

## **A research study on impact of technology and infrastructure on the development of Horticulture in South 24 Parganas district of West Bengal.**

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**Abstract:** Our body needs a certain ratio of protein, vitamins and minerals to keep us healthy. We need to eat a lot of vegetables, fruits to meet the needs of these daily essential elements. Cultivation of flowers, fruits and vegetables in scientific manner by creating a garden is called horticulture. Horticulture plays an important role in the economy of West Bengal. The purpose of this study paper is to discuss the impact of modern technology and infrastructure on its development of horticulture in south 24 parganas district of west Bengal. We explained this with the help of some secondary data with the help of nine indicators from 29 blocks of south 24 parganas district (source: District census handbook south twenty four parganas, west Bengal, village and town directory, 2011). All blocks are divided into three main categories in view of development of horticulture. One section is a more developed blocks in terms of horticultural development, blocks with medium developed are opened in another part and blocks with medium minimum developed are kept in the last part. It is evident from the study that horticulture is flourished in blocks that were more infrastructurally developed and where advanced technology was used.

**Keywords:** Technology and infrastructure development, horticulture development, developed marketing system, sustainable horticulture.

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### **I. Introduction:**

Horticulture plays an important role in the economy of west Bengal after foodgrains. West Bengal is the second largest horticulture producer of India (10%, 2021, 51st). West Bengal is a leading producer of low-cost fruits and vegetables. West Bengal is also the second largest vegetable producing state (28.23 m7, 2021-22) of India. South 24 Parganas is the largest district of west Bengal. Area of south, 24 Parganas districts 9960 84.km (source: District - torate of food processing industries and horticulture) Horticulture is cultivated on 79.085 thousand hectares of south, 29 parganas district. Its total population in 81,61,961 in (2011 census) Major fruits and vegetables of south, 24 parganas district are Banana, Guava, papaya, sapota, Mango, pineapple, Jackfruit, litchi (thuits) etc, cabbage, cucurbits, Brinjal, tomato, Ladies finger, radish, cauliflower (vegetables) etc, tuberose, marigold, rose, chrysanthemum, gladiolus (flowers) etc. The production of fruits, vegetables, and flowers are respectively - 155.42, 915-81 (Thousand tonnes), 17-800 (in one lakh tons), 2008-2009, which is very insignificant compared to requirement, to meet the daily food and nutritional needs to this large population requires technological and infrastructure development. By technological improvement we mean improved use of high yielding varieties seeds, adequate irrigation system, use of chemical and Bio-fertilizers and pesticides in a scientific manner, use of tractors, that is, diesel pump machine, sprayer, reaper and it infrastructure improvements we mean large scale agriculture land, educated farmer, improved transport system. developed market, High cropping intensity, availability of land, etc.

No we will discuss how blocks of south 24 parganas district can be improved through technological and infrastructure improvement.

Objectives of the study:

This study paper is prepared for the following purposes:-

- To examine regional disparities in development of horticulture in south 24 parganas district
- To discuss the methods of block level horticulture in, south 24 parganas district
- To investigate causes of disparity in block level horticultural development of south 24 parganas district.

A. Geographical profile of study area:

South 24 parganas is one of the most important districts in the southern part of west Bengal. It is the largest district in west Bengal in terms of area (9960 Sq.km) It is located on fertile alluvial soil.

The location of South 24 Parganas district is 22°46'15.54" North and 88°58'45" East.

It has a very small proportion of urban settlements. A large portion of the district is included in the forests of Sundarban.

Population of this district had 81,61,961 roughly equal to the nation of Honduras. The district had a population density of 819 inhabitants/sq.km. Its population growth rate over the decade 2001-2011 was 18.2%. In 2011 South 24 Parganas had a sex ratio 956 females for every 1000 males and literacy rate 77.51%.

The district of South 24 Parganas spread over the North -

East and Eastern part of the district. Kolkata lies to the North and districts Haor and Purba Medinipur lies to the West beyond the nautical boundary formed by the Hooghly. The Bay of Bengal lies to the South.

The larger portion of the Eastern Side has the international border with Bangladesh. It has 33 police stations, 2042 villages and 7 municipalities. For administrative purposes South 24 Parganas is divided into 29 development blocks.

Its headquarters is Alipur.

The present paper is based on secondary sources of data obtained from the Bureau of Applied Economics and Statistics, Government of West Bengal and District Census Handbook, South 24 Parganas, West Bengal, 2011. The block has been taken as a unit of study. In order to examine the technological modification and infrastructure development of horticulture some variables are taken into consideration.

For analyzing the district score has been used to arrive at a general level of horticulture development for the blocks of the district. For

the score Smith has given a formulae:

$$Z = \frac{X - \bar{X}}{s}$$

where-

Z - standardized value of the variable of the block. a

X - Actual value of the variable in the block - a

$\bar{X}$  - means value of variables X in all blocks

s - standard deviation of variables X in all blocks.

In order to assess overall level of agricultural development the block wise result of Z score obtained for all indicators are added and the average is taken out for these indicators which is known as composite scores.

Table -1 list of selected variables of horticulture development:-

A1 % of cultivable area to total area

A2 % of irrigated area to total cultivable area

A3 % of cultivations of total population

A4 % of main workers

A5

% of Agricultural Labourers to total population

A6

% of literacy rate of the total population

A7, % of transport communication facilities

A8 % of availability of loan from Agricultural credit society

A9 % of availability of bank

source: District census Handbook, South 24 Parganas. Zone

## 1 Result and Discussion:

68.13% of the total population of South 24 Parganas district lives in villages. Most of the people in the village are farmers. Most of them are associated with horticulture. A certain amount of technological and infrastructure development is required for the improvement of horticulture. Below we will observe the availability of the above mentioned infrastructure block in South 24 Parganas district.

Table 2. Block wise

and reach a definite conclusion by it.

various data of horticulture development of South 24 Parganas District.

Blocks

A1

A2

A3 Thakurpukur.

A4

A5

A6

A7

Al  
A9  
waheshtalt  
23.02  
97.98 4-56 32.68  
5.77  
43-63  
45.56  
1.17  
28.35  
Budge Budge -I  
68. 14 57.73 5.20 26.45 12.91  
80.67  
00  
Bishnuper-1  
84.43  
70•15 11.01  
26-52  
20.66  
7723  
40.43  
00152  
5.04  
Bishnupun - 11  
54.43  
34.59 7.47 28•73  
15.61  
8|35  
43:86  
4.03  
Sonak pus  
66.02  
48.94 12.33 29 69  
14.69  
79.28  
03.85  
2.15  
9.65  
Bhenoar-I  
65-74  
56.08 21-67 26-21  
3163  
71.94  
41.64  
10.17  
26.92  
Bhangas- 15  
62.69  
46-71 23.24 27.30  
27.63 74.45  
45.34  
2.34  
13-43  
Canning - I  
68.58 40.84 18.47 21.08  
31.27 65•67 34.34  
3.06  
0.30  
Canning -Ir

80.21  
24.43 14.80 17.30  
57.51  
66.81  
27.97  
6.74  
Baruipur  
76.50 66-80 13.81 25.36  
27.41  
75.40 29.83  
o  
11. 30  
Magrehat-11  
80.95  
67.60 12.01  
24.34  
24:38  
77.97 43.82  
1.82  
8 21  
Magnahat - I  
81.80  
36.25 10.03 22-75  
02.57  
73.96  
46.30  
4.73  
14.58  
Falta  
80.89  
59.59 9.54 25.55 08,37  
76.47 38.85  
1•74  
7.54  
Diamond henbous  
81.26 30.06 7.60 24.10  
23.28  
75.31 33.52  
Diamond herbawat  
3•88  
5.68  
84-97 5123 7.36 24.95  
21.68  
71.23  
67.01  
5.59  
kulpi  
13.10  
86-72 22.56 9.62 19.24  
38.34 75.60 45.26  
4.32  
12.46  
Mandirbazar  
89.25 35.61 4.32 20.30  
21.36  
75.65  
27.42  
12.61  
83 In

6.77 10:459 18.07  
4.29  
39.61 73.49  
16.97  
3.69  
11.50.  
Jaynege- 1  
75.83 22 21 9.14 23.18  
21:74 72.16  
41.25  
3.52  
8.78  
Jaynegas-11  
84 37  
25.22 16-48 21.64  
37.85 69.05  
40.17  
2.21  
kultali  
22.81  
72.67  
11-73 20.62 21.38 45.83 69.37 57.12  
Basanti  
17-13  
28.30  
70:33  
21.49 18.72 20.63 47.83 68.07  
55.70  
10.71  
Gosaba  
12:80  
78.11  
28.05 1974 20.68 54.16  
78.98  
71.04  
10-14  
96.60  
19.23 2191 22.64  
24.76  
42.65 77.77 64.45  
27.71  
27.01  
83:04 91,77 14.12  
21.15  
38.25  
77.93 69.03  
9.02  
33.09  
sagar  
58.95 34.02 24.46 21.30  
42.72  
84.21 56.48  
19.26  
Namklen4  
84.55  
19.41 22.26 22.93  
3408  
21-62  
85.72 57.46

28-04  
 32-49  
 Pathipratima  
 72:54  
 12:36 24.07 19•62  
 49.09  
 82.11  
 31.09  
 8.91  
 16:711  
 Budge Budge I  
 76-95 47.49 689 25.33  
 26.40 78.98  
 58-35  
 00  
 9.94

Table In: Level of horticultural development of sault, 24 pysical districts: computed by researcher.

Category

No. of Blocks out of Total districts

High

04

Medium

12

13-79

Low

41.38

13

44.83

Total

29

100

source: computed by researcher.

A. High level of Horticultural Development:

The most developed blocks of horti@ultineaneKekloipNamkhena,

Grosaba, matirapur-II . This region occupies 13. 79% area of the entire block, It has more fertile agricultural land, use of HY seeds, use of improved machinery, better system of marketing, better irrigation system, better market, better transport systems, government connection facility and most of the farmers are educated. Due to all these advantages blocks have been, although developed in horticulture.

B. Medium level of Horticultural Development:

A total of 12 blocks belongs to medium level of horticultural development, category. Blocks included in it are Basseipur, sager, kultali, Faltā, Diamond.harbour-1, usagrahat 11, Budge Budge 11, Parkasprtime etc. There is no balance between the production of flowers, fruits and vegetables. These regions occupy 41.38% of the blocks area. However, more development is possible if the

- government level thinks about the deficiency

E. Low level of Horticultural Development:

A total of 13 blocks belongs to the level of horticulture

development category . Blocks included in it are Budge Budge I, Diamond harbour 1, Jaynager 7, selkirapur 7, @inning I, canning II, Manclisbazar, shinger-Inete. In these blocks lack of educated farmers, lack of irrigation, lack of developed markets, lack of HY seeds, Lack of Bank loan, lack of cold storage etc. These regions occupy 44.83% of the blocks area.

## II. Conclusion:

Through the above discussion we come to the conclusion that the entire south 24 physical districts is not even developed, in horticulture abundance if sufficient fertile arable lands, irrigation facilities, use of HY seeds, Educated farmers, use of tractors, harvesters, Threshers, sprayer, system, reaper, increase in bank loan facility, improved transport system, well-developed market and agricultural land, High cropping intensity, etc helps blocks more advanced horticulture.

However, continuous development is also important in these blocks,

that are more developed. Encouragement of chemical fertilizers and pesticides makes the land infertile. Measures should be taken to ensure that advanced blocks do not become under developed in the future, so use of proper ratio of NPK, application of more organic fertilizers etc should be done. Finally it can be said that there is scope for development of horticulture in south 24 parganas district of west Bengal. It is proposed that proper policies and infrastructural development are needed and implemented everywhere then one day south 24 parganas district will emerge as the best horticulture district of West Bengal and also India.

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