

Rural Transformation in Rajasthan: Evidences from Longitudinal Village Survey Reports

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Abstract

India is pre-dominantly a rural country with more than two-thirds of its population and workforce residing in rural areas. Thus, the growth and development of the rural economy and population are key to the overall growth and inclusive development of the country. Though over the years, the government has introduced several schemes, rural areas are still plagued by many problems. The village studies are important as it provides the working of various existing agrarian and other associated socio-economic institutions governing the village life and drivers of changes. The village resurvey undertaken in Naurangdeshar village of Rajasthan highlights the certain interesting changes taken place in the economy and reveals the changes in institutional and infrastructure facilities, land ownership and land-use patterns, population size, and migratory patterns, gender equations, income levels, etc. Thus, national policies need to be framed keeping the future course of phenomena that would be observed in the villages.

Keywords: Village survey, Rural transformation, Economic development

JEL Classification: C83, P25, O15

Introduction

‘India lives in its villages’ – Mahatma Gandhi. This famous observation was made by the ‘Father of the Nation’ many years ago, and still holds. As per Census 2011, 68.9 percent population of the country (i.e. 833.7 million) was residing in villages (GOI, 2020), and the same is estimated to be 65.53 percent in 2019 (i.e. 891.2 million) (Worldometer, 2020). India is the second-most populous country in the world behind China with a total population of 1.385 billion (on December 6, 2020) and it is projected that by 2031, India will most likely overtake China to become the most populous country in the world with 1.47 billion people (The Economic Times, 2021). Though the share of the population residing in the rural area has declined from 82.7 percent in 1951 to 68.9 percent in 2011, an absolute number of rural populations may cross 900 million figures in near future. With two-thirds of India’s billion-plus people living in villages, jump-starting the economic engine of rural India will have a multiplier effect on investment, consumption, government expenditure, and exports. Thus, it is quite an undisputed fact that the socio-economic development of a country still lies in the multi dimensional development of its villages.

The villagers comprise the core of Indian society and also represent the real India. To ensure that the fruits of India’s progress are shared by all sections of the society and India’s economy to be strong, the rural economy needs to grow. The government has identified several elements of social and economic infrastructure, critical to the quality of life in rural areas, and is working towards it. Over the years, the Indian government has introduced several schemes that have not only helped the Indian citizens improve their economic situations, but have also addressed their physical needs. However, rural areas are still plagued by problems of malnourishment, illiteracy, unemployment, and lack of basic infrastructure like schools, colleges, hospitals, sanitation, etc. This has led to youth moving out of villages to work in cities. This could be compared to the brain drain from India to the United States and other developed countries. Our villages need to grow in tandem with cities and their standard of life has to improve for inclusive growth to happen. If rural India remains poor, India remains poor. The state and union governments as well as its critics recognized that India lives in its villages and the growth and transformation of the economy needed accurate knowledge of the rural context. Therefore, village studies are important as it provides the working of various existing agrarian and other associated socio-economic institutions governing the village life and drivers of changes. It also provides insight into the pace with

which villages transform and adapt to changing environments and developments and integrate with urban areas (Himanshu *et al.*, 2016).

India has a long record of village surveys and re-surveys, from the pre-independence period to the post-independence period, which witnessed a sharp increase in the interest among social scientists, economists, and policy formulators in village surveys across India. This was partly in response to the need felt by the state and union governments to have reliable and accurate information on socio-economic and political configurations in the rural context to facilitate the process of economic growth and change that it planned for, but the interest was also sustained by the fact that the critics of the state and union government policies provided a central place to the rural context in the scheme of village survey studies. During 10 years since independence, the union government and other institutions have been sponsoring research on the conditions and structure of rural India and on the management and economics of farming, etc. wherein, these data appeared to be a useful source of basic information about villages. Thus, it is this realization that led to a spate (series) of village surveys by various Agro-Economic Research Centres of the Ministry located in the different states of India, one among them is our Centre.

The village society is characterized as a highly static society and village people excessively immobile. However, this kind of common understanding has undergone a tremendous change with the introduction of Five-Year Plans and the revolution in mass media. The earlier village life, which did not have any political and economic power, has now acquired the adult franchise, democracy, and accelerating transformation. During the last five decades, rural societies have witnessed massive changes. Village life today has reached a stage, where the glamour of urban life has made inroads in villages. The review of the literature (ISAE, 1959; Bhat, 1964; Brahmabhatt, 1974; Sen and Ghoshal 1976; Tshjita and Oda 2014; Tripathi 2020; Kajale and Suryawanshi 2021) indicates the changes in institutional and infrastructure facilities, land ownership and land-use patterns, population size, and migratory patterns, gender equations, income levels, etc. The village life reported during the 1960s and 1970s has changed a lot wherein importance of agriculture in livelihood has come down along with changes in cropping pattern, crop diversification as well as a high rate of literacy and unemployment. Besides, the drastic decline in the average size of land holdings due to fragmentation of land is a worrisome fact. Thus, national policies need to be framed keeping in view the future course of phenomena that would be observed in the villages. It is in this context; it is important to have resurvey of villages surveyed earlier.

Since the primary unit of the rural economy in the village, it was felt that periodic surveys and resurveys of selected villages exposed to the various forces of change might be

of some help in understanding this process of change. To fulfill this objective, this Centre, in the earlier phase of its development, initiated several village studies both in Gujarat and Rajasthan state. Total 21 village surveys and four village resurveys are conducted by the Centre in the past which were used in policy formulations. Given above, the present study entitled was undertaken in Naurangdesar village, Sriganganagar/Hanumangarh district with an objective to create a longitudinal panel dataset, to capture the socio-economic dynamics of the village.

Data Sources and Methodology

This study is based on both primary and secondary level data. The secondary data were collected from online databases and published sources. The primary data were collected from the village households of selected villages by survey method through five types of survey schedules. As per the study design suggested by the Coordinator of the study, one village from the list of villages already surveyed before and moderately developed was selected. Accordingly, Naurangdesar village in Hanumangarh tehsil in Hanumangarh district of Rajasthan State was selected as the same village was surveyed in the year 1964 and further resurveyed in 1974. Before undertaking the field survey work, a visit was made to define the study area given the development that occurred during the last five decades or so. The village census method was adopted to cover a minimum of 300 households. As selected village Naurangdesar has developed leaps and bound and spread over *chaks*, the study area covered under earlier village survey was also considered under this survey, i.e. Naurangdesar Distributary Area 14 and 15, of which NDA 15 area is land under cultivation, thus residential area of NDA 14 was covered which was a total number of households of 775 (as per Census). The proportionate sampling was attempted to restrict the total sample households to 300 households. Though the village data indicate that 775 households are there, most of the households were found to be having been divided into two-three households within a single household for ration cards and other benefit use purposes. Thus, village census noted 300 households which cover almost 90 per cent of total households in the village. This paper presents the result of the third report and second re-surveys report of the same village conducted in 2019-20.

Results and Discussion

Profile of the Selected Village

Naurangdesar village is located on (Latitude 29°23'40"N, Longitude 74°23'6"E) Hanumangarh Jaipur Highway and 30 km towards East from district headquarters Hanumangarh and 388 km from State capital Jaipur. Naurangdesar is surrounded by Tibbi Tehsil towards the East, Pilibanga tehsil towards the west, Sangaria tehsil towards the North, Sadulshahar tehsil towards the North. Hanumangarh, Pilibanga, Sangaria, Sadulshahar are the nearby cities to Naurangdesar. The

Naurangdesar Gram Panchayat is a group of nine villages as, thus group gram panchayat which is named based on Canal distribution point includes 11 NDR, 13 NDR, 14 NDR (CAD), 14 NDR (RAHIT), 16 NDR, 17 NDR, 20 NDR-A, 1MWM, and 3 MWM. This village was without irrigation facilities before getting water through the Indira Gandhi Canal sometime in the 1960s before which the Centre had conducted a village survey in 1964. After getting the canal water, farmers from Punjab have migrated into and around this village area which makes half of the Punjabi and Rajasthan population and mixed language. The whole village is divided into NDR14 and NDR 15. The climate of this region is largely arid, which turns extremely hot during the summer and extremely cold during winter. The district is endowed with rich sandy loam soil and is well-drained with moisture-retaining characteristics which are very much helpful for the production of food and cash crops. The soil is suitable for crops like gram, bajra, guar, and moong which do not require much water.

Changes in Social Dynamics

As per Census 2011, the total population in the village was 3846, of which 53.09 per cent was male population and 46.91 was female population (14 NDR CAD and 14NDR CAD Rahit) (Table 1). The number of households in the

village has increased by 127 percent in 2011 over 1971. As per the Census 2011, there were 890 females per 1000 males which was lower than the sex ratio reported at the state level (928 females). The total working population in the village was 1952 which were either main or marginal workers. Out of the total workers, 59 per cent were male and 41 were female workers. Total main workers were 1597, out of which female main workers were 31.68 per cent and male main workers were 68.32 per cent. Total marginal workers of the village were 18.2 per cent of total workers in the village. Out of the total population, 55.9 per cent of the population was reported literate, while the rate of literacy was higher for males (63.96%) than females (46.78%). The rate of literacy has also increased from just 20 percent in the earlier survey to almost 88 percent in the current survey. A particularly significant increase in female literacy was achieved which has increased from 4.27 per cent to 77.8 per cent. The primary level education has significantly increased in a recent survey that to very impressive growth was achieved in female literacy in the village in the current survey.

About 72 percent of houses were pucca in nature which indicated the drastic change in the socio-economic status of villagers after receipt of assuring canal water as, during the

Table 1. Changes in demographic profile of the selected village

Particulars	1971 Census		Census 2011		Changes	
	Male	Female	Male	Female	Male	Female
Number of households	342		775		126.61	
Total Population	1093	954	2042	1804	86.83	89.10
Adult	635	539	1750	1580	175.59	193.14
Child (0-6)	458	415	292	224	-36.24	-46.02
Scheduled Caste	377	338	841	724	123.08	114.20
Scheduled Tribe	0	0	43	43	100.00	100.00
Total Workers	632	0	1152	800	82.28	100.00
Main Worker	594	0	1091	506	83.67	100.00
Marginal Worker	38	0	61	294	60.53	100.00
Cultivator	470	0	489	115	4.04	100.00
Agricultural Labour	48	0	331	165	589.58	100.00
Workers in household industries	0	0	16	8	100.00	100.00
Other workers	76	0	255	218	235.53	
Non-worker	461	954	890	1004	93.06	5.24
Literate population	207	23	1306	844	530.92	3569.57
Illiterates population	886	931	736	960	-16.93	3.11
Literacy (%)	18.94	2.41	63.96	46.78	45.02	44.37
Sex ratio	-	872	-	890	-	2.06

Source: GOI (2011), Census data.

Table 2. Types of houses of selected households

Particulars	1961-62		1968-69		2019-20	
	No	% to total	No	% to total	No	% to total
Type of houses						
No. of kutcha houses	125	78.1	237	73.3	84	28.0
No. of pucca houses	2	1.3	15	4.6	216	72.0
No. of mixed houses	33	20.6	72	22.2	0	0
Total	160	100.0	324	100.0	300	100.0
Type of Families						
Joint families	82	42.7	125	43.0	50	16.67
Nuclear Families	110	57.3	166	57.0	250	83.33
Total	192	100.0	291	100.0	300	100.0

Note: Concrete and thatched houses.

Sources: Bhat, 1964; Brahmhatt, 1974 & Field Survey data 2019-20.

last two surveys, the share of pucca houses in total was 1.3 and 4.6 percent respectively. Also, the nature of families has diverted towards nuclear families. Around 83 percent of families are reported nuclear in the current census as compared to 57 percent in 1961-62. Over the period, mostly joint families are distributed in nuclear families.

Jat Hindus and Jat Sikhs are two important communities while SC families are found in good numbers in both Hindu and Sikh communities and few households were from Scheduled Tribes. The caste/religion-wise distribution of population in selected households of the selected village is presented in Table 3. It can be seen from the table that the share of all other religious groups in the total population has increased except OBC Hindu which has declined from 46.26 percent in the last survey to 27.74 percent in the recent. The sex ratio in the village has declined from 910 in the last survey to 849 in the current survey. For every 1000 male

population, the number of females has declined, which is a matter of concern. The sex ratio of the village is lower than district (906), state (928), and the national average (940). The average size of households has declined over the period from 6.21 people to 4.57 people which implies two aspects, viz. joint families are fragmented into nuclear families rapidly and every couple prefers to have two children as observed in the demographic feature of the village.

Table 4 presents educational status by sex in selected households. This table indicates that there is a significant decline in the number of the illiterate population over the period i.e. from 68.71 percent in the last survey to 26.05 percent in the recent survey in the case of males while corresponding figures for females are 94.77 percent to 38.00 percent. The primary level education has significantly increased in the recent survey that to very impressive growth was achieved in female literacy in the village in the current

Table 3. Population characteristics by caste and religions in Naurangdesar village

(in %)

Age Groups	In 1968-69 (during the last survey)					In 2019 (during the current survey)				
	Male	Female	Total	Sex ratio	Av size hh	Male	Female	Total	Sex ratio	Av size of hh
Caste Hindu General	51.81	48.19	4.59	930	4.88	51.92	48.08	7.59	926	4.73
OBC Hindu	52.39	47.61	46.26	909	6.24	53.42	46.58	27.74	872	4.87
OBC Sikh	52.30	47.70	21.69	912	6.88	56.40	43.60	27.96	773	4.85
SC Hindu	52.35	47.65	22.63	910	5.93	53.95	46.05	25.84	854	4.12
SC Sikh	52.35	47.65	4.81	910	6.21	51.82	48.18	10.0	930	4.42
ST	-	-	-	-	-	50.00	50.00	0.88	1000	3.00
Total	52.35	47.65	100.0	910	6.21	54.09	45.91	100.0	849	4.57

Sources: Brahmhatt, 1974 & Field Survey data 2019-20.

Table 4. Educational status by sex in Naurangdesar village

Educational Status	In 1972-73 (during the last survey)				In 2019 (during the Current survey)			
	Males	%	Female	% of total	No. of male	% of total	No of female	% of total
Illiterate	650	68.71	816	94.77	193	26.05	239	38.00
Able only to read or write	NA	NA	NA	NA	NA	NA	NA	NA
Up to Primary	192	20.30	33	3.83	282	38.06	220	34.98
Up to Secondary	-	-	-	-	92	12.42	67	10.65
Up to Intermediate	97	10.25	12	1.39	69	9.31	38	6.04
Technical	0	0.00	0	0.00	4	0.54	3	0.48
Graduates	7	0.74	0	0.00	79	10.66	49	7.79
PG & professionals	0	0.00	0	0.00	22	2.97	13	2.07
Total	946	100	861	100	741	100	629	100

Sources: Brahmhatt, 1974 and Field Survey data 2019-20.

survey. Near about 13.63 percent population was literate up to the post-graduation level in the current survey whereas, in the earlier survey, this was just 0.74 percent. Besides, in the recent survey near about 0.54 percent of the population of the village was literate in the technical field which gives them higher employment opportunities in the economy.

Changes in Land Use Pattern

Land use is the manner and extent to which land is put to use. The reporting area of Naurangdesar village for land utilization is 96.6 percent of the total geographical area (434.35 ha) of the village. The net sown area accounted for the highest share of 83.68 percent with an area of which 90

percent area is irrigated. Near about 90 percent net area was irrigated by the canal while in an earlier survey this was just 30 percent of NSA which was possible only due to availability of irrigation facilities through Naurangdesar Distributory (NDR) of IGNP canal. Current fallow land has reduced very significantly to 1.04 percent while the same was higher in an earlier survey, i.e. 23.58 percent (Table 5). The proportion of the area under food crops to GCA has declined from 77 percent in 1968-69 to 52 percent in 2019-20. The availability of irrigation facilities improved the green and dry fodder situation, consequently, not only the number of livestock has gone up but also they have become more productive.

Table 5. Changes in land use pattern in the selected village

Particulars	Census 1971		Census 2011	
	Area in ha	% to GA	Area in ha	% to GA
Geographical Area (GA)	485.80	100.00	434.35	100.00
Net Sown Area (NSA)	367.84	75.72	363.46	83.68
Uncultivated area	0.00	0.00	0.00	0.00
Barren Land	0.00	0.00	0.00	0.00
Forest Area	0.00	0.00	0.00	0.00
Pasture and Grazing Land	0.00	0.00	0.00	0.00
Cultivable Waste	1.21	0.25	0.00	0.00
Misc. Trees & Crops	2.00	0.41	0.00	0.00
Current Fallow	114.56	23.58	4.53	1.04
Area under Non-Agricultural Uses	0.00	0.00	66.36	15.28
Net Irrigated Area	111.33	22.92	327.59	75.42
% area under irrigation (to NSA)	30.27	30.27	90.13	90.13

Sources: Brahmhatt, 1974 and Field Survey data 2019-20.

Table 6. Distribution of households by occupations in Naurangdesar village

Livelihood Groups / Caste		High caste Hindus		Jat Hindus		Inter-mediary caste Hindus		Lower caste Hindus		Scheduled caste Hindus		Jat Sikhs		Scheduled caste Sikhs		TOTAL	
Cultivation	1961-62	5	29.4	67	93.1	0.0		6	50.0	31	72.1	36	94.7	0.0	145	75.5	
	1968-69	6	35.3	104	91.2	1	25.0	6	37.5	23	33.3	50	87.7	0.0	190	65.3	
Dairying	1961-62		0.0		0.0	0.0			0.0		0.0		0.0			0.0	
	1968-69		0.0		0.0	0.0	1	6.3		0.0			0.0		1	0.3	
Agricultural Labour	1961-62		0.0		0.0	0.0	2	16.7	8	18.6		0.0	1	100.0	11	5.7	
	1968-69		0.0	1	0.9	0.0	5	31.3	42	60.9	1	1.8	14	100.0	63	21.6	
Non-Agricultural Labour	1961-62		0.0		0.0	0.0		0.0		0.0		0.0		0.0		0.0	
	1968-69		0.0		0.0	0.0		0.0	1	1.4		0.0		0.0	1	0.3	
Trade	1961-62	6	35.3		0.0	1	11.1		0.0		0.0		0.0		7	3.6	
	1968-69	4	23.5	2	1.8		0.0		0.0	1	1.4		0.0		7	2.4	
Service	1961-62	5	29.4	3	4.2	7	77.8	1	8.3	3	7.0	1	2.6		20	10.4	
	1968-69	7	41.2	5	4.4	3	75.0	1	6.3	2	2.9	3	5.3		21	7.2	
Profession	1961-62	1	5.9	1	1.4		0.0		0.0		0.0		0.0		2	1.0	
	1968-69		0.0	1	0.9		0.0		0.0		0.0		0.0		1	0.3	
Art & Crafts	1961-62		0.0	1	1.4	1	11.1	3	25.0	1	2.3	1	2.6		7	3.6	
	1968-69		0.0	1	0.9		0.0	3	18.8		0.0	1	1.8		5	1.7	
Others	1961-62		0.0		0.0		0.0		0.0		0.0		0.0			0.0	
	1968-69		0.0		0.0		0.0		0.0		0.0	1	1.8		1	0.3	
Remittances	1961-62		0.0		0.0		0.0		0.0		0.0		0.0			0.0	
	1968-69		0.0		0.0		0.0		0.0		0.0	1	1.8		1	0.3	
Total	1961-62	17	100.0	72	100.0	9	100.0	12	100.0	43	100.0	38	100	1	100.0	192	100.0
	1968-69	17	100.0	114	100.0	4	100.0	16	100.0	69	100.0	57	100	14	100.0	291	100.0

Sources: Earlier Village Surveys data (Bhat, 1964 & Brahmhatt, 1974).

Changes in Economic Status

About 79.67 percent of households were dependent on agriculture and allied activities, seven percent of households were working in service sector jobs and seven percent households were doing business and trade in the village. One of the important observations was that five percent of households were working as casual and marginal laborers and just a percentage of households were dependent on pension/old-age pension/widow pension etc. in the recent survey. A total of 62.61 percent of total cultivators belongs to OBC Sikh families and 26.09 percent of cultivators were from the OBC Hindu category while other caste categories share was negligible in farming activity. Out of total agricultural labor, about 74.19 percent of agricultural labor belongs to SC Hindu and SC Sikh families, and not a single family of OBC Sikh was involved in agricultural labor in the village. Most of the SC Hindu households were working as casual and marginal labor in or outside the village (Tables 6 & 7).

Though the village economy has remained pre-

dominantly agrarian, the relative importance of cultivation in terms of the number of households primarily dependent on it in the occupational structure of the village has gone down. Out of the total sample household, about 62.53 percent of adults were working in the agriculture sector as a cultivator or agricultural labor or both. Out of the total, 27 cases were reported migrated to other cities or towns in a recent survey. Out of total migrated households, about 24.36 percent of households belong to OBC Hindu family members which have migrated to other cities in search of jobs. Out of the total sample household, about 10.43 percent of household belongs to the APL family. At the time of benchmark survey in 1961-62, out of 192 households of the bench-mark survey, 35 had left the village, one was merged with the other household and 5 could not be accounted for out the time of the survey. Thus 21 percent of the total households had left the village.

Naurangdesar village was the first village which was irrigated by Indira Gandhi Canal Project (IGNP) in the early 1960s and at the time of the first survey, the total irrigated

Table 7. Distribution of households by occupations in Naurangdesar village

Livelihood Groups /Caste	2019-20 Current resurvey													
	General Hindu		OBC Hindu		OBC Sikh		SC Hindu		SC Sikh		ST Hindu		ALL	
	Nos.	% to total	Nos.	% to total	Nos.	% to total	Nos.	% to total	Nos.	% to total	Nos.	% to total	Nos.	% to total
Cultivator	1	4.55	30	38.46	72	91.14	12	13.95		0.00			115	38.33
Labor	3	13.64	27	34.62		0.00	63	73.26	29	93.55	2	50.00	124	41.33
Dairy/Fishing/ Poultry keeping		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Govt Salaried	4	18.18	2	2.56	4	5.06	2	2.33	1	3.23		0.00	13	4.33
Private Salaried		0.00	4	5.13	2	2.53	2	2.33		0.00		0.00	8	2.67
Pensioner	2	9.09		0.00		0.00	1	1.16		0.00		0.00	3	1.00
Caste based profession		0.00	6	7.69		0.00		0.00		0.00		0.00	6	2.00
Trade & business	11	50.00	7	8.97	1	1.27		0.00		0.00	2	50.00	21	7.00
Entrepreneur		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Casual labor		0.00	2	2.56		0.00	3	3.49	1	3.23		0.00	6	2.00
Marginal labor	1	4.55		0.00		0.00		0.00		0.00		0.00	4	1.33
Household		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Others		0.00		0.00		0.00		0.00		0.00		0.00		0.00
Overall	22	100.0	78	100.0	79	100.0	86	100.0	31	100.0	4	100.0	300	100.0

Note: Based on primary occupation only for households

Source: Field Survey data.

area was only 6.1 percent, which has increased to 55 percent during resurvey period 1973-74 and reached to 90.5 percent in the current survey. This indicates that almost 91 percent area was brought under irrigation of Naurangdesar village. The main source of irrigation was a canal in the village. During both surveys the small landowners had a leased-out large proportion of their owned land as compared to that by medium and large landowners. While none of the marginal farmers had taken land on leased-in during 2019-20, while 7.5 percent of total operational holdings of small farmers group was land leased-in category. Under the land tenure system in the village, leasing-in and leasing-out tenancy with sharecropping basis of the output was found prevalent among the cultivators. The prevailing rate of leasing-in and leasing-out was about Rs. 60000 per ha of irrigated land and Rs. 16000 per ha for rainfed land in Naurangdesar Village.

The comparative analysis of the distribution of landholdings during the last resurvey (1968-69) and the current survey indicates that the average size of landholding size has declined significantly. The average size of land holdings has declined from 10.5 ha in 1968-69 to 3.51 ha in 2019. The average education of the head of the family was 5th class which was almost the same in all classes and on average three crops were grown every year. The main crops grown during the Kharif season were cotton and guar while mail rabi crops were wheat and rapeseed and mustard.

Though the crop pattern during both the surveys was food crop oriented irrigation has contributed towards a gradual shift in the area from food to non-food commercial crops (Table 8). Considerable reshuffling in the relative importance of different crops among cereals has taken place during the resurvey period. Data indicates a complete change in the allocation of the area under cereals, at the cost of losing the area under jowar and barley crops and drastic decline in area under bajra crops, more than 90 percent of cereals crop area shifted under fine cereal crop i.e. wheat. Small farmers grow only wheat crop under the cereal category. All size group of farms had accorded priority to gram and second to guar in terms of area to be irrigated in 1968-69 and roughly speaking irrigated area under these two crops accounted for about half of the total area under irrigated crops for all size group of farms. in 2019-20 wherein cotton crop accorded the first choice followed by wheat crop and then rapeseed mustard and gaur crop. Due to the availability of canal water for irrigation, the crop area was diverted from pulses crops to other crops like paddy, oilseed crops, and cotton. During the current survey, it was reported by the villagers that the area under wheat and guar has increased at the cost of decline under pulses crops which were grown as rainfed crops.

There is a tremendous improvement in crops yield except guar crop in a recent survey over base survey (Table 9). The yield of the wheat crop has increased by 481.45 percent while

Table 8. Change in cropping pattern on the farms in the Naurangdeshar village

Crops	Share in the total cropped area (%)		Change in % points in 2019
	1968-69	2019	
Paddy	0.0	1.03	1.03
Wheat	12.3	29.22	16.92
Gram	56.1	1.39	-54.71
Barley	7.1	0.00	-7.1
Wheat/	1.7	0.00	-1.7
Gram/ Barley	1.3	0.00	-1.3
Rapeseed & Mustard	0.0	17.48	17.48
Groundnut	0.0	1.86	1.86
Jowar	7.0	0.00	-7
Bajra	3.7	0.80	-2.9
Guar	9.4	17.75	8.35
Moth	1.2	0.00	-1.2
Moong	0.1	0.00	-0.1
Fodder	0.1	0.06	-0.04
Kinnow	0.0	0.12	0.12
Cotton	0.0	30.29	30.29

Sources: Brahmbhatt, 1974 and Field Survey data 2019-20.

the yield of the bajra crop has increased by about 204 percent, gram crop yield by 80.93 percent, and cotton crop yield by 202.36 percent. The milch animal resources have increased by 49 percent as compared to the last survey. Youngstock also increased but sheep and goats have declined in Naurangdeshar Village. The main implements owned by the villagers were plows, harrow, handholes, kassi, data, kassia, and crushers. All crops are found profitable except the Guar crop. Guar crop has incurred loss in irrigated as well as under rainfed condition of 1.64 and 3.85 percent respectively in the village which means only one selected farmer has incurred loss in cultivating guar crop in the village.

Policy and Governance

APL/BPL-wise population distribution in selected households of Naurangdesar village is presented in Table

10. It can be seen that out of total households, 21.67 percent of household belong to the BPL category of which the highest share was of Hindu SC (40 percent) category followed by Hindu OBC (24.62 percent). Another important picture depicts in the table that a total of 80 percent of Sikh SC families belong to MAPL (Antodaya Anna Yojana) category in the village. A total of 76.67 percent of total families in the village were classified above the poverty line category which was lower than the district average of 84.62 percent (GOR-www.food.raj.nic.in). This data was not reported in the earlier two surveys.

Out of the total households, only three households have reported non-availability of authorised electricity connection, 14.67 percent of total households have no toilet facility in their houses and 5.33 percent of households have no

Table 9. Trends in yield in Naurangdesar village during 1968-69 to 2019

Crop groups	Yield (Qtls/Ha.)		Changes (%)
	1968-69	2019	
Wheat	8.84	51.4	481.45
Bajra	4.44	13.48	203.60
Gram	5.35	9.68	80.93
Guar	8.35	7.26	-13.05
Cotton	9.34	28.24	202.36

Sources: Brahmbhatt, 1974 and Field Survey data 2019.

Table 10. APL/BPL wise population distribution in Naurangdesar village (in %) 2019-20

Religion/Caste Category	APL	BPL	MAPL	Grand Total
General Hindu	7.39	7.69	0.00	7.33
Hindu OBC	26.96	24.62	0.00	26.00
Hindu SC	25.65	40.00	20.00	28.67
Hindu ST	1.30	1.54	0.00	1.33
Sikh OBC	31.30	10.77	0.00	26.33
Sikh SC	7.39	15.38	80.00	10.33
Total	76.67	21.67	1.67	100.00

Source: Field survey data.

government drinking water connection for which they have to travel just 10-100-meter distance in the village. Out of total households, about 39 percent of a member of households had participated in Gram Sabha and Gram Sansad meetings whereas remaining household members who could not participate were either busy, uneducated and due to old age they did not participate. An economic gap was observed in Sikh OBC and Sikh SC families due to economic conditions. Most SC Sikh families are working on the land of OBC Sikh for several years. This was not the case in the case of OBC Hindu and Hindu SC families because the education level of these groups was much better than SC Sikh families. No political bias or deprivation was seen in the village and the village is properly connected with district headquarter.

Under the BPL card scheme, a total of 65 households were found entitled in the village during 2014-2019 and all had availed this facility. Thus, cent percentage of households in the village coverage were under this scheme. Under KCC Card Scheme, a total of 118 households were entitled and all of them have availed of the facility. Under the public health insurance card scheme, 100 percent coverage was reported as all 286 entitled households were benefited. About 212 households were entitled under MGNREGA job Card Scheme, but the coverage was 96.7 percent. Almost all the entitled households for Crop Insurance; PMFBY, LPG Scheme (PM Ujjala) have availed the facility. Under ICDS/ Mid-day Meal scheme, all the 91 households had availed this facility and were satisfied with same. Under the Government Scholarship scheme, only 22 households were entitled but all have availed the same facility. All the households that were entitled under Seed Minikit scheme, Farm loan waiver, Old age pension scheme, and Widow Pension Scheme have availed the facility. Under the Cattle Shed scheme, 22 households were entitled but only 2 households had availed of this facility. All the beneficiaries have reported 100 percent satisfaction with these schemes. None of the beneficiary households have reported any dis-satisfactions over the implementation of these schemes. While during the discussion, the villagers have suggested for complete

coverage of village under these schemes those who are eligible as per prescribed norms.

Out of total households, 39 percent of a member of households had participated in the meetings of Gram Sabha and Gram Sansad whereas remaining household members could not participate in Gram Sabha meetings may be due to their busy schedule of fieldwork, uneducated and due to old age. The relative status in the village power structure across the caste category group was mostly dominated by General Hindu followed by OBCs while SC and STs are having poor status in the village power structure. Thus, despite drastic changes in the village, the power formula has not changed so far. The reasons for the one-sided power structure and status in the society were poor economic conditions of SC and ST population along with no political affiliation as such as well as qualification. While during the field survey, all the respondents have denied any incidence of deprivation on the accounts of caste, gender, or any association with a political party. All the respondents have reported that they approach their friend in case any advice is required on livelihood specific issues, contact relatives in case of social-related issues, consult friend and relative in case of educational matter and visit advocate and friends to seek advice on legal issues.

The major problems narrated by the villagers are no sewage line, non-availability of higher education institutions and library, small village road and no facility of street lights, risky highway passing nearby the village and non-variability of work under NREGA. Besides, no facility of the public library, sports complex, GYM facility, no employment opportunity available, non-availability of crematory shed, no proper bus stand facility with barricades, etc. are some problems reported by villagers. The suggestions for improvement of the village were given by the respondents which are- need to assure the availability of work under MGNREGA with high wage rate, construction of sewage line, proper bus stand facility with barricades, expansion of village roads and fixing of lights on roads, college education and library facility APMC market in the village, four-lane

highway with over bridge facility, public library, sports complex and gym facility, more coverage under PMAY scheme and purchase of crop produce by Govt at MSP.

Conclusion and Policy Implications

Naurangdesar village was the first village that was irrigated by Indira Gandhi Canal Project (IGNP) in the early sixties. After getting the canal water, farmers from Punjab have migrated into this village area which makes up half each of Punjabi and Rajasthan population and mixed language. A large number of immigrants especially from Punjab have had a marked influence on the behavior and social thinking of the native villagers and were instrumental in the changes in various traditional customs of the dialect village. Though the crop pattern during both the surveys was food crop oriented irrigation has contributed towards a gradual shift in the area from food to non-food commercial crops. Last but not least important change in the crop pattern was about the introduction of altogether new crops like oilseeds cotton and sugarcane; also, Rajko and a mixture of jowar and maize were taken as fodder crops for the first time in the post benchmark period. The Herfindahl index value is being relatively low implies a significant level of diversification in the Study area. Though the village economy has remained predominantly agrarian, the relative importance of cultivation in terms of the number of households primarily dependent on it in the occupational structure of the village has gone down. In 1961-62, 76 percent of the village households followed cultivation as a primary occupation which dropped down to 65 percent in 1968-69 and further down to 38 percent in 2019-20. The basic amenities expansion in the village has reached a satisfactory level in the current survey and villagers are aware of self-hygiene and cleanliness. The major problems narrated by the villagers are no sewage line, non-availability of higher education institutions and library, small village road and no facility of street lights, risky highway passing nearby village and non-availability of work under NREGA. Besides, no facility of a public library, sports complex, GYM facility, no employment opportunity available, non-availability of crematory shed, no proper bus stand facility with barricades, etc. are some problems reported by villagers. There is an urgent need to

- District/block administration should on priority create the basic infrastructure in the village such as sewage line /gutter line for wastewater, internal village roads as well as a street line on village roads.
- There is a need for higher education institutions nearby the village so that students can go for higher studies.
- Village library can be set up for students and youth to prepare themselves for the competitive examination
- There is an urgent need to have due safety measures to avoid accidents on the passing highway

- The need of the hour is to create the food processing industry as per the crop grown in this area.
- There is also a need to create opportunities for Non-Farm Rural employment to address the issues of unemployment and migration.
- Marketing facilities for perishable commodities may be created in or near the village so that losses to farmers can be minimized.

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