

Social Constraints and Vulnerabilities to Agricultural Practices in Ghazipur District: Case Study of Saidpur Block

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ABSTRACT

In India, agriculture is practiced since Indus valley civilisation. The unique physiography and climatic system support agriculture at a very large scale. Several reports and research papers have documented that about 65% to 70% of the country population is still dependent on the agriculture for meeting their basic livelihood needs. Nowadays, agricultural system is facing a lot of social and natural issues that leads to its vulnerability. Uttar Pradesh is a major contributor to the food production of this country as the region falls in the Indo-Gangetic plains. Major social, economic and institutional constraints faced by the agricultural system in the Ghazipur district of Uttar are investigated in the paper. The district is situated along the two major rivers Ganga and Gomti. The present study may lead to identifying the major challenges faced by the farmers at the ground level.

Keywords: Gatekeeper, Suicide Prevention, Psychiatric Social Work, Self-Harm, Psychosocial Intervention

INTRODUCTION

In the modern India the agricultural sector is considered as a sector of low economic growth (Singh, 2013). Agriculture is highly connected and interrelated with both the natural and social factors. Natural factors include local climatic factors (rainfall, temperature, and humidity) and global climatic factors, including El Nino/Southern Oscillation (ENSO) events which have an impact on the vast area; whereas social issues are related

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to income disparity, technological advancement, landholding and much more other are restricted within a region. Agriculture is not only most susceptible to the local and global climatic changes (Parry and Carter, 1989), but it is also equally vulnerable to the social problems. Climate change and its variability have numerous impacts on the agricultural cropping pattern (Pathak, Ladha, & Aggarwal, 2003). The rapidly changing pattern is evident and there is an urgent need of addressing its ramification on agricultural production and adaptation (Howden et al., 2007). Recently, many studies have mentioned that in India agriculture productivity is declining with the climate change (Rao & Sinha, 1994 and Saseendran, Singh, Rathore, Singh, & Sinha, 2000).

There are different kinds of social constraints that are mentioned and may vary from region to region, district to district, state to state and country to country.

Agriculture is the main occupation in the state of Uttar Pradesh where more than 60% of the population is engaged in the agricultural sector (PHD Chamber of Commerce and Industry, 2011). The study area is situated in Ghazipur district of Uttar Pradesh state of India (map no.1). The city of Ghazipur is the district headquarters of the district. It is situated between 25°19 and 25°54 North latitude and 83° 04 and 83° 58 East longitudes. For the primary survey, five villages are selected from Saidpur block of Ghazipur district, which includes Sidhauna, Rampur, Amehta, Echwal and Pathkholi (map no.1).

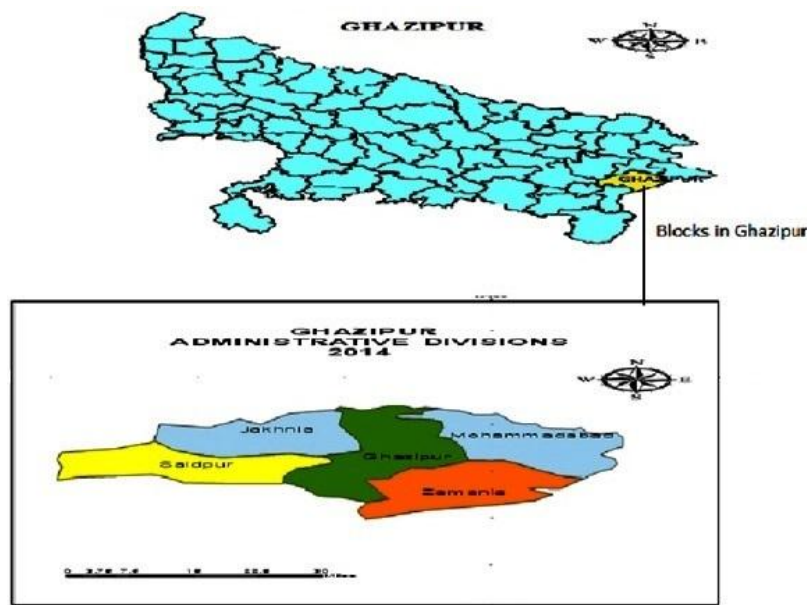
The study will look at the agricultural vulnerabilities through the lances of social constraints. There are several challenges to agriculture in the district that includes the water availability, it is recharging, allocation and management, changing quality of ground and surface water, and degrading soil quality. However, the problem which is really taking the shape of demon and challenging the agricultural sustainability is related to the socioeconomic and institutional constraints. The two major objectives of the study are:

- To understand the social and irrigational constraints and challenges in the agricultural management.
- To suggest strategies for the sustainable management of the agriculture practices.

DATA COLLECTION AND METHODOLOGY

Data used in the study are from both the primary, as well as the secondary sources. During the primary data collection surveys, interviews and

direct observations were done in the five villages of the Saidpur block. The primary data have been collected from nearly 60 households. The information comprises regarding their age composition, educational status, income status, varied inputs used in agriculture, a number of tube wells their shortage and major financial problems. The secondary data are used from DCH (district census handbook), 2001 and 2011. A wide variety of bar, pie and other diagrams are used in this paper for interpretation of the primary and secondary data.



Map No. 1 Location of the Study Area

RESULTS

Socioeconomic Characteristics of Selected Villages of Ghazipur

There are serious and growing concerns about the impacts of rapid population growth on land. The present section deals with the subjective evaluation of assessing the social constraints and challenges faced in agricultural management and to understand farmer's view point about the problems faced in the effective usage of the available resources. Several scholars have mentioned that the agriculture issues and adaptation technique may vary according to different farm types and location, social,

political and institutional situations (Tol, Frankhauser, & Smith, 1998 and Smit, Burton, Klein, & Street, 1999).

The socioeconomic characteristics of sample farmers include age composition of the respondent's selected family size, education, social and occupation, income status and its source.

Population of the Sample Villages

The personal and household characteristics of the respondents of the selected villages are presented in the table 1. It provides a broad picture of social parameters of the selected villages of the Saidpur block of Ghazipur district. Information is provided regarding the total population both male and female, schedule caste and schedule tribe and literacy.

Table 1: Village Wise Population in the Sample Villages of Ghazipur District

<i>Villages</i>	<i>Total Area</i>	<i>Total population</i>	<i>Total Male</i>	<i>Total Female</i>	<i>Literate</i>	<i>Schedule Caste</i>	<i>Schedule Tribe</i>
Sidhauna	208.3	2749	1368	1381	1591	854	16
Rampur	160.6	2617	1300	1300	1317	1323	-
Amehta	19.0	287	154	154	133	147	-
Echwal	92	753	382	382	371	453	-
Pathkholi	07	138	72	72	66	48	
	(Area in hectares)	(In thousand)					

Source: District Census Handbook, 2011

Age Composition

With the growing demand in the service sector, the movement of younger population is towards the city. Larger the number of people involved from the old group more inefficient utilisation and management of the use of agricultural lands. Though experiences of the middle to old age farmers are of high cost, but they do not hold much exposure to new advancements and new existing technology. A primary survey has been conducted in five villages for knowing the age groups involved in the agricultural sector of the district.

Table 2: Age Composition of the Agricultural Workers

<i>Age group</i>	<i>Age Range (in years)</i>	<i>Number of Respondents</i>
Young	<20	11
Middle	20-50	18
Old	>50	21

Source: Based on Primary Survey

As it is clear from the data that out of 50 farmers during the survey, only 11 from young age group are involved in the agricultural sector where as the number is increasing when we are moving into the middle and old age groups. The highest number of the worker involved in the age group of old, which is a challenge and growing concern for this primary sector activity.

The existing problem is to bring youth in this sector to upgrade the present status of irrigated agricultural land in the district to meet the sustainable agricultural development.

Educational Status of the Respondents

Education is considered as one of the major indicators of socioeconomic development of any region. Education is thought to be most important to farm production in a fast-changing technological or economic era (Schultz, 1964). Higher the level of education will help the farmers in understanding technological innovation in a better and improved way. In other words, higher education status among the farmers will lead into reducing the social and economic challenges faced by the agricultural sector. A survey of farmers has done to look at the educational status of the villages.

Table 3: Educational Status of the Respondent

<i>Categories</i>	<i>Small land holding farmers</i>	<i>Medium land holding farmers</i>	<i>Large land holding farmers</i>	<i>Total (in Percent)</i>
Illiterate	23	06	-	29
Literate				
A. Primary	07	11		18
B. Secondary	10	17	08	35
C. Higher	01	06	11	18

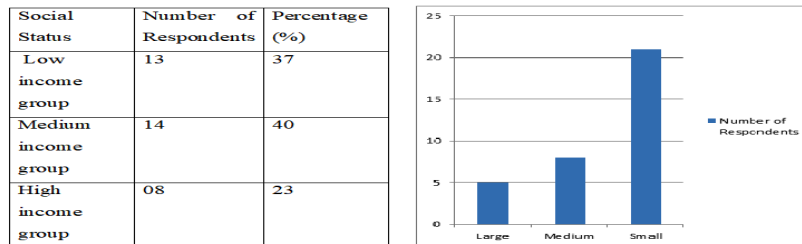
Source: Based on Primary Survey

From the above available data, it is evident that 29% of the farmers are illiterate; whereas 71% of the farmers are literate. The percentages of illiteracy of small and medium farmers are higher than the farmers who have more land. An interesting fact that came out from the study is that the farmers with the large size of land having a better education than the farmers who have a small size of land.

The economic condition of the small- to medium-sized land holding farmers has an impact on education whereas the farmers who have large agricultural fields having more income and more education.

Economic Status and Family Size of the Respondents

The economic status and family size play an important role in effective utilisation and management of the available agricultural resource. Large proportions of medium- and low-income group farmers are found during the surveys who are involved in the agriculture because of their small farm size. As these farmers do not have higher education and exposure of the outer world.

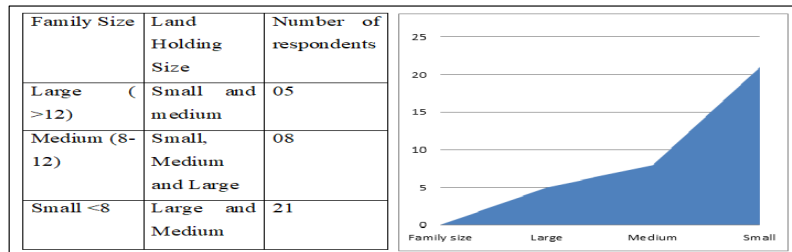


Source: Based on Primary Survey

Fig. 1: Economic Status of the Respondents

Families with low and medium status constitute about 77% of the survey population. The proportion of the population which has a higher level of economic status constitutes only about 23%.

It is generally seen that the illiterate population who have a small or medium size of land have more family members in comparison to the large land holding farmers. During the survey of 34 families of the five villages, it was found that the families having more than 12 members contribute 14% and they are generally small and medium farmer families whereas there were about 24% families in which the family members are between eight and 12 people. The families which include members less than eight constitute about 60%.



Source: Based on Primary Survey

Fig. 2: Family Size of Respondents

It is revealed that through the survey and analysis that larger size families are found concentrated among medium and small land size holding farmers that in turn creates a pressure on agricultural land to meet the demand.

Occupational Status of Respondents

The occupational status of respondents divided into primary, secondary and tertiary. About 74% of respondents are engaged in the primary sector, 18% are in secondary and only 8% in the tertiary sector. Due to the high concentration of population engaged in primary-based activities, large pressure exists over the land resource. The demand for irrigation water is very high as a result there is greater exploitation extraction of the potential of resource available to meet the demand.

Table 4: The Occupational Structure of the Respondents

<i>Occupational Sector</i>	<i>Number of Respondents</i>	<i>Percentage</i>
Primary	29	74
Secondary	07	18
Tertiary	03	08

Source: Based on Primary Survey

It can be inferred that from the data provided in the primary survey that low level of industrialisation and availability of agricultural lands leads the population to concentrate in the primary sector.

Institutional Constraints

Institutional constraints in agriculture sector play a lackluster role in agricultural performance. The institutional constraints rise from the problems faced due to the agriculture supporting institutions.

Varied Inputs Used in the Existing Farming System

Agriculture system is dependent on varied institutional inputs for the farming system. The farmers using the irrigation services intensively for farming will dependent on availability from the available institutions. The available inputs are:

1. Natural Source for Irrigation
2. Human Labour
3. Financial
4. Infrastructure

These are the inputs which are selected for the study that plays a very important role in agriculture.

Analysis of Varied Inputs in the Villages

The analysis of varied inputs showing that natural source of irrigation is maximum times used by the small farmers followed by the medium and large farmers. This is due to the economic condition of the small farmers. About 69% of the small farmers are dependent upon the natural source for irrigation because they cannot afford the cost of other artificial sources of irrigation while 23% of the medium categories of farmers dependent upon the natural source of irrigation and only 7% of the large farmers use natural sources for irrigation.

Table 5: Varied Inputs in Agriculture

<i>Varied Inputs</i>	<i>Small Farmers</i>	<i>Medium Farmer</i>	<i>Large Farmers</i>	<i>Total</i>
1. Natural Source for Irrigation	27	09	03	39
2. Human Labour	-	07	16	23
3. Financial	17	11	02	30
4. Infrastructure	07	16	21	39

Source: Based on Primary Survey

The large farmers have the better economic condition and therefore, they are the one who has the highest number of human labour to work in their field. The reasons are:

- Migration of the family members due to high education
- High income from another source.

The medium farmers are in a small percentage if we look at the human labour section as the reasons are:

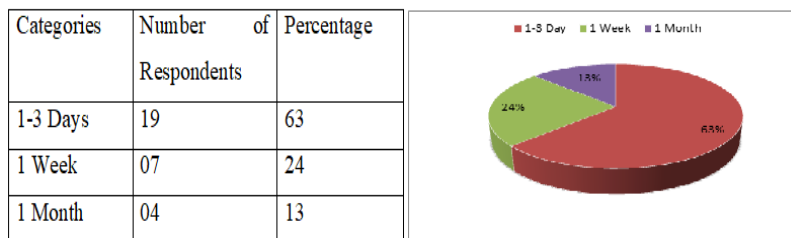
- A large number of family size
- The small size of land
- Disguised unemployment prevails there

If we look at the infrastructure, then again the data is showing the small size farmers are more dependent on the infrastructure provided by the government in comparison to the medium and large land holding farmers.

Shortage of Water Supply from Tube Wells

Water scarcity has a huge impact on agricultural production and system. Water is a prime necessity of the agriculture that in turn enhances the agricultural production and help in meeting the demand of the growing population.

Shortage of water supply from tube wells causes scarcity of more water than necessary to be used for the crop. The shortages faced in the villages are due to water supply shortage from the tube wells have been categorised into three categories.



Source: Based on Primary Survey

Fig. 3: Water Supply Shortage from Tube Wells

Among all the farmers about 63% of all the farmers are facing a water shortage of 1 to 3 days whereas 24% of the farmers are facing this problem for 1 week and 13% for 1 month. The reasons for the shortage are:

- High demand for irrigational water and less number of tube wells existing in the villages.
- With the increasing agriculture land, the number of government tube-wells is unable to fulfil the demand.
- Social tensions among the people in which caste and religion is a major factor.
- Man-made temporary courses which cause water loss.
- Power cut and the availability of electricity for less than 8 hours is also a major factor.

- A low economic condition which does not allow them to take water from the tube wells which are running through diesel as they are costlier than the tube wells which are running through electricity.

These are the six basic reasons that cause a shortage in the supply of water to the irrigational land. Proper irrigation facilities and management lead to the agricultural areas to increase the number of crops being produced.

Available Institutional Facilities in the Villages

The available institutional facilities in the five villages affect the overall agricultural system. It was found that the local merchants plays an important role and act as small private groups in providing funds as when needed for buying inputs, such as seeds, fertilisers, money for irrigation. They are the major source for assistance regarding credits and loan to farmers.

Table 6

<i>Institutions</i>	<i>Available institutions</i>	<i>Dependents</i>	<i>Percentage of Dependents</i>
Irrigational Department	1	7	23
Agricultural Department	1	5	17
Co- operative societies	3	7	23
Government Banks	4	3	10
Local Merchants	9	8	27

Source: Based on Primary Survey

It was found during the survey that a total 30 farmers 23% are dependent upon the irrigational department, 17% on the agricultural department, 23% on co-operative societies, 10% on government banks and 27% on local merchants. From the data, it is clear that the small- and medium-sized farmers are mainly dependent upon the private merchants due to their poor socioeconomic conditions. The government machinery are a big failure in the region.

Pricing of Irrigational Water

In India, the scope of the private irrigational system is having very limited (Vaidyanathan, 1996) whereas public sector is not up to the standard to maintain the agricultural system in northern plains. Mainly two kinds of tube wells are available in the villages for irrigational purpose.

Table 7: Pricing of Water Charge in the Villages

<i>Tube wells</i>	<i>Charge (Per Hour)</i>	<i>Affordable (percent)</i>	<i>Not Affordable (percent)</i>
Electrical	50	69	37
Diesel	120	31	63

Source: Based on Primary Census

The data is showing that the charges for one hour of irrigational water from electric tube wells are 50 Rupees whereas the charge from the diesel tube wells is 120 rupees. Both the categories of tube wells are owned by the private owners. About 69% of all the farmers are agreeing with the view that the charges of electrical tube wells are affordable and 31% are saying that the charges are not affordable. They are the farmers who are dependent upon the:

- The natural source for the irrigation
- On government tube wells

Working Performance of Existing Government Institutions

Indian agriculture is at a very crucial stage of transformation and one of the major challenges is the declining agricultural growth (Sharma, 2007). The working performance of different government institutions, such as irrigation department and agricultural departments, is inefficient in the district.

Table 8: Working Performance of Government Institutions

<i>Categories</i>	<i>Number of Respondents</i>	<i>Percentage (%)</i>
Improper Operation of the tube wells	18	45
Poor Maintenance	13	33
No effective measurement carried	09	22

Source: Based on Primary Survey

On the basis of a primary survey, it was found that 45% were the respondents who were saying that there is the improper operation of the existing tube wells of government and 33% were in the favour of poor maintenance. About 22% of total farmers are in the view that the available water resource is not equally allocated and there is misutilisation of the resources. The reasons for this are:

- Biases among the poor and rich farmers
- Lack of co-ordination among the different departments of agriculture
- Corruption because of illiteracy and castism
- The inadequacy of the institutions

DISCUSSION

In the present, we have tried to illustrate major social and institutional constraints related to the agriculture in sample villages of Ghazipur district. The major concern arises from the irrigation sectors are:

- Underutilisation of irrigation capacity
- Availability of electricity for irrigation
- Inequity in irrigation
- Financial irrigational management

On the basis of a primary survey, it is observed that the availability of the ground water resource in the villages is in large quantity which is underutilised. If there is full utilisation of the available resource in a sustainable way, then it is very easy to achieve high productivity which will help in meeting the demand of the population. The availability of electricity is confined to eight hours which is a severe constraint for the farmers. This adversely affects their agricultural operation and thereby production and productivity. The electricity is either available in day or night. Irrigating the agricultural field during the night is inconvenient. The farmers do not want to go to the fields for irrigating the fields during night hours due to poor law and order situation and larger risk to their safety. Electrical tube wells are best suited for continuous pumping of water from any depth. Because of non-availability of electricity farmers have to rely on the diesel tube wells which are quite costlier than the electrical one. There is also inequity in irrigation availability as the interviews revealed very shocking response related to a societal concern. The two major reasons are:

- Due to the interpersonal reasons
- Due to the inter-caste/class conflict

The issue of financial irrigational management institution is very important to discuss here as it is of such overriding consideration that all other problems are subsequent to this concern. It is not to be an exaggerating to state that all other problems stated earlier are largely the fall out of the problems of financing irrigational management.

When we look at the social and economic constraints the small land holding and poor farmers are the one who is struggling for their bread as they are not able to progress in terms of education and economy. Government support is very minimal and this forces the young population to move towards the industrial cities in the country. The survey result is providing the ground reality of the challenges faced by the farmers.

SUGGESTIONS AND RECOMMENDATIONS

There is an urgent and essential need to educate the farmers. Education will bring into many changes which open the easy path for the farmers to earn their livelihood. The primary survey is showing that the medium and small farmers are facing a lot of challenges, such as economic problems, social problems, institutional problems and educational problems. A special attention needs to be given to this section of society as they are mainly involved in the farming sector. The problem of non-cooperative attitude of the institutions and their officials is also a cause for irregular and insufficient agricultural production. A better relationship between the officials and the farmers can help in solving the problem.

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