

# Agricultural damage in mokama tal REGION by flood; AND its conserVation: a geographical description

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**abstract--***Tal is a large piece of land in Mokama under the Patna district of Bihar. Many people think it is the largest Thar region in the world. It extends to the backwaters of the Ganges during the monsoon and gives the onlookers the impression of the ocean. In other seasons, it provides very fertile land for agriculture. Tal is located in the Kiul-Harohar basin, with an area of 1062 square kilometers (410 square miles). It is a dish-shaped depression that extends from Fathu in the west to Lakhisarai in the east. Its width varies from 6 to 17 kilometers. It is close to and almost parallel to the right bank of the Ganges. It has been human nature to struggle with the problem (flood) and go forward towards development by coordinating with it. The research is an attempt in the field so that the common men in Mokama Tal can look forward to overcome this struggle and coordination with the government for the development in the area.*

**KEY WORDS--***flood, agricultural damage, agricultural conservation, geographical description,*

## I. INTRODUCTION

Bihar is located in eastern India. The state is Nepal in the north, West Bengal in the east, Uttar Pradesh in the west, and Jharkhand in the south. The state enjoys a unique geographical advantage because it is close to the vast markets of eastern and northern India, and can access ports such as Kolkata and Haldia. It can also use the raw material sources and mineral reserves of neighboring countries.

The compound annual growth rate of Bihar's gross domestic product (GSDP) from 2011-12 to 2020-21 is 12.01%. The per capita GSDP of Bihar increased from US \$ 490.62 in 2011-12 to US \$ 680.23 in 2018-19, with a compound annual growth rate of 10.25%.

Bihar is one of the most powerful agricultural states. The percentage of the population engaged in agricultural production in Bihar is about 80%, much higher than the national average. It is India's fourth largest vegetable producer and eighth largest fruit producer. Food processing, dairy products, sugar, manufacturing and healthcare are some of the fast-growing industries in the state. The state has plans to take other actions to develop other areas such as education and tourism, and also provides incentives for information technology and renewable energy.

The state enjoys a unique geographical advantage because it is close to the vast markets of eastern and northern India, and can access ports such as Kolkata and Haldia. It can also use the raw material sources and mineral reserves of neighbouring countries. The state has a large amount of cost-effective industrial labour and is an ideal destination for all walks of life.

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From April 2000 to December 2019, the total foreign direct investment in Bihar and Jharkhand was US \$ 113 million. In 2019, the state submitted 8 investments, with a total proposed investment of Rs. 6.71 billion (USD 96.01 million). In 2017-18, the state's total merchandise exports were US \$ 1,345.31 million. In the 2019-20 fiscal year (as of December 19), exports amounted to \$ 1.2605 billion.

### ***Recent developments***

- According to BSHP-2, the construction of ROB (part of SH 83-Baghi-Barbiga Road) is expected to be completed in January 2019. The total cost of the project is 32.74 crore (US \$ 0.58 million)
- In 2019-20 (by January 2020), Patna and Gaya handled 26,089 and 2,754 aircraft takeoffs and landings, respectively. During the same period, Patna and Gaya received 38,49,167 passengers and 1,82,517 passengers, respectively. During the same period, Patna Airport handled a total of 10,637 tons of freight.
- As of April 2018, according to the AMRUT plan, a total of Rs. 24.977 crore (US \$ 38321 million) was allocated to Bihar.

### ***Key industries:***

- The total horticultural output of the state in 2018-19 was 21,204.97 million tons, and the production area was 1,185.36 thousand hectares.
- The country produced 678.78 million tons of rice and 62,000 tons of beans in 2018-19.
- The sugarcane planting area in Bihar accounts for about 6% of the total planting area. In 2018-19, the state's sugarcane production was 18.285 billion metric tons. In the 2019-20 sugar season, Bihar operates 11 sugar factories. During 2019-20, it is estimated that Bihar will produce 220.5 million tons of sugar.
- In 2018, the number of foreign tourists in Bihar was approximately 1.09 million. During the same period, the state's domestic tourists reached 33.62 million. In 2019 (to September), foreign tourists reached 700,000 and domestic tourists reached 16.94 million.

## **II. FLOOD IN BIHAR**

Bihar is the most flood-prone state in India. 76% of Uttar Pradesh's population lives under the constant threat of flood damage. Bihar accounts for 16.5% of India's flood-affected areas and 22.1% of India's flood-affected population. The geographical area of Bihar is approximately 73.06%, which is 68,800 square kilometers (26,600 square miles) out of the 94,160 square kilometers (36,360 square miles) affected by the flood. Every year, in addition to livestock and millions of dollars worth of assets, they also destroy thousands of lives. Since the government began releasing data in 1979, they have claimed 9,500 lives. The 2013 flood affected 5.9 million people in 3768 villages in 20 districts of the state. The 2017 flood affected 19 districts in Uttar Pradesh, killing 514 people and affecting 17 million people.

### ***Cause of flooding***

Nepal is a mountainous area geographically. When heavy rains occur in the mountains of central and eastern Nepal, water flows into the main drains of the Narayani, Bagmati and Kochi rivers. When these rivers enter India, they flow into the plains and lowlands of Bihar and destroy their banks. In order to protect the Kochi River

dam and the Kochi barrage dam, the Indian engineer responsible for the Nepal dam further opened the dam gate, which may lead to flooding of the Bihar River. In a high-flow event in 2008, a crack broke out on the East Kochi outflow embankment above the dam, and the Kochi River (known as the sorrow of Bihar) was picked up along the coast near the border between Nepal and India for more than 100 years. An abandoned old river channel. As the river's embankment in Kusaha, Nepal broke, flooding several areas in Nepal and India, some 2.7 million people were affected. 95% of Koshi's total passed the new course.

### ***Embankment***

The latest fact-finding report prepared by civil society organizations, such as Dr. Sudhir Sharma, Dr. Dinesh Kumar Mishra and Dr. Gopal Krishna, for the 2008 Kosi flood emphasizes that despite the construction of more than 3,000 kilometers of embankments in India. In the past few decades in Bihar, the flooding trend in the same period has increased by a factor of 2.5, not to mention the destruction of the embankment in every major flood event.

The fact-finding mission recently released a report titled "Kosi Deluge: The Worst Situation Continues", which emphasizes that the embankment binds the river. As far as Corsi is concerned, it found that the river bed was actually several feet higher than the adjacent land due to siltation. The highlands and lowlands separated by dams caused the lowlands to be permanently flooded. 16% of the land in northern Bihar suffered permanent waterlogging.

When the Bihar flood policy was first proposed in 1954, Bihar had about 160 kilometers of embankments. At that time, the flood-prone area of the state was estimated at 2.5 million hectares. After the completion of the dike system, 3,465 kilometers of dikes have been constructed and managed by the Ministry of Water Resources (WRD). However, by 2004, the number of flood-prone lands increased to 6.89 million hectares.

### ***Deforestation***

Deforestation in the catchment area leads to increased silt content in the river. The total catchment area of Corsi is 74,030 square kilometers, excluding the catchment areas of its two important tributaries Kamla (7,232 square kilometers) and Bagmati (14,384 square kilometers). These tributaries of Corsi Island are important in themselves and are usually dealt with separately. Of the total catchment of the Kosi River, only 11,410 square kilometers are located in India, and the rest (62,620 square kilometers) are located in Nepal and Tibet. The river catchment area of Triveni in Nepal is 59,550 square kilometers. The average rainfall in the upper catchment area of Kosi is 1,589 mm, while the lower area has 1,323 mm. The average annual silt volume of the river is 92,400 acre feet (114,000,000 cubic meters).

### ***Faraka Barrage***

This period led to severe interception of the river's dynamic balance, hindering the natural oscillation of the river within its winding zone. The Ganges of Malda and Murkhidabad meander 10 kilometers. The water level of the Ganges River rises about 8 m upstream of the Farakka barrage. In the early decades of this century, the water flowing in the South Dongfeng River between Rajamahar and Faraka has now formed a powerful meander circulation to accommodate the extra flow accumulated due to the barrage. Due to the blockage caused by the

barrage, nearly 640 million tons of silt are accumulated in the river bed every year. Over the past three decades, this has resulted in the accumulation of nearly 18.56 billion tons of silt.

The Farakka barrage upstream of the barrage caused the following problems:

- Closing channel / from straight to oblique flow
- Sediments (640 x106 metric tons / year)
- Reduce cross-sectional area
- The slope of the long profile drops
- River widening and lengthening
- Increased frequency and magnitude of flooding

According to the 2016 report of the Central Water Commission (CWC) on the Bihar floods, due to the impact of backwaters, even in the worst case, the Farakka barrage may affect the upstream only about 42 Km area. Patna is located about 400 kilometers upstream of the Ganges. Based on an assessment of the 100-year flood in the Ganges, the report accused the large number of bananas planted on the bank between Patna and Bhagalpur as one of the causes of the flood. The CWC report pointed out that the Ganges of Bihar is basically due to the huge sediment load caused by its northern tributaries Ghaghra, Gandak and Kosi. Bihar 's 1954 flood affected an area of 2.5 million hectares. At that time, the length of all embankments in Bihar was 160 kilometers, but the area affected by the flood in 2016 increased to 7.295 million hectares. 3731 kilometers of embankment.

### ***Affected river***

Uttar Pradesh is the playground of eight major rivers. All these rivers eventually reached the Ganges.  
GagraGandakBodhi GandakBagmatiKamalaBhutahi BalanCorsiMahanand

When there is a sudden negative barrier in the normal life cycle of civilization, then in normal language we call it a disaster. Flooding is also a natural disaster. The geographical region or region in which the frequency of flow of big and small rivers is more common, usually those geographical areas are prone to water logging or flood disaster. Bihar is a state of rivers, from here, several rivers originate from the Himalayas and from Chotanagpur to the plateau. The dense frequency of rivers in Bihar is a by product of the geographical location of this state. The central and eastern parts of northern Bihar are more affected by floods. This part is part of the Koshi flow, the Koshi river is known to have changed its course of flow, in the last 150 years, this river has changed 142 km from east to west. Similarly, other small and big rivers of northern Bihar are also known for floodplain. As Bihar is an agricultural state, and due to this flood, agricultural crops have to suffer a lot. This loss can be reduced by coordinating this loss with floods and adopting some employment options. The presented research paper has been written with reference to Mokama Tal, a limited flood affected area from South Bihar with the aim of this fact. This is the only area in central southern Bihar where entire area is covered by floods during the rainy season. Three months in a year, agricultural work cannot be done in this area. Due to which agriculture is degraded. As an alternative to reducing this damage, flooding can be coordinated by taking some necessary steps. In the light of this fact, this research paper is being prepared.

### **III. AIM**

- To study the impact of flood on agriculture and its conservation

#### **IV. OBJECTIVES OF THE RESEARCH:**

1. To study the agricultural damage by flood in Mokama Tal region.
2. To study the agricultural conservation during flood in Mokama Tal region.
3. To study the significant differences in the attitude among common men of Mokama Tal region towards agricultural damages caused by flood
4. To study the significant differences in the awareness among common men of Mokama Tal region towards agricultural damages caused by flood
5. To study the significant differences in the attitude among common men of Mokama Tal region towards agricultural conservation during flood
6. To study the significant differences in the awareness among common men of Mokama Tal region towards agricultural conservation during flood
7. To study the significant correlation between attitude and awareness among common men of Mokama Tal region towards agricultural damages caused by flood
8. To study the significant correlation between attitude and awareness among common men of Mokama Tal region towards agricultural conservation during flood

#### **V. RESEARCH QUESTIONS (QUALITATIVE RESEARCH)**

1. What are the agricultural damages caused by flood in Mokama Tal region.
2. What are the agricultural conservation methods adopted during flood in Mokama Tal region.
3. What is the quality of fertility of land in Mokama Tal region.
4. What are the agricultural crops grown in Mokama Tal region.

#### **VI. HYPOTHESES (QUANTITATIVE RESEARCH)**

1. There is no significant differences in the attitude among common men of Mokama Tal region towards agricultural damages caused by flood
2. There is no significant differences in the awareness among common men of Mokama Tal region towards agricultural damages caused by flood
3. There is no significant differences in the attitude among common men of Mokama Tal region towards agricultural conservation during flood
4. There is no significant differences in the awareness among common men of Mokama Tal region towards agricultural conservation during flood
5. There is a significant correlation between attitude and awareness among common men of Mokama Tal region towards agricultural damages caused by flood

6. There is a significant correlation between attitude and awareness among common men of Mokama Tal region towards agricultural conservation during flood

## **VII. DELIMITATION OF THE STUDY**

1. The study will be limited to Mokama Tal region only
2. The study will be limited to common men of Mokama Tal region only
3. The study will be limited to the sample of 300 only.
4. The study will be limited to agricultural damage caused by food only
5. The study will be limited to agricultural conservation during flood only

## **VIII. RELEVANCE OF THE RESEARCH:**

Due to flood, every year for three to four months, agricultural and economic activities are completely stalled, due to which the research area is poor and backward. The importance of the research presented will depend on how to reduce agricultural damage by coordinating with the floods in the region and to advise on development by strengthening the options for regional development.

## **IX. REVIEW OF RELATED LITERATURE**

<https://timesofindia.indiatimes.com/city/patna/flood-control-board-clears-rs-377-crore-projects/articleshow/56381821.cms>

‘Flood Control Committee cleared Rs 37.7 crore projects’; TNN | Updated: January 7, 2017, 20: 17 IST

PATNA: At the 53rd meeting of the Bihar Flood Control Committee (BSFCB) on Friday, five large-scale projects of the Ministry of Water Resources (WRD) were cleared, worth Rs 377.74 crore. This includes a project of Rs 188.5 crore to drain water from the Mokama Tal area in Patna.

The BSFCB meeting chaired by WRD Minister Rajiv Ranjan Singh alias Lalan Singh also decided to take preliminary steps to promote the training of a senior engineer in the department, and the senior engineer in the department will be responsible for overseeing the Chaurasi dhar (brook) near Ismailpur Bind Dredging work. North Bhagalpur District.

Arun Kumar Singh, the chief secretary of WRD, and land reform, counterparts in the road construction sector and the chairman of the Ganges Flood Control Committee attended the meeting. The Chief Railway Engineer (Eastern Region, Kolkata) and WRD Chief Engineers Indubhushan Kumar, Ram Kumar Ranjan and Brajesh Kumar also participated in the discussion.

The large-scale drainage project in the Mokama Tal area envisages the construction of flood gates in Balgudar on the Harohar River. In addition, there are four gates in different locations.

BSFCB has also cleaned up a series of construction projects to protect Aligarh Muslim University and Kishanganj Police Station. This year all seven blocks in the area were flooded. The project's expenditure was Rs 4,386 crore.

It also approved the construction of five sluices on the right Koilwar-Buxar Ganga embankment. In addition, a new 6 km long embankment must be built. The total expenditure is 4058 crore.

In addition to this, a fine of 35.43 million rupees was imposed for the activation of the natural channel downstream of the Kosi River along the barrage. BSFCB also liquidated 69.33 million rupees for the construction of 30-meter-wide channels in Pathraha and Bishunpur.

<https://www.indiawaterportal.org/articles/waterlogged-area-mapping-and-hydrological-data-analysis-mokama-tal-area-research-report>

Rama Mani(2010); 'Reports on the mapping and hydrological data analysis of waterlogged areas in the Mokama Valley'; Research report by the National Institute of Hydrology

The report introduced the mapping and analysis of hydrological data in the waterlogged area of the Mokama Valley in Bihar. This is due to the stagnation of runoff and the rise of the groundwater table.

The report introduced the mapping and hydrological data analysis of waterlogged areas in the Mokama Valley in Bihar. The drainage problem of agricultural land is basically related to the stagnation of runoff and the rise of groundwater level. Generally, stagnation of runoff is the result of heavy rainfall, which will produce excessive runoff, and the existing drainage capacity is insufficient or the runoff conditions are unfavorable. The rise of the groundwater level beyond the critical limit or the accumulation of surface water can cause flooding.

The low-lying areas of Patna, Nalanda and Munger are about 1062 square kilometers (Mokama Group in Takas). The waterlogging is due to excessive rainfall in the catchment area, stagnation of surface water for a long time, poor surface drainage, and natural drought. Artificial obstruction of surface outflow and poor terrain. For large-scale research and management applications, a summary method for monitoring large-scale flooding problems is a valuable tool. In recent years, remote sensing data has been used for water assessment and soil moisture conditions. The use of remote sensing data in combination with land use, soil and terrain information seems to be a useful technique for delineating the temporal and spatial extent of flooded areas.

This study attempts to outline the submerged area of Mokama tal by integrating remote sensing data, land use, contours, soil and other relevant information. The data of IRS 1A LISS II 1989 (before and after the monsoon) was used to study Mokama's dead reserves and inundation degree (lean period before monsoon) and live reservoir and monsoon inundation (peak flood period or after monsoon) information. A set of tals corresponding to the highest flood level and other hydrological information (rainfall and runoff).

The study also used the site's flood peak flow sequence to adapt to various distributions. This gives the flood value at a higher repetition interval. This type of information is useful for determining the structure of any water resources in the river basin for flood or water management purposes. In addition, an attempt was made to establish a management model for managing waterlogging and drainage congestion in tals. The model outlined in the study requires various hydrological, topographic and land use data.

## **X. RESEARCH METHODOLOGY:**

Field work will be done in the research area before writing the presented research analysis, and the primary facts will be ascertained through questionnaires, interviews. Sample surveys will be conducted in the areas of Mokama Tal region, which will become the basis of research analysis.

## **XI. RESEARCH DESIGN**

Both qualitative and quantitative research design will be used for the present study. For qualitative research design secondary sources like books, journals, dissertations, websites will be used. For quantitative research design primary sources will be used viz. questionnaire in the form of survey.

## **XII. METHOD**

In the present study Descriptive survey method will be used.

## **XIII. POPULATION**

Entire population of Bihar will be considered as the population for the present study.

## **XIV. SAMPLE**

300 actual samples will be chosen from the Patna district, of Mokama Tal region for the present study.

## **XV. SAMPLING TECHNIQUE**

Incidental sampling technique will be used for the present study.

## **XVI. TOOLS USED**

1. Attitude scale towards agricultural damages caused by flood
2. Awareness scale towards agricultural damages caused by flood
3. Attitude scale towards agricultural conservation during flood
4. Awareness scale towards agricultural conservation during flood

## **XVII. ANALYSIS AND INTERPRETATION OF DATA(quantitative analysis)**

For analysis of data statistical analysis will be done like mean, t-test a Pearson's coefficient of correlation.

## **XVIII. LOCATION OF AREA OF THE STUDY**

Mokama is a town and municipality in the Patna district of Bihar, India. It is located 90 kilometers (56 miles) east of Patna on the south bank of the Ganges. Mokama is a connecting town in the north and south of Bihar and has the second highest lentil production in India.



It is believed that Lord Pashuram lived here for a few years, and there is also a famous story of a dead cow reborn from Lord Pashuram. On the birthday of Parshuram ji, a festival was celebrated in Okami Mokama is the junction of magadha, Anga and Mithila.

### ***Geography***

Mokama is located on the southern bank of the Ganges. The scenery here is absolutely plain. The land extending along the north bank of the Ganges is commonly known locally as "Diyala Land". During the monsoon, Diyala land was submerged in the Ganges waters. The southern part of Mokame Town is the Tar Wetland. During the monsoon, all wetlands were flooded by the rising water of the Ganges.

Sub Villages of Mokama:-

Badpur, Balwa, Daudpur, Trimuhani, Dhanak Dobh, Dharampur, Gorihari, oshain Gaon, Goshwari, Hathidah Buzberg, Isannagar, Jalatpur, Karara, Koti Kurmichak, Milki, Mohanpur, Murarpur, Narainpur, Paijima, Pancha, Se Sherpur, Surtapur

- Language: Hindi and Magathi, Matari, Bopri, English, Angie
- Altitude / Altitude: 48 meters. Above sea level
- Phone code / standard code: 06279
- Vehicle registration number: BR-01
- RTO Office: Patna
- Parliamentary constituency: Okaka parliamentary constituency
- The work focus of this conference: anant kumar singh
- Lok Sabha Constituency: Munger Council Constituency
- Current MP: Rajiv Ranjan Singh ALIAS LALAN SINGH

### ***Economic***

The main occupation is agriculture, and the town is surrounded by farmland. The main crops include lentils, chickpeas, and mustard seeds. Many vegetables are grown here. Papaya, guava and mango are some common fruits. However, the main plots of Diara and Tal lands were inundated for three months a year.

Factories include McDowell and Bata Shoes, Spinning Mill, and Bharat Wagon and Engineering.

### ***Transport***

Mokama is connected to all major cities in India by rail and road. [HATHIDAH] is the intersection of NH 80 and NH 31. Mokama Junction is the train station.

### ***Demographic***

As of the 2011 Indian Census, the population of Mokama neighborhood is 84129. Men account for 52.2% of the population and women account for 47.8%. Mokama's literacy rate is 96.4% higher than the state average of 61.80%. Hindus accounted for 94.34%, the rest was 5.66%. Among 5.66%, Muslims accounted for 5.11%. In Mokameh, the male literacy rate is about 99%, while the female literacy rate is 93.8%. The population of children aged 0-6 is 8995, accounting for 14.82% of the total population of Mokami. The city 's literacy rate is 10.99% (72.79%) higher than the state average of 61.80%. In Mokameh Nagar Parishad, the female sex ratio is 880, while the state average is 918. In addition, the sex ratio of children in Mokameh is 869, while the state average of Bihar is 935.

## **XIX. RESEARCH ANALYSIS OF FORMS(QUALITATIVE ANALYSIS)**

Research analysis will mainly shows the floodplain in the area. How the agricultural system is damaged. What can be done with the floods in the area and what steps can be taken for regional development. Research will be the mainstay of analysis.

## **XX. FLOOD SITUATION IN MOKAMA TAL:**

The research paper presented mainly considers agricultural damage and coordination of Mokama Tal, but it will be necessary to consider the frequency of flood affected areas and sub-regions here. Table (1) Describing some of the sub-regions of the Tal region which are affected by the floods.

**Table 1:** Area of sub-areas of Mokama Tal (in hectares)

S.I.	Name of the Main Stack	Area Expansion
1	Pandarak	13200
2	Mor	21500
3	Mokama	20000
4	Barhiya	17100
5	Singhaul	12400

**Source: Water Resources Department (Government of Bihar)**

Thus it is clear from Table (1) that the Mokama Tal is divided into several sub-Tals, and is a small part of Patna District. The region has many rivers like Mahane, Ghanein, Khedupokhar, Gaga, Bari Harohar and many other endemic Ahar and Pein. Where water comes to a halt during floods and creates marshy saline land. All these rivers originate from the plateau of Chhotanagpur.

## **XXI. FLOODS AND AGRICULTURAL DAMAGE IN MOKAMA TAL**

Four agricultural crops are produced in Bihar, Rabi, Garma, Bhadai and Aghani. First of all, the rainy season is the time of flooding in this area, so the firefat crop is not possible because the drainage of water from the area is not possible until the sowing of the fire fruit crop is over. The bhadaï crop becomes a victim of flood disaster because the crop is still half-ready by the time the flooding starts, causing the crop to be ruined, due to which the farmers do not even apply the bhadi form of the crop. The frequency of flooding occurs every year. And occurs at the peak. Whereas in summer, this region experiences severe heat. Local water sources dry up. On the other hand, the land is also not irrigated. Irrigation grant is not received on time that a lot of land is irrigated, so that moong, urad and Vegetable can be cultivated. Thus, the summer crop is also equal. Only Rabi crop season is favorable for the farmers, at this time pulses, mainly lentils, khesari, gram and gram-wheat are planted. Peas are planted in pulses. Oilseeds are cultivated around villages where irrigation facilities are available. Thus, 75 % of the agricultural activity in the region, ie, three parts of the agricultural season, goes vacant, only one time is Rabi agriculture. Thus there is more agricultural damage in the area. On the other hand, whatever happens to be a crop, it is also the victim of untimely cyclones, frost, lahi and kit feeders. To avoid this, pesticide is used, which takes a lot of capital, which increases agricultural costs. Farmers are devastated by increasing agricultural costs.

This frequency of agricultural damage varies from village to village. The village which is near big rivers and there is a lack of sovereignty, where there is more agricultural loss. This area is mainly part of the middle Tal, while the northern Kutchhari part of the Tal is relatively high, where the waste is less, Whereas in the southern frontier, the flood water reaches late and also goes out first.

## **XXII. COORDINATION WITH FLOODS IN THE TAL REGION AND REGIONAL DEVELOPMENT**

It has been human nature to fight against any disaster and develop it, but the problem is that the way of taking initiative, governmental cooperation is required. In coordination with the flood in the Tal area, two major options for development emerge. The first is to grow aquaculture and grow Singhara, Makhana at the time of flood because the water logging is on average 3 months. The second option is to initiate fishing, sieve the entire area through the mahajal, and fish are sent from the hatchery and dumped, even after drainage, the fish can get stuck in the rivers in the river. As far as the area is concerned, hot agriculture can also be done. The unharvested crop can also go to limited high areas by preparing the crop variety to be prepared in a short day. Whereas, water harvesting can be done by preparing crop tolerant crops. As it is noteworthy that the Rabi crop is a victim of disaster and instead of pulses, a medicinal mudrai crop like aloe vera can be planted, for this the soil here is also mentioned above. Sugarcane cultivation and linseed and jute farming can be done in areas with high floods. Cooperative community agriculture can also be developed by insuring the entire Tal region. Fruit production can also be done by planting fruit plants in the aquatic part. This will also increase the physical nutrition of the people of the area.

## **XXIII. EVALUATION**

From the point of view of the basic elements of research analysis, many doors have been opened for the development of the field in the research field, which will require governmental and capital support.

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