

PRESENT FORM AND FUTURE DEVELOPMENT OF IRRIGATION IN SHEKHPURA DISTRICT

SANJAY KUMKAR SINHA

Research Scholar

Dept. of Geography

Magadh University, Bodh Gaya

Email—ssanjaykumar179@gmail.com

Abstract

Water is the basis of existence of life on earth. Almost all human activities are carried out on the basis of water. Although there is a natural shortage of water in the research area, but it can be eliminated through proper water management. This problem can be eliminated and the irrigation capacity can also be increased. There is a need for government initiative and creating social attitude.

Key Words:- Agricultural Productivity, Irrigated Land, Gross Irrigated Land, Net Irrigated Land, Protective Irrigation, Agriculture Cabinet, Harvesting.

Introduction

Various dimensions and options of activities exist in the universe. Activities of all dimensions have their own routines for doing their work and there are circumstances related to their work as well as different patterns are created. I Agricultural activity is the paramount and basic activity, especially in the Indian context. Due to different types of circumstances, geographical conditions, pressure of population, all these activities interact with each other. Hence, the pattern of agricultural activity is determined. In the Magadha region of Bihar. There is a popular saying – “Base Gotra, Jote Sot” which means that a person should build a house or settle down where his Gotra resides. Similarly, the purchase of agricultural land or land should be done only where it resides. There should be arrangement of water or permanent arrangement of fountain. We know that the source of water used in irrigation field in agricultural activities is natural rain because in the absence of rain, agricultural activities will not be able to get water due to which irrigation will not be possible. Irrigation Agriculture That directly affects the productivity and production. Agricultural scientist, Prof. Randhawa, who made the soil surface sheet in India, while highlighting the importance of irrigation, has said that “Water is the life of the crop”. Due to water, the crop flourishes. Productivity increases up to six times. The presented research paper has been prepared by doing an in-depth survey of various blocks in the context of Sheikhpura district of Bihar state. Even at present, a lot of efforts are being made by the Bihar government to provide irrigation facilities in Sheikhpura district. The recently constructed rubber dam near Rajgir will provide water supply to Sheikhpura district, which will help in the development of this district in the future.

Objectives of Research

- I. There is a shortage of natural water sources in Shekhpura district, yet the demand for crop water is being met through its irrigation means. To be honest, according to the area, the irrigation facility is available in the highest percentage in Shekhpura district. The main objective will be to provide information about these facts.
- II. The main objective will be to highlight the potential and future of irrigation in Shekhpura district through the table.

Research Hypothesis

- I. There is lack of natural water sources i.e. rivers in Shekhpura district.
- II. If seen in percentage terms, Sheikhpura district is the district with the largest irrigated area in Bihar.
- III. The geographical location of Shekhpura district is such that the monsoon rainfall here is slightly less in comparison to other districts of Bihar.
- IV. Under the Agriculture Cabinet Scheme in 2008, the frequency of irrigated land is being increased in entire Bihar in which Shekhpura district is also no exception.
- V. Vegetable production is especially done in Sheikhpura district, the basis of which is the supply of irrigation.

Relevance of the Research:-

The presented research paper shows the importance of irrigation in the agricultural sector and gives the message that only by expanding irrigation, the productivity and production of agriculture can be increased so that the densest part of the population can be nourished.

Research Data

In the presented research paper, secondary data of Agriculture Department and Water Resources Department has been presented which can be observed through the table.

Research Method

Although the presented research paper is basically prepared on secondary data, but the research area and research title are part of our PhD, hence during the preparation of PhD, we toured the entire district and we made research facts by making irrigation related questionnaires, interviews and schedules and based on those facts. Research analyzes were written based on

Research Field

The presented research area is Sheikhpura district in the central eastern part of South Bihar, whose latitudinal and longitudinal extension is 24°25' to 25° North latitude and 85°45' to 86°45' East longitude respectively. The demarcation of this district is Nalanda and Patna in the north. , Nawada and Jamui in the south, Lakhisarai in the east and Nalanda and Nawada district in the west. It includes Shekhpura, Barbigha, Ariyari, Chevada, Shekhopursarai and Ghatkusumbha blocks. Its area is 689 square km and according to the 2011 census, its population is 636342.



Figure 1. Bihar in India



Figure 2. Sheikhpura district in Bihar



Figure 3. Sheikhpura District Location and Administrative Unit

Research Analysis

In the research analysis of the presented research paper, basically two tables have been presented which are based on secondary data whereas the basic facts of the research have been made in view of the answers given by the respondents in the field work. Irrigation is an essential element for agricultural productivity. The process of growing crops

by adding water to the soil is called irrigation. After irrigation, the growing power of the soil for crops increases by 6 times, that is, irrigation increases the productivity of the soil by 6 times, due to which the productivity increases and the plain areas become denser. It is possible to maintain the population. The process of irrigating the fields must have developed automatically because in ancient times, when the crops were drying due to lack of water, they would have been revived when there was sudden rain and seeing this situation, the farmers would have developed a desire to cultivate the plants. The instinct to provide water must have awakened and irrigation processes must have come into existence.

In ancient times, the only methods of irrigation used to be rainfall due to monsoon, but in the present time, many methods of irrigation work which are mainly four - canal irrigation, well or tube well irrigation, pond irrigation and other sources of irrigation. This includes irrigation by using sticks, irrigation by coring, apart from this, irrigation done by hand by individual humans. However, there has been a decrease in these other sources of irrigation. Irrigation facilities in the study area are the highest in the context of all the districts of Bihar. It is prosperous, that is, maximum area of irrigated land has been developed in the district in terms of area. The main reason for which is that the geographical conditions of Shekhpura district are such that the frequency of monsoon rains is for the least duration here in comparison to other districts.

Table Number – 1

Shekhpura District: Block wise sources of irrigation, 2011

Sl. No.	Name of Block	Net Gaya (in hectares)	Bodh Area (in hectares)	Total Irrigated Area (in hectares)	Irrigation sources (hectares)			
					Canal	Well/tube	Pond	other source
1	Sheikhpura	12547.3		8286.5	1068.4	3122.1	1433.4	2662
		%		66.04	12.89	37.67	17.29	32.14
2	Barbigha	6851.1		5960.3	3551.4	1414.5	401.8	592.3
		%		87.0	59.58	23.73	6.74	9.93
3	Ariari	12122.4		7738	1151	5375.1	942.5	269.5
		%		63.83	14.87	69.46	12.18	3.48
4	Chevada	10676		7252.9	329	1500.7	4272.2	1151
		%		67.9	4.53	20.69	58.90	15.86

5	Shekhopursarai	4650.2	4113	2045.3	1010	924.2	133.5
		%	88.44	49.72	24.55	22.47	3.24
6	Ghatkusumbha	6679.3	2148.9	451	1086.6	397	214
		%	32.2	21.00	50.56	18.47	9.95
		53526.3	35499.6	8596.5	13509	8371.1	5022.3
		%	66.32	24.21	38.05	23.58	14.14

Source: Water Resources Department, Sheikhpura I

Observation of Table No. 1 shows that Shekhopursarai block has the maximum facility of irrigation in the total sown land, where 88.84 percent of the land is irrigated. At the second place is Barbigha block, where 86.99 percent of the land is irrigated. In Chevada block, the total sown land is 67.93 percent of the land is irrigated and gets the third position whereas the total irrigated area in Shekhpura block is 66.04 percent and gets the fourth position. The least irrigated land in Shekhpura district is in Ghatkusumbha block where 32.17 percent land is irrigated. Thus Shekhpura 86.32 percent of the sown land in the district is irrigated. These figures are from before today but in the present time these figures have increased even more. Especially in the context of land irrigated by tube wells. In the figures we see that the percentage of irrigation Among the sources, if there is maximum irrigation in Shekhpura district, it is through tube wells. 38.05 percent of the entire irrigated area is irrigated by tube wells and wells, while the frequency of irrigation is almost the same through canals and ponds. 24.21 percent is irrigated by canals. The land is irrigated, while 23.58 percent of the land in Shekhpura district is irrigated by ponds. Apart from this, as far as other sources of irrigation are concerned, under this only 14.14 percent of the irrigated areas of the entire district are irrigated. Now we will discuss about the sources of irrigation block wise. We will analyze it from the perspective of total irrigated area. For example, the total irrigated area in Shekhpura block is 66.04 percent of the total sown land. Out of which the most irrigated source is wells and tube wells, through which 37.67 percent areas are irrigated. Whereas in the second place there is another source through which irrigation facility is available on 32.14 percent land. Only 12.89 percent irrigation is done in this block from the least canal source. Whereas irrigation through ponds is 17.29 percent in this block. Whereas maximum irrigation is done through ponds. It is found in Chevada block, where about 59 percent of the land is irrigated by ponds. The least amount of land irrigated by ponds is in Barbigha block. Here only 6.74 percent of the land is irrigated by ponds. Whereas in Barbigha block, maximum irrigation is done by canals. Irrigation from canals here is 59.58 percent whereas the least irrigation from canals is in Chevada block. In terms of irrigation from canals, Shekhopursarai block is in second place where almost half of the land is irrigated through canal irrigation. Whereas here The least is the land irrigated from other

sources. The percentage of land irrigated from other sources is 3.24 percent in Shekhopursarai. Whereas in Shekhopursarai, 50 percent of the land is irrigated by canal, 25 percent is irrigated by tube wells and wells. Study of data. After this, it becomes clearly clear that Ghatkusumbha block is the weakest in terms of water and irrigation resources. In Ghatkusumbha block, maximum irrigation is done through tube wells, which is half of the total irrigated land facility. Here only 21 percent land is irrigated by canals. A total of 24.21 percent land of Shekhpura district is irrigated by canals, while the least 14.14 percent land is irrigated from other sources. Due to the absence of any major river in Shekhpura district, irrigation facilities have developed more in the district and the entire Bihar. In the district level data, it is the most prosperous. In Shekhpura district, especially the area of Ghatkusumbha block faces the problem of water scarcity every year, while the remaining five blocks are included in the category of densely accumulated facilities of Bihar. Only on the basis of irrigation facilities and development. The productivity of the crop depends on the frequency of production.

As shown in Table – 2, the following are the monsoon based irrigated lands and agricultural facility irrigated lands of the entire Shekhpura district.

Table No. 2

Shekhpura District: Block wise irrigation based classification

Sl. No.	Name of the block	Irrigated land with agricultural facilities (in hectares)		Rainfed land (in hectares)	
		Gross Irrigated Area	Net Irrigated Area	Partially Irrigated	Non-Irrigated or Rainfed
1	Sheikhpura	14418	7061	1413	5648
2	Barbigaha	8282	8046	1609	6437
3	Ariari	5876	4326	866	3460
4	Chevada	8025	6365	1273	5092
5	Shekhopursarai	6357	2721	544	2177
6	Ghatkusumbha	5499	3666	733	2933
Total		48457	32185	6438	25747

Source: District Irrigation Department, Sheikhpura I

The total gross irrigated area in the entire Shekhpura district is 48457 hectares, in which the first place is of Shekhpura block, which has 14418 hectares of gross irrigated area. The second place comes from Barbigha block, which has 8282 hectares of gross irrigated area. While the third and fourth place is Chevada and Shekhopursarai are at the first place respectively. Which includes 8025 hectares and 6357 hectares of land respectively in the total gross irrigated area of Shekhpura district. At the fifth place comes Ariyari block which is 5876 hectares. While the share of Ghatkusumbha block is the least. Which is 5499 hectares. If seen in terms of net irrigated area, the land of the entire Shekhpura district is 32185

4377

hectares. In terms of net irrigated area, the least area is of Shekhopursarai which includes 2721 hectares of land. The same first place is Barbigha block. Which is 8046 hectares of land and net irrigated area. The second and third place is of Shekhpura block and Chevada block which are included under net irrigated area of 7061 hectares and 6365 hectares of land respectively. After this, there are Ariyari block and Ghatkusumbha block. That 4326 hectares and 3666 hectares of land is net irrigated area.

If seen in the context of irrigation, in Table-2, partially irrigated or protective irrigation comes under the rain-fed area, which includes 6438 hectares of land in the entire Shekhpura district. Under this, the maximum land is of Barbigha block which is 1609 hectares of land. The least is that of Shekhopursarai which is 544 hectares. The second, third, fourth and fifth place respectively comes to Shekhpura block, Chevada block, Ariyari block and Ghatkusumbha block. If the analysis of non-irrigated or rainfed land in Shekhpura district is done. If done, 25747 hectares of land in the entire district comes under it. In which the first place is of Barbigha block with 6437 hectares of land and the least is of Shekhopursarai block which is 2177 hectares of land.

Future development of irrigation in Shekhpura district:-

As written earlier, there is a lack of natural water source in Sheikhpura district, but one fact is definitely positive that the two neighboring districts of Sheikhpura district, Nalanda and Patna, have abundance of water sources. The rivers flowing in Nalanda and Patna district demarcate Sheikhpura district. Like – Harohar River and Irrigation Administration of Shekhpura district can utilize half of the water of the rivers flowing on its border, some water is brought through canals while some water can be increased by future development of canals. Under the Agriculture Cabinet Scheme, provision for minor irrigation development is being made in this district. Under this, ground water is being recharged through water harvesting along with the canal. Further in 2022, there is a plan to build a huge rubber dam in Khijarsarai area of Rajgir. There is a provision in which water is being supplied from river Ganga at Mokama in Patna district. This water supply can be done only for four months in a year because Ganga is an international river and the law supports it. This water reservoir is in Sheikhpura district. It will not support irrigation but will give positive support to the shortage of drinking water in the district. It is expected that after the commissioning of this dam, the shortage of drinking water in the district will be eliminated.

Conclusion

Hence, it can be said that Sheikhpura district is weak in terms of water, but by saving water by collecting rainwater, by doing efficient water management and by developing new formats of irrigation like irrigation by delivery, irrigation by digging ponds, wells apart from canals. To make arrangements to give deep furrows to the ahar and pine trees of the district so that more water can be collected during rainy days and hence irrigation can be done with water for many months possibly till February.

References:

1. Statistics Department, Sheikhpura
2. Agriculture and Water Resources Department
3. Sinha, V.N.P.(2020), Geography of Bihar, Rajesh Publication, New Delhi.
4. Dr. Rashmi, 2019, Agricultural Geography of Modern Bihar, Rajesh Publication, New Delhi.
5. Agriculture Cabinet Policy