An Overview of Susari Village

The Susari village is located in the Baheri block of Darbhanga district in Bihar. It is about 45 km from Darbhanga. Literacy level is very low and there is a complete dearth of higher education in the village. The village has multi-caste population, dominated by Other Backward Castes (OBCs). Agriculture is the major economic activity of the village but about 50 per cent workforce get employment in the non-farm sector. Despite fertile soil, agriculture of the village is still under-developed, mainly due to small size of landholdings, frequent floods and poor infrastructural facilities, including collapsed agricultural extension system. The farmers are not aware about the modern technologies and their skills also need upgration. Poor access to improved seed varieties worsens the situation still more.

Paddy and finger millet have been the traditional major crops of Susari in *kharif* season, but finger millet area has been shifted to paddy cultivation during the past 20 years. During post–green revolution period, wheat has been introduced in *rabi*-season crops. About 85 per cent area is irrigated and tube-well is the main source of irrigation. Farmers provide survival irrigation only to crops due to high cost of tube-well irrigation. About 12 per cent of operated area is under tenant cultivation, but the tenancy is more prevalent among landless households. Work participation is comparatively low in the village, but the majority of large households are engaged in agriculture and non-farm activities.

The village is rich in livestock, but buffalo is more common among large households. However, investment on cattle is higher on all the categories of households, indicating possession of improved breed of cattle in the village. There is no organized system of milk marketing in the village. Bullock ploughing is still prevalent; however bullocks are being replaced by tractor but the pace of replacement is very slow.

There is lack of healthcare facilities in the village, for both human beings and livestock. The only Primary Health Centre is non-functional and facilities for even artificial insemination (AI) of cattle do not exist.

On the social front, there is high addiction to alcohol and smoking, particularly of elderly menfolk, lack of women participation in decision making, and discrimation between boys and girls in sending to schools. There is no facility for recreation in the village. *Purda* system is prevalent even today and young women specially brides, are not allowed to move alone in the village.

Out-migration is common in the village. The majority of out-migrants are engaged as daily wage earners in cities within and outside the state. Migration for a salaried job is low due to low level of education in the village.

The village does not have easy access to any organized marketing system. Primary Agricultural Co-Operative Credit Society (PACS) is almost non-functional and there is no arrangement of providing quality agricultural inputs to the farmers in the village.

The village is still underdeveloped with respect to agriculture, education and economic status. However, there are signs of improvement which need institutional intervention for a faster development of the village.

The village does have some strong opportunities. These include crop diversification towards medicinal and aromatic plants, cultivation of off-season vegetables, organic farming and establishment of food processing units in the locality. The strengths, if exploited, would provide employment and income opportunities as well as check migration from the village.

- With increased irrigation facilities coupled with readiness to undertake hard work, the farmers of this village could diversify their cropping pattern towards medicinal and aromatic plants, which have a big demand in the market and can provide more income to the farmers.
- With the introduction of summer cropping, the farmers may cultivate off-season vegetables which have a big market demand and can contribute towards increase in farmers' income
- With the availability of compost in the village, farmers may opt for 'organic farming' since organic products have a premium price in the market.
- There is a considerable potential for establishment of food processing units in the locality which will provide local employment and check migration from the village.

1. Introduction

A mega project on **"Tracking Change in Rural Poverty in Household and Village Economies in South Asia"** is being undertaken by National Centre for Agricultural Economics and Policy Research (NCAP), New Delhi and International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad. The project has been sponsored by Bill and Melinda Gates Foundation and aims at understanding the dynamic process for reducing poverty in the poverty-laden agro-ecologies of South Asia by tracking the household and village economies continuously.

The Eastern India being one of the most poverty–laden regions in terms of both prevalence rates and total numbers has been identified as one of the regions for study under this project. Reducing poverty in Eastern India has been a big challenge and the successful implementation of this project is expected to contribute to our understanding of the complex poverty dynamism in the region. In Eastern India, the NCAP will focus on three states, namely Bihar, Jharkhand and Orissa.

The overall objective of the project is to help evolve appropriate and effective strategies for accelerated reduction of poverty in South Asia. Specific objectives of the project are:

- To enhance the availability of reliable household, individual and field-specific, high frequency, time series data in selected villages and at meso-level (e.g., district level) to address the dynamics of economic, social and institutional development, and
- To nurture policy analysis and strengthen capacity building for poverty reduction in South Asia, and Eastern Region of India is one of the regions.

Collection of longitudinal data on household, individual and field levels in selected villages is one of the major activities. Twelve villages have been selected in Eastern India for continuously tracking the changes in rural economies under the project. The Susari village of Darbhanga district in Bihar is one of the selected villages. Before selection of sample households for continuous monitoring, the village census has been conducted in each selected village to understand the general and socio-economic profile of the village. This village profile is based on the village census carried out and qualitative information gathered by the project team.

2. The District Darbhanga

2.1. History

The name 'Bihar' is probably derived from the existence of a large number of *Buddhist* monasteries called '*Viharas*' in this part of the country in the twelfth century. Bihar has two distinct geographical regions, viz. south Bihar and north Bihar. In north Bihar, the *Maithili* culture predominates and reminds us about one of the great *Vaishnava poets, Vidyapati* who wrote devotional songs in the *Maithili* language.

The district of Darbhanga is a derivative of ancient Mithila or Tirhut, although two other districts Madhubani and Samastipur have been carved out from the older Darbhanga district. It is a central place in the territorial boundaries of north Bihar. *Madhubani* was the part of the Darbhanga district which has a rich tradition of wall paintings, based mainly on the tales of *Ram* and *Sita*; these have received a fresh lease of life in recent years. The paintings, done mainly by the women, have been attracting the attention of lovers of ancient and folk arts and are one of the traditional treasures which modern India has rediscovered and revived.

Presently, Darbhanga district is spread across a total geographical area of 2279 sq km. It is situated between longitude 85° 45'- 86° 25' East and latitude 25° 53' – 26° 27' North and is bounded by Madhubani district on the north, Samastipur district on the south, Saharsa district on the east, and Sitamarhi and Muzaffarpur districts on the west.

As per the Census of India 2011, the population of this district is 3,921,971 of which rural population is more than 90 per cent and urban population is less than 10 per cent. The literacy rate of the district is 58.26 per cent (male 68.58%, female 46.88%).

2.2. Natural Divisions

The district Darbhanga can be divided into four natural divisions. The eastern portion consisting of Ghanshyampur, Biraul and Kusheshwarsthan blocks contains fresh silt deposited by the Kosi river. This region was under the influence of Kosi floods till the construction of Kosi embankment in the Second Five-Year Plan. It contains large tracts of sandy land covered with wild marsh.

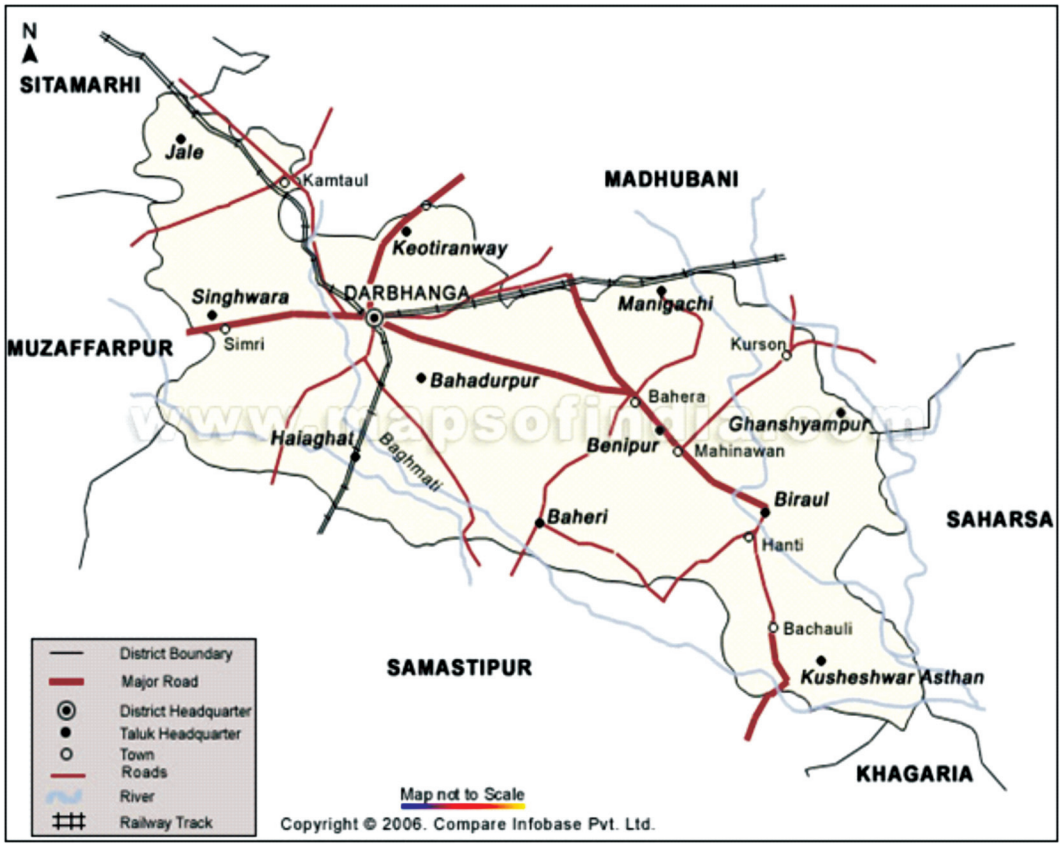

Figure 1 : Road map to Darbhanga district

The second division comprises the anchals lying south of the Boorhi Gandak river and is the most fertile area in the district. It is on a higher level than other parts of the district and contains only a few marshes. It is well-suited to the *rabi* crops. The third natural region is the doab between the Boorhi Gandak and Baghmati rivers and is consisted of low-lying areas dotted over by chaur and marshes. It gets floods almost every year. The fourth division covers the Sadar sub-division of the district. This tract is watered by numerous streams and contains some up-lands.

The district Darbhanga has a vast alluvial plain devoid of any hills. There is a gentle slope from north to south with a depression in the centre. Numerous rivers originating in the Himalayas, water this district. Out of these rivers, Kamla, Baghmati, Kosi and Kareh are most important. The land in Darbhanga district is generally very fertile and there are hardly any uncultivated area. The district is, therefore, devoid of forests.

Field investigator collecting data from a household

2.3. Climate and Rainfall

The district Darbhanga has semi-humid type of climate. The district has three well-marked seasons—winter, summer and rainy seasons. The cold weather begins in November and continues up to February, though March is also somewhat cool. Westerly winds begin to blow in the second half of March and temperature rises considerably. The month of May is the hottest when temperature goes up to 45 °C. Rain sets in towards the middle of June. With the advent of rainy season, temperature falls and humidity rises. The moist heat of rainy season is very oppressive up to August. The rains continue till the middle of October. The average rainfall is 1142.3 mm and around 92 per cent of the rainfall is received during the monsoon months. The rainfall has decreased over the years and there is a lowering of groundwater level in the district.

2.4. Language

The main language spoken in this district is *Maithili*. Other languages spoken are: Hindi and Urdu. The number of residents conversant with English is small but increasing continuously.

2.5. Biodiversity

The district Darbhanga had a rich biodiversity till the end of 18th century. But, with intensive use of land and rapid growth of population, the forest areas have been cleared and several wild animals have become extinct. Among the trees found presently in the district are: Sisam, khair palmyra, khajur, mango, jackfruit, pipal and tamarind. The district also has some tracts of grasslands. Among the wild animals commonly seen are jackals. Foxes and wild cats are also met occasionally but wolves and hyenas are seen rarely.

Among the birds found in the district are various kinds of quails, partridges and ducks, snipes, cranes, storks and sparrows. Fish are plentiful. The common varieties are: Rohu, Bachwa, Tangra, Katla, Singhi and Boari. However, Hilsa is found occasionally.

3. The Village Susari

3.1. History

The name Susari of the village has been derived from a composite name of two birds, viz. *shuk* and *sari*, which are the Sanskrit names of 'parrot' and 'myna', respectively. It is said that in ancient times a large number of birds used to chirp in this village and its surrounding area and among these birds, parrots and mynas were in domination. That was the basis for naming this village as '*Shuk-Sari'*. Since the syllable 'k' in *shuk* needs a pause before uttering the word *Sari* and this makes the pronunciation of the composite word *Shuk-Sari* lengthy, the syllable 'k' started receiving a silent status and with times it was dropped even from the spellings of the village name. That was how the name Susari was evolved. The village has a Shiva temple which is famous by the name *Ratneshwar Nath Temple*. It was built by Narsingh Sahay 500 years ago in the memory of his only son named Ratneshwar Lal. There is another famous Shiva temple in this area by the name '*Kusheshwarsthan*' but it is about 65 km from Susari.

3.2. Location

The village Susari (26° 01.764' N, 86° 05.051' E) falls under Baheri block of the Darbhanga district in Bihar. It is about 45 km from the district town (Darbhanga). The block headquarters, Baheri Bazaar, is about 15 km from this village.

The village Susari is surrounded by three villages; *Bithoula* on its south, *Mohali* on its west and *Trimuhani* on its east and a river flows on the northern side of this village. It is a thickly populated village and the residential part of the main village is located within a radius of about three kilometres. It is the village *Trimuhani* from where the river *Kamla* after passing through the village Susari, starts flowing in three streams (that is why this village is called *Trimuhani*). The village is surrounded by fields, though there are some small fields within the main village also.

3.3. Road Connectivity

The road connectivity of Susari village is poor. On one side, there is a brick-made road and one has to travel/walk about 2 km on this road to reach the

village *'Bithouli'* from where there is a well-maintained road to a town called *'Laheria Sarai'*. On the other side, one has to walk about 4 km to reach another village called *Shankar Lohar Chowk* from where there is a 10–km long pucca road to the block headquarters of Baheri.

3.4. Major Past Events

A chronological list of major past events presented in Box 1, indicates the general development pathways of the Susari village.

Box 1: Important Past Events in Susari Village

Year		Event
1378	-	Formation of village Susari
1379	-	Construction of *Gram Devta* temple
1401	-	Construction of old Shiva temple
1904	-	Elementary school started
1916-25	-	Frequent droughts
1934	-	Cholera outbreak
1934	-	Earthquake
1957	-	Gram panchayat set up
1964	-	Cholera outbreak
1970	-	Private tuition started
1971	-	Introduction of PDS programme
1974	-	Flood
1980	-	Construction of a mosque
1980	-	Construction of Panchayat Bhawan
1981	-	Establishment of Middle School
1981	-	Primary Health Centre set up
1982	-	Private health clinic started
1984	-	Flood
1987	-	Flood
1988	-	Earthquake
1988-89	-	Severe drought years
1993	-	First *Anganwadi* set up
1995	-	Post Office established
2000	-	Middle School upgraded
2002	-	Electric supply started for households
2004	-	Flood
2006	-	MNREG Scheme started

3.5. Demographic Structure

The village Susari is thickly populated. In the year 2010, the total population of the village was 4,494 and the number of households was 644. A large population of this village is poor and comes under the category of 'Below Poverty Line'. The number of landless population in the village is 3413 and the number of landless households is 511. The percentage of landless households is maximum (79.4%), followed by small (10.6%), medium (5.4%) and large (4.7%) households. The average family size is worked out to be minimum (6.7) for a landless household and maximum for a large (8.8) household, depicting an inverse relationship between land size and family size. The overall sex ratio is 815 in the village. This ratio is higher at 859 in large households and lowest in landless households (813) (Table 1).

Table 1: General characteristics of household in Susari village

Particulars	Households				
	Landless*	Small	Medium	Large	All
Number	511	68	35	30	644
Age (years)	23.7	25.5	26.7	25.8	24.2
Education (years)	2.5	4.2	5.0	5.8	3.0
Family size (No.)	6.7	7.6	8.5	8.8	7.0
Household headed by male (%)	94.4	94.3	97.2	96.7	94.6
Sex ratio (per 1000 males)	813	811	801	859	815

*The group 'landless' in this volume includes all such households which do not possess any land or possess land up to 0.5 acre.

3.6. Status of Education

The educational level is awfully low in the village with a person undergoing schooling for 3 years only on the overall basis. The members of even medium and large households do not opt for education beyond the primary level (Table 1).

The village is highly deficient in educational infrastructure. An elementary school was established in this village in 1904 and it continued to remain an elementary school for more than 75 years. It was in 1981 that this school was upgraded to lower middle level (i.e. up to 7th class). After about a century of its establishment, it was again upgraded to higher middle level (i.e. up to 8th class) in 2007. There is no high school in this village and children walk for about 3

Children at study in the village school

Table 2: Literacy rate across different categories of households in Susari village

Particulars	Households				
	Landless	Small	Medium	Large	All
All	45.0	63.7	74.0	76.7	51.1
Male	54.9	76.8	84.5	87.7	61.4
Female	32.9	47.9	60.7	62.8	38.3

km to a nearby village Bithouli for attending post-middle classes. Out of the 1280 boys and girls (6-16 years), only 777 are enrolled in the middle school of the village.

The literacy level is 51.1 per cent in the village. The male literacy is much higher (61.4%) than female literacy (38.3%). The considerable variation between male and female literacy is pervasive across all categories of households. The male literacy level is higher than their female counterparts on all the categories of households in this village. Again, male, female and overall literacy level is highest among large farm households and lowest among the landless category (Table 2).

Muslim children reading in the mosque of Susari village

3.7. Social Structure

The traditional joint-family system is largely prevalent in the village and there are only a few nuclear families. The joint-family system is of great help to those households from which some adult male members have migrated for earning a livelihood. The family is looked after by the in–stationed members in such cases. However, non-resident members visit the family at the time of festivals and family functions. Thus, the members, particularly women whose husbands go out, in a family do not have a feeling of isolation and loneliness.

The social structure in the village Susari like most parts of the country, is male-dominated. All major decisions are taken by males and women have very little say in such decisions. There are hardly 5 per cent households which are headed by a female, but it is also due to family circumstances and not by choice

The status of female members is quite low in a family. The young women and girls are expected to go out of the house only along with a senior female member—mother, mother-in-law, grandmother, etc.—or a male member. The *'purdah'* system is still prevalent in the village and an adult female especially the brides has to partly cover her face when she goes out of the house.

Figure 2: Social and resource map of Susari village

3.8. Social and Resource Map

This map (Figure 2) shows the household pattern on the caste or community basis and all potential resource areas especially for agriculture and its related activities available to a community. The map shows that there is Kamla river on the north of the village so the fields on north side get irrigation from the river water. This river often causes flooding in the village, particularly when there are heavy rains. The household pattern shows a differentiation among the community on the basis of their castes.

3.9. Community and Caste Structure

Susari was a uni-caste, Kayastha, dominated village around 500 years ago. But slowly it has become a multi-caste village and the major castes to which households of this village belong include: Brahmin, Kayastha, Dhanukh, Teli, Mallah, Yadav, Halwai, Nonia, Kurja, Mushar, Dusadh, Chamar and Dhobi. Among these, Dhanukh is the most dominant caste in this village. There are only three households of the Kayasthas. Presently, the Telis possess a considerably larger size of landholdings and are involved in the cultivation activity.

Community-wise, the households in the Susari village fall under two communities, viz. Hindu and Muslim. A majority of the households belong to the Hindu community (86.3%) and Muslim households are only 13.7 per cent. In terms of landholding-size, all large and medium households and around 98 per cent of small households belong to the Hindu community and most of the Muslim households belong to the landless category with only a few households belonging to the smallholding group (Table 3). There is no Christian household in this village.

Table 3: Distribution of households by community in Susari village

(in per cent)

Particulars	Households				
	Landless	Small	Medium	Large	All
Hindu	83.4	98.6	100.0	100.0	86.3
Muslim	16.6	1.5	0.0	0.0	13.7

In terms of gazetted castes, around 24 per cent households belong to the scheduled castes (SCs) category and about 48 per cent belong to the category of other backwards castes (OBCs). There is no scheduled tribe (ST) household in this village (Table 4) and the remaining households (28%) fall under the general category.

Table 4: Distribution of households by caste group in Susari village

(in per cent)

Particulars	Households				
	Landless	Small	Medium	Large	All
Scheduled Castes	29.4	2.9	0.0	3.3	23.8
General	20.4	55.9	82.9	40.0	28.5
Other Backward Castes	50.2	41.2	17.1	56.7	47.7

3.10. Culture

The people of Susari village though not much educated in terms of schooling, are highly civilized. They respect the elders and touch their feet to have their blessings. By and large, they are simple and God-fearing, irrespective of their

Temple in the village

community. The commonly spoken language in the village is '*Maithili*' and the ladies sing songs in this sweet language in groups on the occasion of festivals and marriages. A guest is accorded high respect by all the households and is regarded as a representative of God and treated accordingly. The majority of households in this village worship *Gram Devata* (the village God) called *Goraiyasthan*, which was built 500 years ago.

The food habits and costumes of all the residents of this village are similar, irrespective of their community, Hindu/Muslim. The staple food is rice and wheat but the poor households in the village irrespective of their caste or community, largely remain under-fed and do not get the recommended calories from food-intake.

The dowry system and village feast system are still dominant in the village. Besides family savings, people have to sell or mortgage their land for performing marriage of their daughter or observance of rituals after a death in the family. Such customs adversely affect the people of this village, particularly landless, small and marginal farmers.

The female members of the households belonging to the scheduled castes, other backwards castes and Muslims help the male members in the farming activities and livestock-rearing. The female members of poor households of these castes undertake several in-house or on-farm jobs on wage labour basis. The female members of general caste carry out household activities but do not normally undertake any on-farm job.

3.11. Migration

People, particularly the adult population, opt to migrate from a place when employment opportunities are not locally available. The out-migration from the Susari village is also considerable. It varies depending on farm-size from 11 per cent to 33 per cent of the total population. In terms of adult population, this percentage would be still higher. A special feature of out-migration seen in the Susari village is the incidence of highest migration from households of medium farm-size. It could be due to lower per-caput landholding size and generation of more awareness about education. Lack of interest in farming is also emerging as an important factor for migration from villages to towns.

Purpose-wise analysis has revealed that migration for daily wage employment is very high across all farm-sizes; it is around 61 per cent of the total migration. As expected, out-migration is much higher from landless (64%) and small (72%) farms. Due to poor educational facilities in the village, education

Table 5: Incidence of migration in Susari village

(in per cent)

Particulars	Households				
	Landless	Small	Medium	Large	All
Out-migration	17.4	18.5	32.4	11.0	18.1
Purpose of living outside the village					
Education	14.2	13.5	30.9	17.2	16.2
Salaried job	4.2	2.1	10.3	3.5	4.7
Daily wage employment	64.0	71.9	35.1	41.4	60.7
Own business	0.8	0.0	4.1	0.0	1.1
Searching job	1.0	1.0	1.0	0.0	1.0
Others	15.7	11.5	18.6	37.9	16.3

is the second important purpose behind migration. It is worked out to be 16.2 per cent on overall basis, but it is quite significant in the case of medium farm-size (31%), depicting their interest in and better awareness about education. The out-migration for a salaried job is around 5 per cent, and it is also maximum among medium farm-size households (10.3%) (Table 5). It also points towards the low educational status in the Susari village. Due to weak economic base of the residents of this village, the migration for doing own business is only one per cent.

Migration to far-off places like Punjab and Haryana is quite visible in the Susari village. Most of such migrants work as agricultural labourers in those states. Some of their children, after attaining the age of 15 years, also accompany their relatives for seeking an employment in Punjab and Haryana. Thus, migration is the strategy for survival in the Susari village. Further, the migration has increased overtime.

4. Agriculture

4.1. Landholding and Land-use Pattern

In the Susari village agriculture is the major activity. The average size of landholding is 0.55 acre. It is maximum (5.6 acre) on large farm-sizes and decrease with farm-size to 0.14 acre across landless households. The operated land-size is still lower, 0.51 acre on overall basis (Table 6). Small and landless households constitute more than 90 per cent of the total households in this village, but they own hardly 34 per cent of the cultivable land of the village, indicating a skewed distribution of land in the village (Figure 3).

Table 6: The landholding pattern across different households in Susari village

Particulars	Households				
	Landless	Small	Medium	Large	All
Size of landholding (acre)	0.14	0.86	1.59	5.58	0.55
Operated land (acre)	0.12	0.83	1.59	5.16	0.51
Irrigated area (%)	95.8	94.1	96.0	73.6	85.0
Permanent fallows (%)	0.6	0.0	0.0	0.0	0.1
Per capita cultivated land (acre)	0.02	0.11	0.19	0.57	0.07

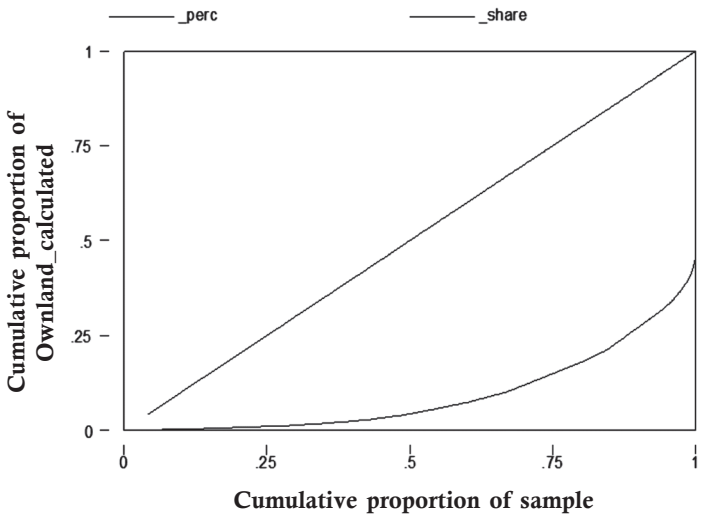

Figure 3: Lorenz curve for land distribution, Susari

Because of uneconomically small size of operational land and migration of adult male members of households, leasing-in and leasing-out of land are common in the Susari village. And because of these reasons, leasing-in and leasing-out of land are significantly more common across landless households. It has been observed that 9.0 per cent of households have leased-out land and 7.0 per cent have leased-in land for crop production (Table 7). About one-tenth of landless households have leased-out their land to fellow farmers for cultivation. In terms of operated land, the shares of leased-in and leased-out land are very high in the case of landless households. About 57.6 per cent of operated land has been leased-in and about 72.2 per cent of operated land has been leased-out.

Table 7: Incidence of tenancy in Susari village

Particulars	Households				
	Landless	Small	Medium	Large	All
	Households leasing land (%)				
Leased-in	7.8	7.4	2.9	0.0	7.1
Leased-out	10.0	2.9	0.0	16.7	9.0
	Share in operated land (%)				
Leased-in	57.6	5.1	0.5	0.0	11.8
Leased-out	72.2	7.9	0.0	8.1	18.7

It is observed that none of the large households has leased-in land because of its sufficient availability with them. On the other hand, none of the medium and large households has leased-out land for cultivation because of its limited availability with them. The popular belief that landless and small farmers do not lease-out land does not hold true in Bihar, in general and in Susari village in particular.

4.2. Soil and Irrigation

The soil in the Susari village is very deep and fertile alluvial and the land is largely levelled. The soil is rich in organic carbon and major nutrients. In addition to its inherent fertility, it is enriched by the fresh layer of silt brought by the *Kamla* river. More than 80 per cent of the total land area is cultivated. Due to high pressure of population on cultivable land, the cultivated land per head of population is very small (0.51 acre). By and large, there are no permanent fallows in the village and these constitute hardly 0.11 per cent of the total area.

The irrigation facilities have increased in the village during the past 40 years with the government initiatives and private investment in irrigation. Presently, about 85.0 per cent of the cultivable area is irrigated; the proportion of irrigated area is higher on landless households (95.8%) than on large farm households (73.6%). Almost all the landless households irrigate their crops through hiring of a pump set. The first private tube-well was installed in 1981 and now there are 28 private tube-wells in the village. All the private tube-wells are operated by diesel engine. A government tube-well was installed in 1986 in the village which remained functional for only six months.

The major concern of people in the village is the declining soil fertility due to such factors as soil erosion because of flooding, non-adoption of crop rotation practice, poor soil management and injudicious use of fertilizers. It is seriously affecting crop yields and the overall food-security levels of the families in this village.

Over the years, the use of fertilizers has increased because the fertility of soil is declining. The households increasingly depend on fertilizers, especially on urea, to increase soil fertility and maintain crop yields, and this trend is likely to continue if appropriate corrective measures are not introduced.

Traditional ploughing of land with a pair of bullocks

4.3. Crops and Cropping Pattern

Prior to the onset of green revolution (before 1970), the principal crops grown in the village were paddy, finger millet and maize during the *kharif* season and lethyrus, gram and sweet potato during the *rabi* season. There has been a drastic change in the cropping pattern of this village during the past 40 years. Paddy has become the only crop grown during the *kharif* covering more than 80 per cent of the cultivable land. Wheat is the major crop grown during the *rabi* season and it covers about 40 per cent of the cultivable land. Earlier, finger millet was one of the staple crops in the village but now this crop does not find a place in the diet of even weaker sections of the society. Area under lethyrus, gram, and sweet potato has reduced and it has been shifted to *rabi*-wheat. Some farmers have started growing mustard also but the majority of them cultivate mustard as a mixed crop with wheat. Potato and vegetables (cucurbits) are also grown during the *rabi* season but these cover less than 5 per cent of cultivable area in the village. *Summer*-gram is also grown in this village which covers almost 1 per cent of the cultivated area (Table 8).

Table 8: Changing cropping pattern in Susari village

Crop season	1970	2010
Kharif	Paddy	Paddy
	Maize	
	Finger millet	
	Horse bean	
Rabi	Wheat	Wheat
	Lethyrus	Mustard
	Gram	Vegetables (Potato, Onion)
	Barley	Lentil
	Lentil	Gram
Summer	Summer vegetables	Summer vegetables
		Summer green gram

4.4. Preferences for Seed Varieties

Based on the seed characteristics like yield, irrigation-need, fertilizer-need, crop duration and taste of produce, the farmers in the Susari village select the seed variety for cultivation. In Susari, wheat and paddy are the two main crops cultivated by the farmers. The preferred seed varieties are: 'UP262' (first preference) and 'NSC408' (second preference) for wheat cultivation and 'Swarna' (first preference) and 'Hybrid' (second preference) for paddy cultivation, as shown in Table 9.

Table 9: Preference of farmers for seed variety in Susari

Variety	Higher yield	Less irrigation	Less fertilizer	Short duration	Good taste	Preference of farmers
Wheat						
UP262	⬭⬭⬭	⬭	⬭⬭	⬭⬭⬭	⬭⬭⬭	First
NSC408	⬭⬭	⬭⬭	⬭⬭	⬭⬭	⬭⬭	Second
Rice						
Swarna	△△	△△	△△△	△△△	△△△	First
Hybrid	△△△	△△△	△△	△△	△△	Second

Note: Symbols are only indicators of change and do not depict the extent of that change in real terms with time.

4.5. Livestock

Susari is a livestock-rich village and livestock-rearing is the most important agriculture allied activity in the village. The cattle and buffalo are two common animals preferred by the residents of this village. The incidence of buffalo-rearing is much higher (30.6%) than of cattle-rearing (9.8%) across all farm-sizes (Table 10).

Table 10: Rearing of different livestock species in Susari village

(in per cent)

Particulars	Households				
	Landless	Small	Medium	Large	All
Cattle	7.6	13.2	8.6	40.0	9.8
Buffalo	23.5	58.8	48.6	66.7	30.6
Goat	7.2	1.5	0.0	0.0	5.9
Sheep	0.2	0.0	0.0	0.0	0.2
Others	0.2	0.0	0.0	3.3	0.3

The possession of a cattle is accorded preference by a household in Susari. The average size of cattle is worked out to be 0.54 per household against the average size of buffalo which is only 0.13 per household. The per household herd-size of both cattle (1.27) and buffalo (0.63) is bigger with large households and it declines as farm-size decreases, depicting a direct relationship between herd-size and farm-size on per household basis.

In the Susari village, the number of local cows was more forty years ago, but after 1990, improved variety of cows has been introduced and their number

is rising. The number of buffaloes in the village has decreased over time because buffalo-rearing requires higher investments. Also, there is a special initiative from the government to support poultry-farming in the village.

The animals reared in the village households include goat and sheep also. But these are largely confined to landless and small households in Susari. About 3 per cent households possess bullocks also, largely for farming activities. The value of livestock per household has been worked out to be Rs 5164. This value is very high in the case of large households (Rs 15987) and declines with farm-size (Table 11).

Table 11: Share of different livestock species in total livestock value in Susari village (in per cent)

Particulars	Households				
	Landless	Small	Medium	Large	All
Cattle	72.4	85.2	91.9	61.9	74.8
Buffalo	26.4	14.7	8.1	37.7	24.4
Goat	1.1	0.1	0.0	0.0	0.7
Sheep	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.3	0.1
Total value (Rs)	3840	9176	7420	15987	5164

Improved breed of cow in the village Susari

There is no institutional arrangement for milk marketing in the Susari village. The nearest Dairy Cooperative Society is located in a neighbouring village, *Bithouli*. Some milk vendors also operate in the village, who collect milk from different households and sell it in the nearby urban area.

Inspite of a large number of animals, the livestock healthcare facilities are meagre in the village. There is no artificial insemination facility in the village. One private veterinary doctor has started his clinic in the village and he provides artificial insemination facility in the village but only to cows. For buffaloes, most farmers depend on natural insemination. Like land, the distribution of livestock is also highly skewed (Figure 4).

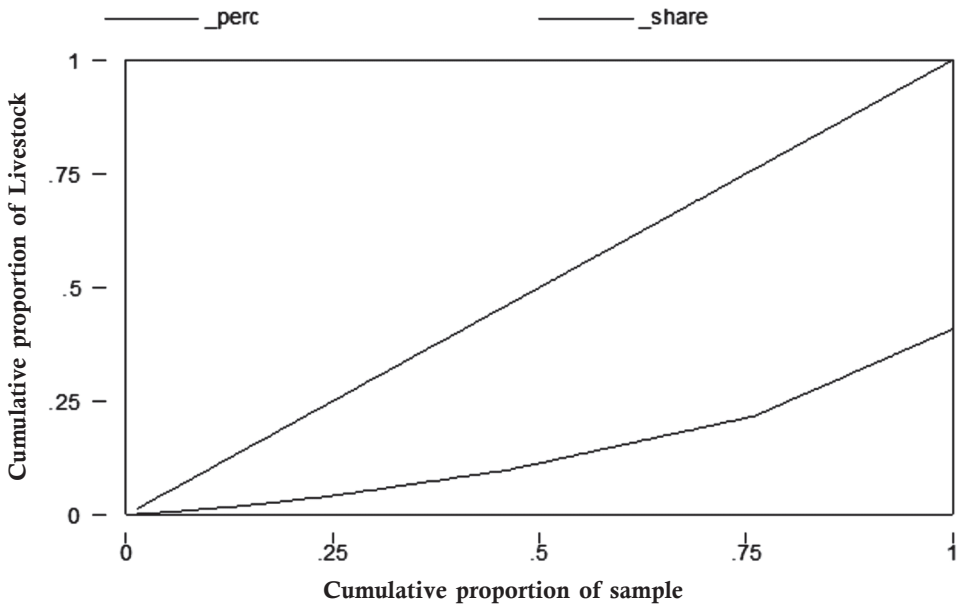

Figure 4: Lorenz curve of livestock, Susari

4.6 Farm Machinery and Implements

Agriculture of Susari village is still traditional but is moving towards modern mechanized farming. However, the pace of change has been slow during the past 40 years. There are 17 pairs of bullocks and farmers use bullock-drawn implements, namely *desi* plough, spades, chaff-cutters, etc. The farm mechanization was started in this village in 1977 when the first tractor was purchased and presently there are 9 tractors in the village. About 23 per cent of large households own tractors. One small and one medium farmers also own tractors in the village (Table 12).

Table 12: Percentage of household having agricultural machinery in Susari village

Particulars	Households				
	Landless	Small	Medium	Large	All
Tractor	NA	1.5	2.9	23.3	1.4
Harvester & thrashers	0.2	0.0	2.9	16.7	1.1
Irrigation motor	0.6	4.4	14.3	50.0	4.0
Borewell	0.8	4.4	11.4	53.3	4.2

NA: Not applicable

A woman farmer standing in front of the traditional storage infrastructure for dry fodder (*Khopi*)

There are 7 threshers in Susari, i.e. 1.1 per cent of households own a thresher in this village. A comparatively higher proportion of large farmers (16.7%) own threshers which are used for threshing of wheat and pulses. Possession of an irrigation pump set is more common in the village and 50 per cent of large farmers own irrigation pump-sets. Ownership of irrigation-borewell is more

prevalent in the village. In all these irrigation infrastructures, incidence of agricultural machinery is higher on large households. Per household investment on agricultural machinery is worked out to be the Rs 7,909 in the Susari village and it is much higher on large farm households (Rs 78,460) and least on landless households (Rs 3,313). The higher investment on agricultural machinery on large farm households is because a larger number of farmers of this category own a tractor and a thresher in the village.

Farm mechanization in Susari

5. Economic Status

In the Susari village the economy was based earlier largely on agriculture and allied activities. But with fragmentation of land, agriculture is increasingly becoming uneconomical and the meagre income from this activity does not provide livelihood security to the households. Therefore, non-farm employment and daily wage employment have become important economic resources in this village, particularly for landless, small and medium households.

The majority of houses in the Susari village are made of bricks, mud and paddy straw and only around 20 per cent households have pucca houses.

A view of poor household along with traditional grain storage structure (*Kothi*)

5.1. Sources of Income and Occupational Diversification

In the Susari village, agriculture and allied activities were the major sources of income for most of the households. But the decline in income from crop production due to reasons already discussed, has compelled the several residents of this village to seek alternative livelihood options. Poorer households have to take up non-farm employment as daily wage labourer within or outside the state. Thus, diversified occupational patterns may be categorized under 5 groups,

viz. (i) Cultivator, (ii) Agricultural labourer, (iii) Non-farm worker, (iv) Salaried (including government) job, and (v) Other miscellaneous jobs like auto-plying, auto-repairing, milk vendoring, tailoring, etc. (Table 13). The recently launched MNREG Scheme of Government of India is operational in Susari village also, but as per the residents, it has not provided 100-day employment to even one eligible household in this village.

Table 13: Occupational diversification in Susari village

Particulars	Households				
	Landless	Small	Medium	Large	All
Working population (No.)	942	160	92	77	1271
Share of different occupations in total working population (%)					
Cultivator	19.3	45.8	41.3	66.2	27.0
Agricultural labourer	22.2	0.0	0.0	0.0	16.5
Non-farm worker	53.5	49.7	40.2	28.6	50.5
Salaried worker	3.3	2.6	10.9	5.2	3.9
Other jobs	1.7	1.9	7.6	0.0	2.1

About 28 per cent of the population in the Susari village is categorized as workers and their work participation is more or less same across different farm-sizes. However, a lower work participation by large households (29%) was due to non-participation of womenfolk of these households in the farming activities, whereas low work participation by landless households was observed due to a larger proportion of children in these households.

According to the people of Susari village, the large farmers of the village earn about 70 per cent of their income from agriculture, whereas they derive about 20 per cent of their income from small business and 10 per cent from salaried jobs. In the case of medium farmers, it is 60 per cent from agriculture, 30 per cent from private and government jobs and the remaining 10 per cent from other sources. The landless farmers earn maximum portion of their income by working as labourers both on-farm and off-farm, which contributes about 80 per cent to their income, and the remaining 20 per cent is from performing agricultural activities in their fields, salaried jobs, etc.

Across different types of occupations, the non-farm employment has been found to have maximum share (50.5%), followed by crop cultivation (27.0%) and agricultural labour (16.5%). Thus, these three occupations have a share of 94 per cent, the remaining 6 per cent goes to salaried job (4%) and other

Carpentry — A non-farm occupation

miscellaneous jobs (2%). Due to poor economic base and low educational level, not much diversification has been observed in the occupational patterns across households in this village.

According to the perception of the villagers, the households in Susari could be classifieds into different income classes as follows : (i) 2 per cent of total households are in 'rich' or 'well-off' category, (ii) 35 per cent of households are in 'average' or 'medium' category, and (iii) 63 per cent of households are in 'poor' category. Thus, the majority of households in Susari village are 'poor' and only a small percentage is of 'rich' households.

6. Healthcare and Sanitation

6.1. Drinking Water

The problem of poor health is directly linked to the quality of drinking water. Almost all the households belonging to the upper and middle income classes have installed their own hand pumps in the village. Besides, there are 70 public hand pumps also in the village.

The village seems to have proper facilities for drinking water. However, the quality of groundwater is a matter of concern. Also, to fetch water from a public hand pump, people particularly womenfolk, have to walk 50 metres to 400 metres. There are some ponds also in the village and these were earlier used as a source of drinking water, but these are now utilized for bathing and cleaning of animals.

A village pond

6.2. Healthcare

The healthcare facilities in the Susari village are practically non-existent. The access to medical facilities is also not easy.

The Government hospital is situated in Baheri block which is 15 km away. In 1981, a Primary Health Centre was established in the village but it is not functioning presently. The Auxiliary Nurse Mid-wife (ANM) charges some fees for immunizing the children of the village. She regularly visits the households. Most of the children of this village get their immunization by this lady

The increasing intervention of chemicals in agriculture, changing lifestyles and diversifying food habits, have resulted in emergence of diseases like gastritis, stomach cancer and other stomach-related problems, which were non-existent earlier.

There are six *'Asha'* workers (medical helpers) in the village in different areas who are active in facilitating safe delivery of a child. One lady who owns a chemist shop in the village, is very helpful in providing treatment to the ailing women. She has a rich experience of handling delivery cases, and she is invited by the nearby villages also for this service. There are six private chemist shops in the village. People purchase common medicines from these shops.

There are six '*Anganwadi centres*' in the village. Their name has been changed and now they are associated with *'Integrated Child Development Service Project'*. It

A chemist shop in Susari

An ICDP centre in Susari village (*Aganwadi*)

is controlled by C.D.P.O. in every block. The maximum number of children in each centre is forty. There is one '*Sevika*' and one '*Sahayika*' on each centre.

6.3. Sanitation

The sanitation condition in Susari village is poor. There is no public sanitation programme in operation in the village. Gram panchayat does not undertake any sanitation activity in the village. The village street roads are still muddy and not even bricked, whereas the majority of villages in Bihar have concrete street roads.

Under '*Sampurna Swachhata Abhiyan*', 38 septic latrines have been built in this village through an NGO, but these cater to the needs of only 5 per cent of the total households in the village. Some upper-middle class households have constructed septic latrines in their individual houses. These include 63 septic latrines and 57 bore latrines. Roads and streets of the village are dirty and in unhygienic condition and it is very difficult to walk through these pathways.

7. Markets, Transport and Communication

7.1. Markets

The Susari village has no easy access to any organized agricultural market. The agriculture market yard, situated at a distance of 45 km from this village in Darbhanga has also become defunct. Presently, the farmers have no practical option but to sell their agri-produce to the local traders at a price lower than the procurement price of the produce. There is no Primary Agricultural Cooperative Credit Society (PACS) in the village. The farmers of this village do not have access to any procurement centre of either Food Corporation of India (FCI) or Government of Bihar. In 2010-11 season, farmers had to sell their paddy @ Rs. 850/quintal. There is no input dealer either in the village. For the purchasing of chemical fertilizers and other inputs, farmers of this village have to go to Baheri (15 km away) or Darbhanga (45 km away). Considering the longer distance of Darbhanga market, the farmers of this village go to the Baheri market but the quality of material available in this market is sub-standard and therefore, most farmers of this village are compelled to use poor quality seeds which reduce the crop yield; and consequently, the farmer's income.

The lack of market in the Susari village affects the purchasing of consumer goods also. The residents purchase these goods either from the small local shops or go to Baheri or Shankar Lohar Chowk market.

7.2. Transport

Transport facilities in the Susari village are meagre. The village is not located on any rail head and the villagers have to travel for 45 km to 'Laheria Sarai', which is the nearest railway station. The national highway is located at a distance of 50 km from the village at 'Darbhanga'. The present transport facilities in the village include three '*savari*' (four wheeler) and one '*magic*' (four wheeler) vehicles which ply daily from Susari to Laheriasarai. These vehicles start from the village early in the morning for Laheriasarai and return one-by-one in the evening.

There are four bullock carts in the village which are very useful for transportatoin of small quantities of goods to short distances. Two rickshaws are also available in the village for covering short distances. There is one mechanical (motor cycle) *thela* in the village which is used for transportation of both goods and passengers.

A rikshaw—The common village transport

7.3. Communication

Like all other infrastructural facilities, the communication facility in the Susari village was very poor. But, the mobile phone revolution in the country has filled the communication gap to a considerable extent. And this village is also not an exception. With the inclusion of this village on mobile network, different companies are now offering their services for a mobile phone connectivity. As a result, almost every household has at least one mobile phone instrument and this helps the family members to contact/talk with the male members who have gone out to earn a livelihood. The out-migrated members wherever they are can also have all family- and village-related information through a mobile phone.

Due to poor economic status coupled with erratic electricity supply, every household in Susari village does not even posses a radio set, and there are only 10 radio sets in this village. Some large and medium farm-households have installed television sets also but their utility is limited due to poor supply of electricity.

The poor communication status of Susari village can be gauged from the fact that the residents of this village used to get newspapers next day of their publication till recently. The newspaper vendor after procuring a motorcycle, now distributes the newspapers in the village in late morning. The Hindi edition of *Hindustan* and *Dainik Jagran* are subscribed by some residents of this village.

8. Welfare and Development Programmes

Several welfare programmes of the central and state governments are in operation in the Susari village. These incude :

1. Agricultural Input Subsidies
2. Anganwadi Scheme
3. Antyodaya Yojna
4. Annapurna Yojna
5. Accredited Social Health Activist Scheme (ASHA)
6. Balika Smridhi Yojna
7. Beej Gram Yojna
8. Diesel Subsidy Scheme
9. Drought and Flood Relief Scheme
10. Family Planning Scheme
11. Indira Awas Yojna
12. Jaivik Khad Protsahan Yojna
13. Kabir Antyosthi Yojna
14. Kisan Credit Card Scheme
15. Kanya Vivah Yojna
16. Mahatma Gandhi National Rural Employment Guarantee Scheme
17. Mid-Day Meal Scheme
18. Matrytva Labh Yojna
19. Mukhya Mantri Cycle Yojna
20. Laxmibai Widow Pension Yojna
21. Public Agricultural Credit Scheme
22. Public Distribution Scheme
23. Pension for Physically Challenged
24. Old Age Pension Scheme
25. Rashtriya Krishi Vikas Yojna
26. Subsidies on Purchase of Agricultural Implements/ Machinery including tractor

The effect of some of these schemes has become visible like implementation of Mukhya Mantri Cycle Yojna has facilitated continuation of education, more so by girls, after the primary level in the native village, introduction of mid-day meals has increased enrolment in schools, etc. However, a wider impact has yet to emerge.

A glance of other infrasturcutral facilities in the Susari village can be had from Table 14.

Table 14: Developmental infrastructure in Susari village

Particulars		Number
Upper Middle School	:	One
High School	:	No
Vocational Training Centre	:	No
Primary Health Centre	:	1 (Non-functional)
Hospital	:	No
Qualified Private Doctor	:	No
Auxiliary Nurse Mid-Wife	:	1
Ashas (medical helpers)	:	6
Anganwadi Centres	:	6
Private Chemist Shop	:	6
Threshers	:	7
Tractors	:	9
Bullock Pairs	:	17
Rickshaws	:	2
Mechanical Thela	:	1
Private Four Wheeler (for public transport)	:	4
Bus Service	:	No
Rail Head	:	No
Bank	:	No
Drinking Water Supply	:	No
Electric Supply	:	Erratic
Street Solar Light	:	5 (Non-functional)
Radio Sets	:	10
TV Sets	:	Few
Public Handpumps	:	70
Post Office	:	1
Telephone Land Line	:	No
Mobile Phone	:	Yes
Agricultural Inputs Shop	:	No
Agricultural Market	:	No
Primary Agricultural Cooperative Credit Society (PACS)	:	No
Procurement Centre	:	No
Farmers' Club	:	No

9. Households' Preference for Different Public Institutions

According to the people of Susari, the most important institution is the 'School' (Figure 5) because it is the education which will help in the development of the family and village. The next rank is given to the 'Hospital' by the villagers because medical facilities are highly essential but there is no hospital in the

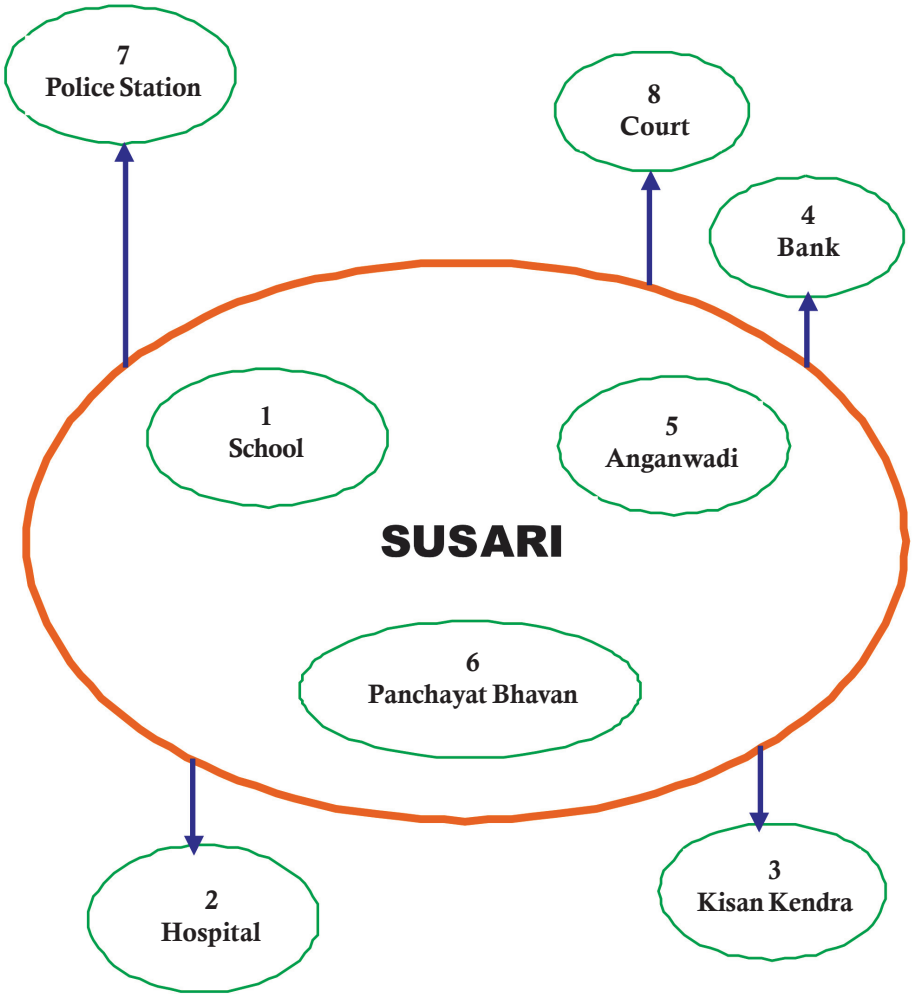

Figure 5 : Households' preference for different public institutions and their location
Notes : The number in the circle shows the preferential ranking of that institution by the villagers, and length of arrow depicts the relative distance from village.

village and the people have to go to Darbhanga for medical treatment. Another two important institutions of their choice are : 'Kisan Kendra' and 'Bank', which have a significant place in the agriculture-based economy. Police station, court, panchayat bhavan are regarded least important by the villagers as the farm community seems to be peaceful with almost no incidence of thefts, dacoity, fights, etc.

10. Changes in Socio-economic and Ecological Indicators in Susari

Based on rural development indicators, the socio-economic and ecological changes in the village Susari are depicted in Table 15. The perceived reasons for the change have also been indicated in Table 15.

Table 15: Changes in socio-economic and ecological indicators in Susari village : 1970-2010

Indicators	1970	1990	2010	Reasons
Soil fertility				Chemical intervention, Less use of organic manure
Number of crops				Lack of irrigation water, Demonstration effect, Lack of initiative
Fertilizer use				Decreasing soil fertility
Area of cultivation (Per capita)				Increasing population, Decreasing water availability
Horticulture				More production of vegetables
Irrigation				More investment in private boring, Government initiative
Migration				Lack of employment and education opportunities

Table 15 — Contd…

Indicators	1970	1990	2010	Reasons
Ground water level				Less rain
Livestock-rearing				Increased government initiative
Diseases				Intervention of chemicals in crops increased
Forest				Lack of rain, Cutting of forests
Wild life				Decreasing forest cover and increasing encroachment

Note: The symbols used in this table are only indicators of a change and do not depict the extent of change in real terms over time.

11. Opportunities and Problems

11.1 Opportunities

- With increased irrigation facilities coupled with readiness to undertake hard work, the farmers of this village could diversify their cropping pattern towards medicinal and aromatic plants, which have a big demand in the market and can provide more income to the farmers.
- With the introduction of summer cropping, the farmers may cultivate off-season vegetables which have a big market demand and can contribute towards increase in farmers' income
- With the availability of compost in the village, farmers may opt for 'organic farming' since organic products have a premium price in the market.
- There is a considerable potential for establishment of food processing units in the locality which will provide local employment and check migration.
- The development of dairy and fisheries are other opportunities for incremental income of the households in this village.
- The introduction of different welfare and development programmes of the state as well as central government in the village are likely to provide strengths and opportunities on several fronts in the village.

11.2 Problems and Constraints

During interactions villagers highlighted several problems and constraints which have significant bearing on their socio-economic status. Important problems and constraints are enumerated below:

- Inadequate knowledge and lack of skill in adopting modern technologies
- Poor access to improved seed varieties and quality agricultural-inputs
- High infestation of crops with pests and diseases
- Lack of healthcare facilities for livestock, including non-existence of AI facilities

- Lack of markets for agri-products
- Deteriorating soil health
- Poor road/rail connectivity
- High incidence of diseases like licoria and osteoporosis in women
- Addiction of elderly people to alcohol and smoking
- Lack of participation of women in decision-making
- Persistent of purdah system and village feast system in the village
- Discrimination among boys and girls in providing education
- Poor educational facilities in the village
- Lack of primary healthcare facilities
- Poor sanitation and hygienic conditions within and around the village
- Highly erratic power supply
- Muddy street roads
- Lack of post-harvest infrastructure for agri-produce management in the village
- Non-existence of any cooperative institution like farmers club, PACs, Cooperative/Welfare society in the village