hours from Howrah to reach the destination. Mainly the South Eastern railway are good in transportation.

C) Labor

In the Khirai Valley of Flower region or area is more popular area in West Bengal for Floricultural activities. 7 to 8 peoples per ten hector farmlands are cultivated on average. They worked themselves regularly from their own family and cultivation smoothly. They cannot hire any labors from outside. It is their positive outlook. Most of the family in this region engaged these activities.

D) Drainage system

There is a small river that rise on the fringes of the Chhota Nagpur plateau in Bengal and flows through the districts of Purulia, Bankura, East and West Midnapore before losing itself to the ocean. During winter period Kansabati River (Kansai River) water is their main source of floriculture. But during rainy period lands are under regular seasonal flood which is very good sing of such cultivation practice, because fresh alluvium is highly needed for growth of Floriculture. This region also a fertile alluvium plain region so the cultivation practices more easily and highly productive.

E) Inter Cultivation

This study area is so fertile land so here noticed also that they not only cultivate the flowers only cultivate the flowers only in their land but also, they cultivate various types of vegetables like Cauliflower, Pea, Potato, Brinjal, Cabage etc. for full their own needs. They cultivate it only in the winter season with their flower cultivations. On the other hand, they cultivate nut in the opposite side of the rail line duly in summer. They profitable more in this cultivation process. Inter-cultivation is very good support for farmers economic condition due to low risk factor.



Plate No: 5.2 Inter Cultivation

F) Demand and Supply:

The demand for flowers is seasonal as it is in most countries. The demand for flowers has two components: a steady component and a seasonal component. The factors which influence the demand are to some extent different for traditional and modern flowers.

1.Traditional Flowers: The steady demand for traditional flowers comes from the use of flowers for religious purposes, decoration of homes and for making garlands and wreaths. This demand is particularly strong in Kerala, Karnataka, Tamil Nadu, Odisha and West Bengal, as the use of flowers for above mentioned purposes is part of their local culture. The bulk of seasonal demand comes from festivals and marriages. The demand is generally for specific flowers.

2.Modern Flowers: The bulk of the steady demand for modern flowers comes from institutions like hotels, guest houses and marriage gardens. The demand is concentrated in urban areas. With increasing modernization and globalization, the demand for modern flowers from the individual consumers is likely to grow enormously as the trend of “say it with flowers” is increasing and the occasions with call for flower giving will continue to present themselves. Although there is an increasing demand for modern flowers from individuals, institutions continue to be the dominant buyers in the market. The price of these flowers also depends on their demand and varies accordingly.

CHAPTER-VI

HISTORY OF GROWING FLORICULTURAL ACTIVITIES

6.0 History of growing floricultural activities

1. The seeds of floriculture were first planted in Babylonian Times, with the Hanging Gardens of Babylon. A far cry from what is considered modern floriculture involving greenhouses and the nurturing of flowers and other potted plants, the Hanging Gardens were regarded as one of the seven Ancient Wonders of the world.
2. The first greenhouse was built around A.D.30 for the Roman emperor Tiberius. The history of floriculture has grown from there.
3. Through the history of flower production started from 1950 but, during 1990s, floriculture began to emerge as a reliable economic option in Panskura I and II Block of Purba Medinipur District.
4. In its early stage of development, Floriculture used to be practiced in combination with agriculture along infertile banks of river Kasai and Khirai (a tributary of River Kasai).
5. Later the practice gradually spread over the neighboring Block of Panskura I as the farmers become attracted to floriculture due to the lucrative return.
6. Before 1990 percentage of floriculture among the farmers was negligible but now a days more than 70% of the farmers in Panskura I and Kolaghat blocks are practicing flower cultivation along with paddy.
7. Floriculture is an emerging industry in West Bengal with very high prospects is a sunrise industry in the state.
8. Floristry first developed into a business in the Netherlands in the mid -19th century.
9. Sahu et al. (2011) worked on the growth of floriculture and its impact on socio-economic status of floriculturists in a Panskura and Kolaghat blocks of Purba Medinipur.
10. Hans. P. (2012) in his research work title "The position of the marginal and small farmers in the value chain analysis of cut flower chain by examining rent, governance, systemic efficiency between commercial traditional floriculture and its competing main field crops.

CHAPTER-VII

ABOUT THE FLOWER GROWERS

7.1 Age profile of Flower Growers:

According to the field survey, the age group of the flower growers was between (18-30yrs) to (>71yrs) as provide in the bellow chart. It has been observed that most of the flower's growers are belong to the age group of 51-60yrs (30.12%) followed by in the age group of 41-50yrs (25.30%) and 31-40yrs (15.66%), 17% farmers belong in the age group of 18-3yrs and 1.2% farmers belong in more than 71yrs old. So, it can be concluded that middle aged growers perform all types of floriculture activities with flower-based business in the study area.

Table No:3.1 Age Profile of Flower Growers

Age Group	No	Percentage%
18-30yrs	14	16.86%
31-40yrs	13	15.66%
41-50yrs	21	25.30%
51-60yrs	25	30.12%
61-70yrs	9	10.48%
>71yrs	1	1.20%

Source: Field survey 2023

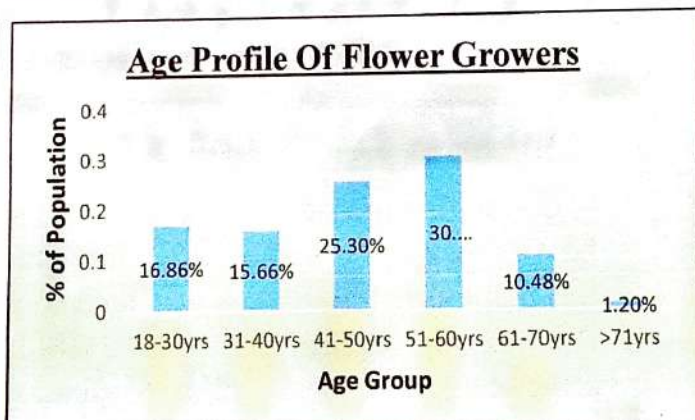


Fig:5.1 Age profile of flower growers

7.2 Family size:

According to the field survey, the study area near the Kansai River bank flower grower's family in DoKanda village have most of the family small in size, because in present modern time all big joint family fragmented into small family, so here 67.5% family is small in size about 40 household. And 32.8% have big size of family where the number of member (5-8) in a family.

Table No: 3.2 Family Size of Flower Growers

Family size	No	Percentage (%)
Small size family (<4)	27	67.50%
Big size family (5-8)	13	32.50%

Source: Field Survey 2023

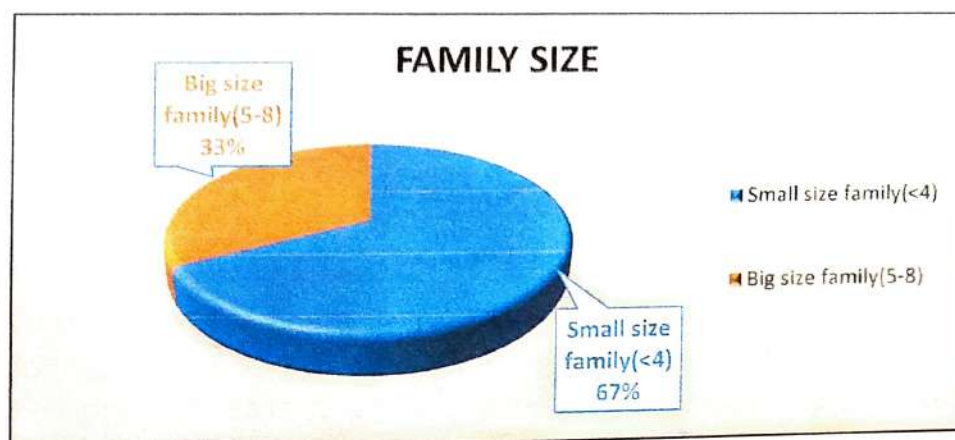


Fig:5.2 Family size

7.3 Number of Land Holding:

Land is the source of livelihood for farmers, which determines the socio-economic conditions of farmers in rural India. The particulars of size of land holding of farmers. There is a positive relation between size of landholding and net value of flower per Bigha of gross flower area. Both variables are proportional to each other. In this field survey 35% family have (2-4) land, followed by 30% family have (4-6) land, 15% family have 6 land, and 10% family have (8-12) land.

Table No: 3.3 Number of Landholding

No of farms group	No	Percentage
2-4	14	35%
4-6	12	30%
6-8	6	15%
8-10	4	10%
10-12	4	10%

Source: Field survey 2023

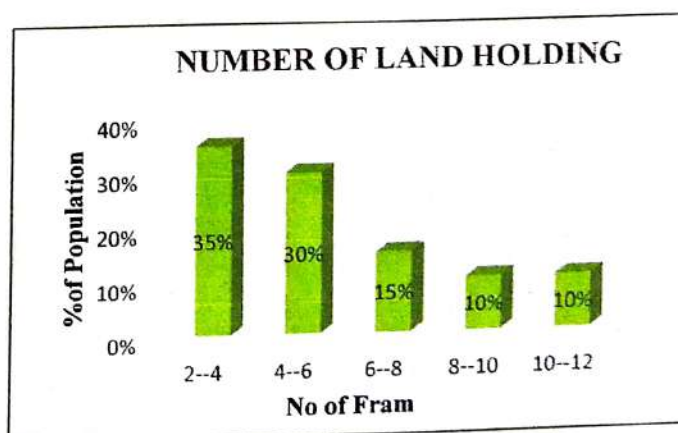


Fig:5.3 Number of Land Holding



7.4 Quantity of Land Holding (Bigha):

According to the field survey in Kansai River side region most of the family have small quantity of land most of the family have 32.5% have (<1 bigha) land, and followed by 28% have (2-2.5 bigha) land, 18% have (1.5-2 bigha) land and 20% flower growers have (1-1.5 bigha), only 2.5% have (2.5-3 bigha) land. They have small quantity of land but this region is an alluvial plain fertile area so they are more profitable in small area. Also, they earned more and developed their social cultural life.

Table No: 3.4 Quantity of land holding (Bigha)		
Land size	No	Percentage%
Less than 1 bigha	13	32.50%
1-1.5 bigha	8	20%
1.5-2 bigha	7	17.50%
2-2.5 bigha	11	27.50%
2.5-3 bigha	1	2.50%

Source: Field Survey 2023

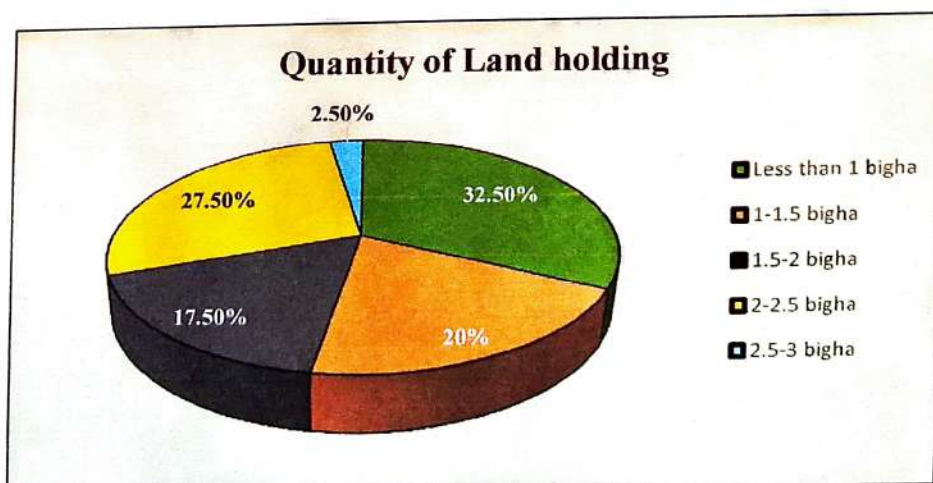


Fig:5.4 Quantity of land holding

7.5 Name of the flower's:

Khirai flower garden is situated in East Midnapur district of West Bengal near Panskura region. It is known as '**Valley of flowers**' of West Bengal. The farm produces some of the best flower mainly winter season like- 26% produced Marigolds, followed by 24% flower growers produced Asters flowers. And Roses (6%), Chrysanthemums (1.33%), Gladioli (12%), Dahlias (18%), other's flowers like Dianthus, Celosia, Cockscombs (12.67%) etc.

Table No: 3.5 Name of the growing flower's

Types of Flowers	No	Percentage%
Merigolds	39	26%
Asters	36	24%
Roses	9	6%
Chrysanthemums	2	1.33%
Gladioli	18	12%
Dahlias	27	18%
Other's	19	12.67%

Source: Field survey 2023

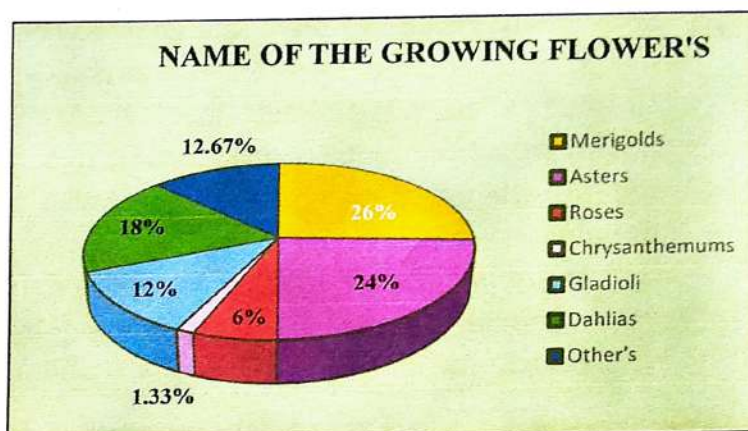


Fig:5.5 Name of the Growing Flower's



Plate No: 6.1 Different types of flowers

CHAPTER-VIII

DEMOGRAPHIC BACKGROUND

8.0 Demographic profile:

Demography is the statistical study of populations, especially humans. It examines and measures the aspects and dynamic population; it can cover entire societies or groups defined by criteria such as education, nationality, religion, and ethnicity. Educational institutions usually treat demography as a field of sociology, though there are a number of independent demography department. These methods have primarily been developed to study human population, but are extended to a variety of areas where researchers want to know how population of social actor can across time through processes of birth, death, and migration. In the context of human biological populations, demographic analysis uses administrative records to develop an independent estimate of the population.

As a rule, in the same country and at the same period, the size of an urban community is much larger than that of a rural community. In other words, urbanity and size of a community are positively correlated. Density of population in urban area is greater. Urbanity and density are positively correlated. So far as urban community is concerned, greater importance is attached to the individuals than to the family. Nuclear families are more popular in urban areas.

A demographic profile is a form of demographic analysis in which information is gathered about a group to better understand the group's composition or behaviors for the purpose of providing more relevant services. The common variables gathered in demographic research include age, sex, income level, race, employment etc.

8.1 Gender composition:

Sex Composition of the human population is one of the basic demographic characteristics; as changes in sex composition largely reflect the underlying Socio-economic and cultural patterns of society in different ways. Near the Kansai River bank region flowers grower family total population 167 with 72 female per 95 adult male and with a sex ratio 132 per thousand males.

Table no: 4.1 Gender composition

Total population	167
Male population	95
Male Ratio	57
Female population	72
Female Ratio	43

Source: Field survey 2023

GENDER COMPOSITION

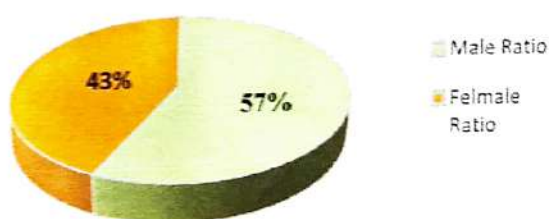


Fig: 6.1 Gender Composition

8.2 Child sex ratio:

In India, the child sex ratio is defined as the number of females per thousand males in the age group 0-6 years in a human population. According to the field survey, in the study areas total child population is 42 and including male child population is 23 and female population is 19. So, the child sex ratio is 1210.

Table No:4.2 Child Population

Child Population	Total child population	Male	Female	Child sex ratio
No of child population	42	23	19	1210

Source: Field survey 2023



CHILD POPULATION

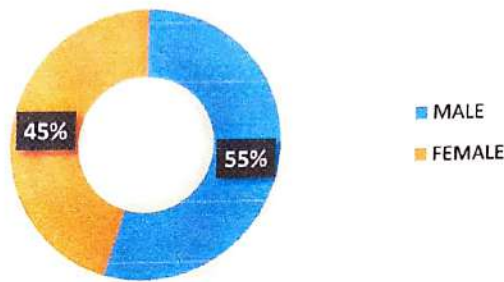


Fig: 6.2 Child Population

8.3 Age composition:

In population studies, age distribution (also known as age composition) refers to the proportionate numbers of people in various age groups in a population. It is common in demography to split the population into three broad age groups: children and young adolescents (under 15 years old) the working-age population (15-59 years) and, the elderly population (60 years and older).

Table No: 4.3 Age-sex composition

Age Groups (yrs.)	Male	Male%	Female	Female%
0-14	12	12.50%	11	15.49%
15-59	71	73.96%	53	74.65%
>60	13	13.54%	7	9.86%

Source: Field survey 2023

AGE-SEX COMPOSITION

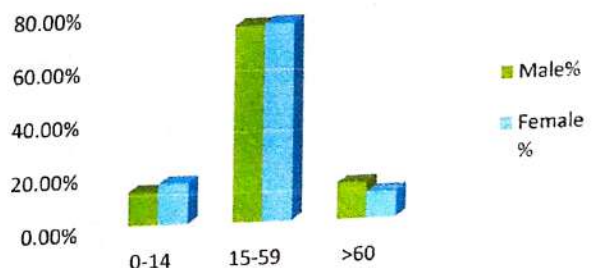


Fig: 6.3 Age-Sex Composition

8.4 Dependency Ratio:

The dependency ratio is a measure of the number of dependents aged zero to 14 and over the age of 65, compared with the total population aged 15 to 64. This demographic indicator gives insight into the number of people of non-working age, compared with the number of those of working age.

In the study area, the population are not evenly distributed according their age group. The maximum population concentrated in middle age group or working age group, i.e., 15-59 years. Which is about (74.25%) the dependent population is about (27.84), which is further classify into two groups i.e., young age group (14.87%) and older age group (12.97%). So, the dependency ratio of the study area is about 35%. That means 35 non-working population depend on 100 working population.

Table No: 4.4 Dependency Ratio

Age Groups (Years)	No of population	Dependent population	Independent population	Dependency Ratio (%)
0-14	23	43	124	34.68%
15-59	1124			
>59	20			

Source: Field survey 2023

CHAPTER-IX

Socio-Economic Status

9.0 Socio-Economic Profile:

Socioeconomic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic access to resources and social position in relation to other. When analyzing a family economic access to resources and social position in relation to others. When analyzing a family's SES, the household income, level of education, and pattern of occupation are examined, as well as combined income, whereas for an individual's SES only their own attributes are assessed. Socioeconomic status is classified into three levels (high, middle, and low) to describe the three places a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and occupation) can be assessed.

Education in higher socioeconomic families is typically stressed as much more important, both within the household as well as the local community. In poorer areas, where food, shelter and safety are major priority, education is typically considered as less important.

Additionally, low income and education have been shown to be strong predictors of a range of physical and mental health problems, including respiratory viruses, arthritis, coronary disease, and schizophrenia. These problems may be due to environmental conditions in their workplaces, or, in the case of disabilities or mental illnesses, may be the entire cause of that person's social predicament to being with.

Socio economic status has been defined as the position that an individual or family occupies with reference to the prevailing average standards of cultural and material possessions, income, and participation in group activity of the community.



9.1 Caste composition:

Caste is a form of social stratification characterized by endogamy, hereditary transmission of a style of life. According to the field survey overall population has been divided into the scheduled caste, Scheduled tribes, General etc. It shows that majority of the population belongs to UR(Unreserved) or General category which is 82.5%. Sc category population is about 12.5%.

Table No: 5.1 Caste Composition		
Categories	No	Percentage (%)
Gen	33	82.5
SC	5	12.5
ST	2	5

Source: Filed survey 2023

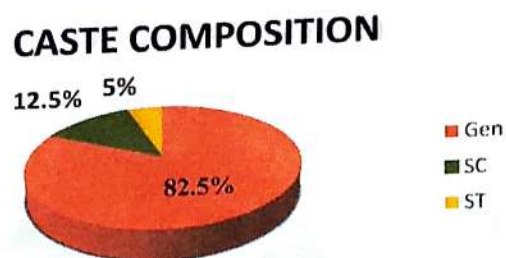


Fig: 7.1 Caste Composition

9.2 Poverty Status:

Poverty is a condition or situation in which a person or a group of people don't have enough money or the basic things like household lacks the financial resources to afford a basic minimum standard of living.

According to the field survey, out of the 40 household in the study area are 65% APL household and 35% BPL category belong in this area. And also shows that from the field survey 35% family belong in low level of poverty status, and their life style also very low level.

Table No: 5.2 POVERTY STATUS		
Poverty status	Number	Percentage%
APL	26	65%
BPL	14	35%

Source: Field survey 2023

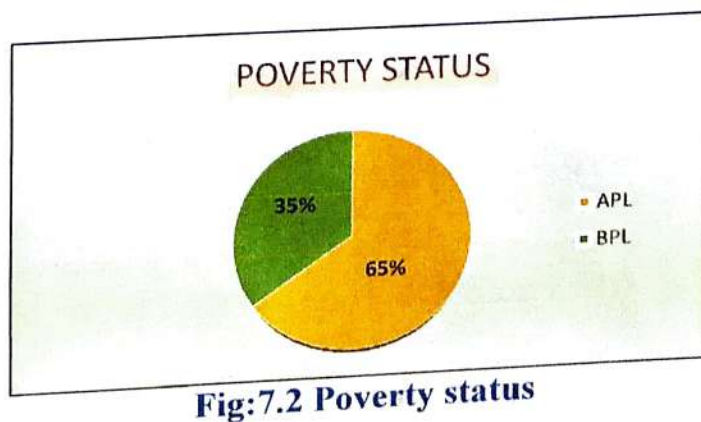


Fig:7.2 Poverty status

9.3 Level of Education:

According to the field survey, a higher population in study area population (37.67%) study area held a Secondary education degree as their highest level of educational attainment compared with all other level of educational attainment. Specially 18% student in the study area had higher secondary degree, compare with 10% of adult who have Bachelor's degree or graduate and 2.05% of adult had a Post graduate degree or higher degree. Around 30% of adult in study area had not completed high school.

Table No: 5.3 Educational Status

Level of education	No	Percentage%
Illiterate	5	3.42%
Primary	38	26.02%
Secondary	55	37.67%
Higher Secondary	27	18.49%
Graduate	14	9.58%
Post-Graduate	3	2.05%
Higher-Education	4	2.73%

Source: Field survey 2023

LEVEL OF EDUCATION

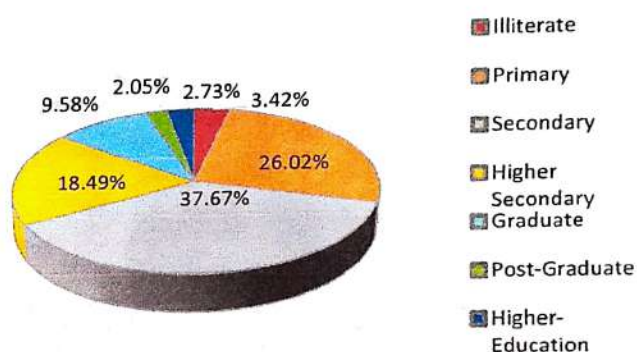


Fig:7.3 Level of Education

9.4 Marital status:

Marital status is the legally defined marital state. There are several types of marital status: single, married, widowed, divorce, separated and, in certain cases, registered partnership. According to the field survey most of the people is married 61% followed by the unmarried people is 28%, widow people are 1.19% and divorce people is 0.98%.

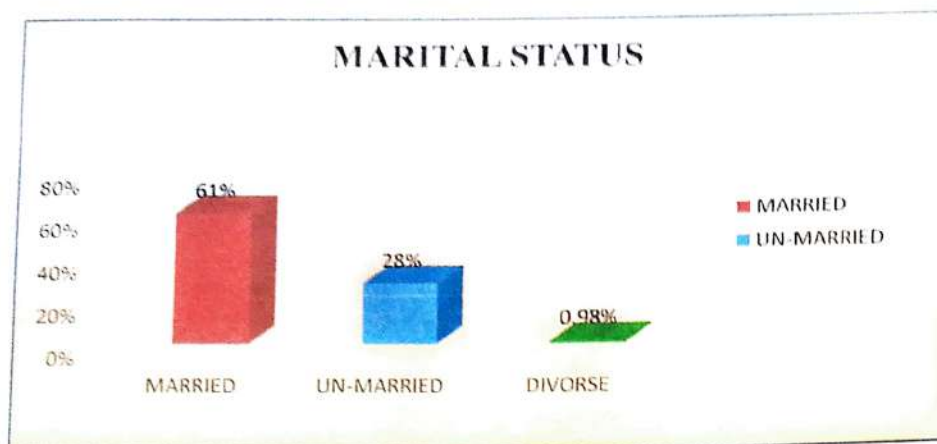


Fig: 7.4 Marital Status

9.5 Age of Marriage:

According to field survey marriage deterministic age limit has divided into 2 parts is less than 20, 21-30, more than 30 and is this deterministic marriage age group also divided two parts one is male and another is female. We can see that the number of female populations is 72, of which 78.43% female population marriage population age below 20, 21.57% female population marriage age (21-30).

We can see that 21.57% female population conscious her marriage age, so they are preferring to delay marriage and another side the number of male populations is 95, of which 75% male population marriage age 21-30, and 13% marriage age is above 30. Overall, we can see that male population than the female population conscious their marriage age. Because this region is a village backward area so female education system is also low level. And it is not good for our society.

Table No: 5.4 AGE OF MARRIAGE

Age Group	Male No	M percentage	Female No	F percentage
<20	6	11.32%	40	78.43%
21-30	40	75.47%	11	21.57%
>30	7	13.21%	NA	NA

Source: Field survey 2023

AGE OF MARRIAGE

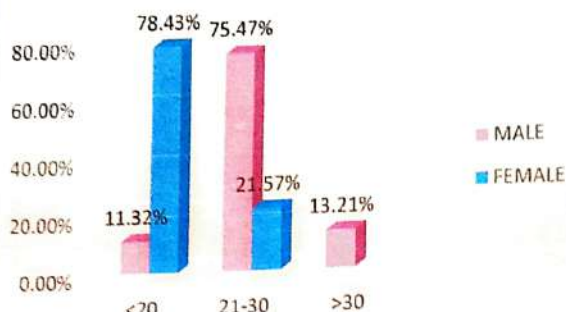


Fig:7.5 Age of Marriage

9.6 Occupation Pattern:

The occupational structure of a nation refers to the percentage of its workforce employed in various economic activities. The field survey in Kasai River bank region flower growers' family also give us data about the occupation. The shows that most of the people are engaged with farming on own land (72.48%) due to the presence of fertile alluvium soil in Kasai River bank region. Some are engaged in private sector (12.84%) and business and tread (5.50%), government sector (1.83%), and some are engaged in skilled wage worker (2.75%), and unskilled wage worker (4.59).

Table No: 5.5 Occupational pattern

Name of Occupation	No	Percentage%
1.Farming on Own land	79	72.48%
2.Skilled wage worker	3	2.75%
3.Unskilled wage worker	5	4.59%
4.Salaried employment in govt	2	1.83%
5.Salaried employment in private	14	12.84%
6.Other trade and Business	6	5.50%

Source: Field survey 2023

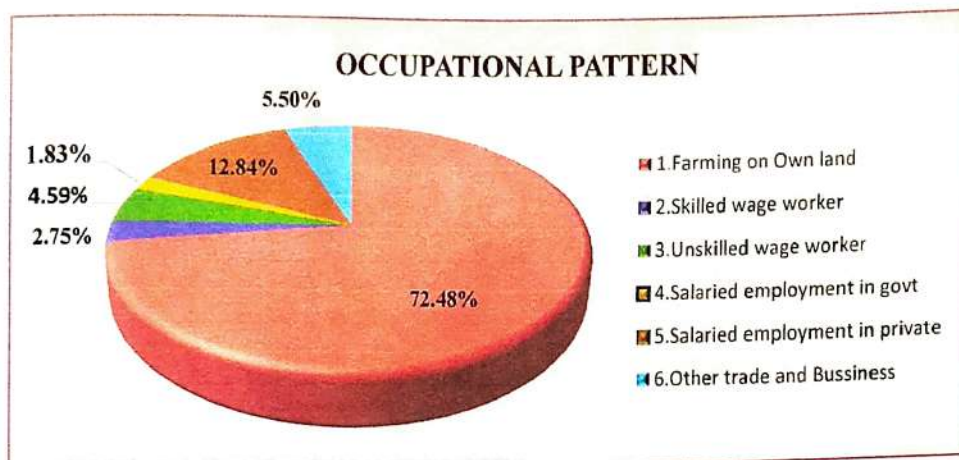


Fig: 7.6 Occupational Pattern

9.7 Monthly income of Flower Growers:

The khirai is valley of flower, mainly Winter season is the best for the flower growth. And the Kansai River bank area people are engaged floricultural activities and earned more. And they spend their livelihood smoothly around 38% people earn Rs. 5000 rupees/month to sell their productive flower. And then 50% family earned 5000-10,000 rupees/month. Around 3% people earning >30,000/month. And the 5% family earned 10,000-30,000/month.

Table No: 5.6 Monthly Income of Flower Growers

Income Group	No	Percentage%
<5000	15	37.50%
5000-10,000	20	50%
10,000-20,000	2	5%
20,000-30,000	2	5%
>30,000	1	2.50%

Source: Field survey 2023

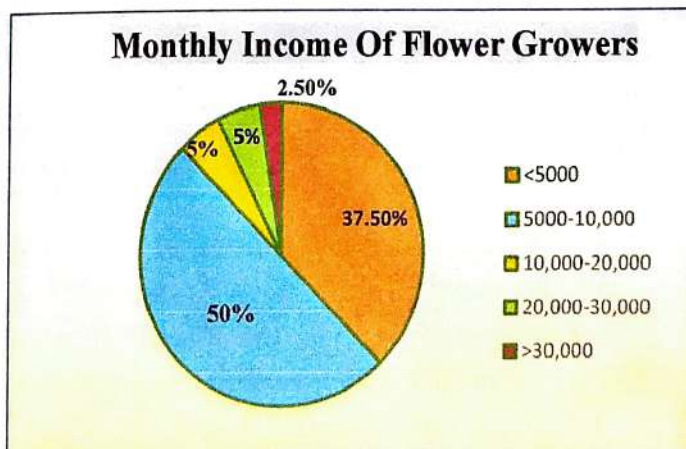


Fig:7.7 Monthly Income of Flower Growers

9.8 Bank Account:

The study area is a village area near the Kansai River bank region village name is DoKanda under Panskura-I municipality. And these areas most of the people are involved Farming activities in their own land (72.48%), so all the flower growers engaged also the business involving flowers to sell their productive flower. So, the percentage of bank account holders (89.1%) in this region because the present time all people are smart in technology mainly online payment system are available but the bank account are dose not present (11%) people according to the survey data.

Table No: 5.7 Bank Account

Bank Account	No	Percentage%
YES	147	89.10%
NO	18	10.90%

Source: Field survey 2023

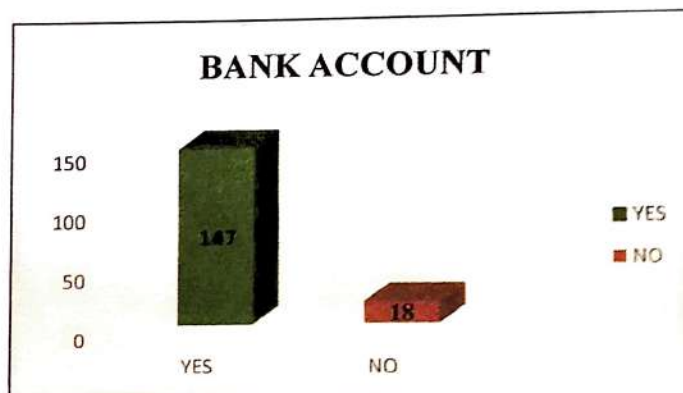


Fig: 7.8 Bank Account

9.9 Socio Economic Status

According to this field survey 40 Household were visited. And then it was observed that, majority 19(47.5%) households belong to lower-middle class, 18(45%) households belong to upper-lower status, 3(7.5%) household are belonging to upper- middle status when the modified Kupuswamy scale was applied. This scale also shows that the study areas Socio-Economic status are moderate not very upper or lower status.

Table No: 5.8 Socio Economic Status (after Kupuswamy 2021)		
Socio Economic Status	No	% of Household
Upper	0	NA
Upper Middle	3	7.50%
Lower Middle	19	47.50%
Upper Lower	18	45%
Lower	0	NA

Source: Field survey 2023

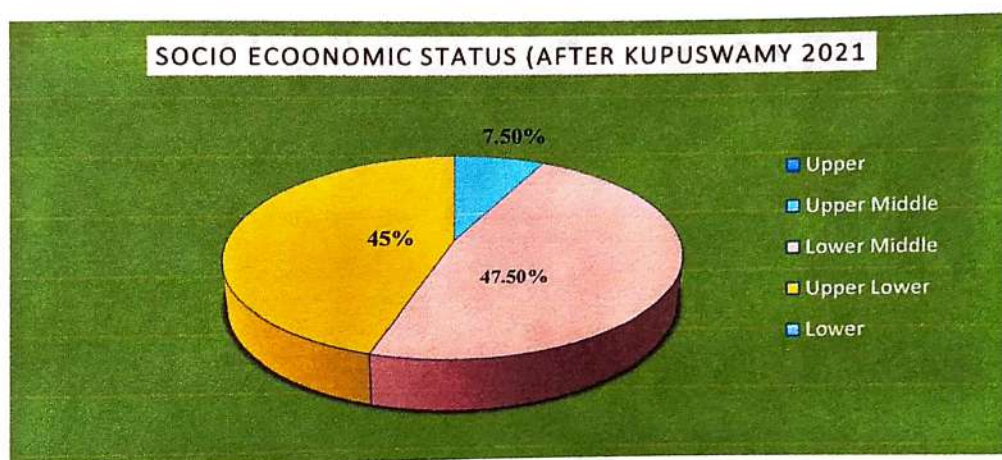


Fig: 7.9 Socio Economic status



Plate No: 7.1 Flower Shop



CHAPTER-X

IMPORTANCE OF FLORICULTURE

10.0 Mainly two types of importance are found they are discussed below:

➤ **General importance of flower:**

- i. Flower increases the aesthetic sense of human being and satisfies demand of heart feelings.
- ii. Its beauty and fragrance give happiness to all irrespective of age and wealth.
- iii. It is the principal component of public functions and anniversaries and also extensively used for decoration.
- iv. Flower is a national symbol, Water lily (white) *Nymphaea nouchali* is the national flower of Bangladesh.
- v. Flower gardening is a good medium of passing leisure time and help keeping good health.
- vi. Flowers help getting out of illness through psychological enchantment.

➤ **Economic importance of flower:**

- i. Flowers can be considered as a commercial commodity. Commercial flower production may be helpful in increased earning of the grower.
- ii. Flowers can be a source of earning huge foreign currency by exporting them.
- iii. Perfume industries can be established in the country which can help improving national economy.
- iv. Establishment of flower production farms and perfume industries can help solving unemployment problem to a large extent.
- v. It provides scope to bring more unused land under flower cultivation.

10.1 STRENGTH OF FLORICULTURAL ACTIVITY:

- Here we found the land is fully newer alluvial which is too much helpful for the flower cultivation.
- Land is depending only through the water supplied from the Kansai River.
- The climate of this area is too favorable which is fully helpful for the cultivation of flowers.
- There we have found that most of the family members are engaged with the flower cultivation.
- Another facility they can enjoy from the nearest local Railway station and Highway. It is a very good sign of high accessibility.

10.2 WEAKNESS OF FLORICULTURAL ACTIVITY:

- ✚ They could not get any profit by selling those flowers except winter season. So, this practice is seasonal in nature.
- ✚ Flower gardens are highly degraded during winter period due to high pressure of visitors.
- ✚ They couldn't help anyway from the government for this cultivation.
- ✚ Ear cutting caterpillar is the most harmful insect to attack it.
- ✚ In winter season many flowers are affected by Fog.
- ✚ Dropout problem is very significant due to early engagement of cultivation field of their wards.
- ✚ There was a great problem we have collected shortly at the time of survey that some people in their place are also engaged with the smuggling flowers to other countries.
- ✚ Poper time irrigation system problem, flooding problem also noticed.

10.3 OPPORTUNITIES OF FLORICULTURE ACTIVITY:

The area is called 'VALLEY OF FLOWER' of West Bengal which we came to know from social media. So many people gathering there for its beauties and they purchase various types of flowers from this area. With that the farmers of these area are get opportunities to earned money.

10.4 THREATS OF FLORICULTURAL ACTIVITY:

- On the other side tourist problem is the biggest threat to them as they destroy various types of flowers unnecessary.
- Poor infrastructure is another threat to the flower cultivators also mainly related to the conservation of flowers like-cold storage etc.
- Last of all we have found that the flowers farmer cultivated the flower on the vested land of railway development of India. In any time, they may loss this cultivation from their life. We think that it is bigger threat to them.
- Poor capital is another threat for farmers.
- No linkage with international and national flower market.
- No training center for such cultivation practice.
- No good industry related to Floriculture.

CHAPTER-XI

MAJOR FINDINGS AND CONCLUSION

11.1 Major Findings:

- 1) From the Field survey we show that and also notice the growth of floricultural activities this region's soil condition is fertile type of alluvial soil (77.5%).
- 2) Mainly flower growing season are winter (December, January, February) when the temperature belongs less than 30°C (15°C-28°C).
- 3) This region field survey also refers to that Kansai River water irrigation process are main irrigation system. Here 82.5% are used river water for Irrigation process, 17.5% family are used tube-wells water.
- 4) To the availability and accessibility, the Railway and Road With the help of local train journey near Khirai station the flower grower's farmer daily supply their productive flowers at Howrah Mallikghat and the near Kolaghat market respectively.
- 5) Most of flower growers age group belong between 51-60yrs (30.12%), and 25.30% farmers are belonging 41-50yrs.
- 6) About 40 household 67.5% family is small in size (<4), Also they have a smaller number of Land 2-4 land almost 35%, 32.50% family have (>1bigha land).
- 7) Khirai flower garden also known as 'Valley of Flower' of West Bengal. In winter season 26% produced Marigolds, and other growing flowers like Aster, Roses, Chrysanthemums, Gladioli, Dahlias, Cockscombs.
- 8) About 40 household have 167 population with 95male population and 72 female population.
- 9) Poverty status are also very low in this area because 65% household are APL card holder and remaining 35% is BPL holder.
- 10) This survey data also indicates that most of the people are educated up to Secondary (37.67%). While analyzing the marital status 61% are married and 28% are unmarried.
- 11) In this field survey area, most of the family and most of the people are engaged in floricultural activity in their own land (72.48%).
- 12) Most of the flower growers (37.50%) monthly income Rs.>5000 and 89.10% member of the 40 household have bank account only 10.90% have not.
- 13) According to the field survey most of the people is married 61% followed by the unmarried people is 28%.

11.2 Suggestions:

Floricultural activity developed around the other types of crops cultivated agricultural land of Khirai valley Panskura municipality inn Purba Medinipur, various problem is noticed in this area and also has been natural environmental pollution in this scenario, suggestions for future socio-economic development given below-

1. Government permission should be obtained for different types of floricultural production practiced.
2. Appropriate training Should be provided to given environmentally friendly agricultural productivity with proper used irrigation system.
3. To make flower cultivation a sustainable enterprise, training camp on all issues encompassing right from nursery plantation to flower farm establishment and post-harvested preservation must be organized on regular basis.
4. Awareness programmed is to be organized to popularize the flower cultivation for its comparatively high return than other traditional crops in domestic markets through seminars, demonstrations, flower shows and exhibitions.
5. The credit and insurance for small growers are highly required. The credit and insurance must cover all the activities ranging from establishment of nursery plantation to marketing.
6. Floral crops are highly sensitive to weather phenomena. Weather aberrations in terms of rise and fall of temperature, humidity etc. is responsible for sudden incidence of pests and diseases in flower farms. To provide instant field guide to flower growers, establishment of field school equipped with resources persons and first aid for treatment of flower plants are very much necessary in the field of floriculture.

11.3 Conclusion:

Under the study of filled survey of Khirai valley near Kansai River bank region DoKanda village area we get information about Physical background, social cultural landscapes also demographic background of the study area from the secondary data, source. Through this study we got information about, almost 40 household or 100% household in the study area are general category, poverty status also low. Most of family engaged in floricultural activities and flower-based business (72.48%). In this field survey also mentioned that in Panskura-1 municipalities near the Kansai River bank region fertile alluvium plain area are densely populated, all of the family have availability of basic things like education system, Gramin health center etc. And all of the flower growers are worked themselves regularly from their own family and cultivation smoothly.

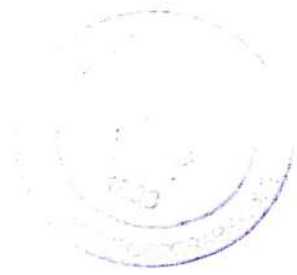
Khirai flower garden region is famous in day by day and it is also called '**The valley of Flower**' of west Bengal. And the winter season are best time to visit to this area due to winter is the best season for growth of productive flower. And this time here also noticed huge crowd situation for the beautiful colorful flower garden and also some flowers-based shop, restaurants fair type situation created here.

Along the bank of Kangsabati the magnificent varieties of flowers are cultivated which look like multi colors carpet. Winter season is very much significant as this time very suitable for blooming of flowers. Socio-economic condition of this region is gradually changes through the practice. Ecotourism concept and also women empowerment has high changes to introduced with careful planning of Government and local Administration. And geographically sustainability of different factors is helpful for development of this region with special attraction.

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SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACT OF FLORICULTURE IN KHIRAI VALLEY, PANSKURA, PURBA MEDINIPUR, WEST BENGAL - A CASE STUDY

Town/Vill:

Municipality/Ward: **Block:**

District: **State:**

1.General Information of the Respondent:

Name: **Gender:**

Age:

2.General household information:

House hold ID: **Gender:** Male/Female

Name of the head (Household).....

Category: Gen/SC/ST/OBC-A/OBC-B. **Poverty status:** APL/BPL

3.Family member Information:

Name (Family member)	Age (yrs.)	Sex (M/F)	Marital Status (M/UM/W)	Age of Marriage	Level of education	Occupation (see codes)	Bank A/C (Y/N)

[Level of Education: illiterate-1, Primary(I-IV)-2, Secondary (VIII-X)-3, Higher Secondary (XI-XII)-4, Graduate-5, Post Graduate-6, Higher Education-7, Others-8.]

[Occupations: Farming on Own land-01, Sharecropping/Farming Leased Land-02, Animal Husbandry-03, Pisci-culture/Poultry-04, Fishing-05, Skilled Wage worker-06, Unskilled Wage worker-07, Salaried Employment in Government-08, Salaried Employment in Private sector-09, Other Artisan (mention)-10, Other Trade and Business(mention)-11]

4. Family Size:

Small size Family (<4)

Big size Family (5-8)

5. Monthly income of Flower Growers:

Income groups (in Rs.)	
<5000	
5000-10,000	
10,000-20,000	
20,000-30,000	
>30,000	

6. Size of Landholding:

No of farms	Size of Landholding (in acre)

7. Type of Soil:

Clay Soil	
Alluvial Soil	

8. Best season for growing of flower

Summer (June, July, Aug)	
Autumn (Sept, Oct, Nov)	
Winter (Dec, Jan, Feb)	
Spring (Mar, Apr, May)	

9. Name of the flower's

Marigolds	
Asters	
Roses	
Chrysanthemums	
Gladioli	
Dahlias	
Other's	

10. Best Temperature for growing floriculture:

15*-28*c (Dec-Jan)	
30*-38*c (Mar-May)	
23*-33*c (Aug-Oct)	

11. Type of Irrigation system

Rivers	
Wells	
Tube wells	

12. Government scheme received (if any mention)

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13. Major problem findings of growing floriculture-

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14. Suggestion for those problem-

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