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Assessing Rural Change: Study of Village Gulumb in Maharashtra State of India

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Abstract

In view of the importance of villages in the economy of the developing countries such as India, the present paper, based on the survey (1976) and resurvey (2020) of village Gulumb situated in Satara district of Maharashtra state of India makes an attempt to study type and extent of changes that have taken place in the overall level of development of the village over the survey periods and to study the economic status of the households based on 2020 survey. The study observes considerable progress in the village in terms of civic amenities and infrastructure available, technology used in the village for communication and construction activity over the concerned period. It also shows increased extent of education and higher share of school enrolment of female children. However, it reveals reducing role of agriculture in supporting livelihood and higher share of economically vulnerable households among marginal land holding households and landless households. Smaller size of land with marginal category households and inadequate income from various non-farm sources with landless households appears to be the constraining factor for these households. Responses of the households therefore reveal need for employment generating activities for the villagers. Study also highlights important civic problems such as scarcity of water for drinking as well as irrigation, poor quality of drinking water, inadequate systems for maintaining cleanliness and sewage management, open drainage etc. It is felt that for further improving standard and quality of living and welfare of the villagers, focus needs to be on creation of non farm sector employment, need for vocational guidance and capacity building training programmes for educated youth and women. Usage of digital technologies especially for agriculture linked activities, communication and governance would greatly enhance pace and quality of outcomes and improve overall living of the households in the village in a smart way.

Introduction

The share of rural population in India which was 80 percent of the total population in 1960s has been reducing gradually over the time period, however still a massive proportion of the total population – around 69 percent- resides in more than 6 lakh villages of rural India. This population constitutes largely the agrarian population of the country. Considering the importance of villages in the Indian economy, a large number of village studies have been conducted that highlight socio economic status of the households and nature of changes taking place in village institutions, infrastructure and household characteristics over a period of time. Such studies have revealed working of various existing agrarian and other associated socio economic institutions governing the village life, drivers of change and the pace with which villages transform and adapt to changing environment and developments and integrate with urban areas. The analysis in such studies also indicates implications of the changes that would take place in future in the village and at a larger level as well and policies that need to be followed for further progress.

The available literature suggests that a large number of studies have been undertaken by social scientists based on sample as well as population surveys. Resurveys were undertaken with the objective of understanding the changes that took place in erstwhile stagnant and largely self-sufficient nature of Indian villages (ISAE, 1957 Gajrajan, 1983). Earlier surveys revealed the stark reality of very slow progress in economic as well as social sphere and very slow pace of change during the Indian pre-independence era (i.e before 1947). The studies and resurveys undertaken in the later period observed changes taking place on the backdrop of overall increasing scale and extent of commercialization, expanding services of government institutions and development of village infrastructure and made an attempt to understand the drivers of change, various survival strategies of village households and overall structure of the village economy. The studies noted the phenomena of occupational diversification and gradual integration of the villages with the urban sector. Studies based on survey of villages of four southern states of India revealed diverse patterns of transformation as well as pace and direction of change (Rao and Nair, 2003). The survey (in 2004-05) and recently undertaken resurvey (in 2014-15) of one of the villages of Uttar Pradesh region of India revealed rise of rural non-farm economy, growing educational opportunities and increasing mobility across caste and community (Kumar, 2016). Overall, the studies have noted changes in institutional and infrastructure facilities, land ownership and land use patterns, population size and migratory patterns, gender equations, income levels etc.

It is clear from the literature that the village life in 1950s and in the current scenario has drastically changed. Reduced importance of agriculture as livelihood source, increasing occupational diversification and increasing unemployment, increasing extent of education, fragmentation of landholdings and changes in aspirations and frames of references of villagers are phenomena noted. In some respects, conceptual distinction between villages and cities

seems to be fading (Simpson, 2016). The literature suggests that trends observed in villages would influence status of villages in future and hence national policies need to be framed keeping in mind future course of phenomena that would be observed in the villages.

The recent literature as well as government policies discuss importance of developing villages in a smart way. The literature therefore discusses the concept of Smart Village and various initiatives undertaken world over for transforming the villages into smart ones (Zavratnik et al, 2018; http://nirdpr.org.in/nird_docs/tps/DG_Smart-Village-9-2-18.pdf). Major features of a smart village revealed through the literature are usage of information and communication technologies (ICT), energy efficient technologies and green initiatives.

In view of the importance of villages in the economy of the developing countries such as India and of village studies for policy making, the present paper, based on the survey (1976) and resurvey (2020) of village Gulumb situated in Satara district of Maharashtra state of India makes an attempt to study type and extent of changes that have taken place in the overall level of development of the village over the survey periods and to study the economic status of the households based on 2020 survey.

Objectives

The objectives of the paper are as follows

1. To study overall changing profile of the village in terms of structure of village economy, availability of civic amenities and infrastructure and other features of village during last 45 years i.e. during 1976 and 2020.
2. To analyse household level responses to capture changes in age structure, educational status, occupational structure of the sample household members and economic status of various categories of sample households, their perceptions about problems and challenges faced.
3. To suggest policy measures based on the emerging conclusions.

Methodology and Sampling

The study was based on primary as well as secondary data. The selected village for the present study is of moderate size and consists of 769 households. 400 households or 52 percent of total village households were selected randomly. Village level information was collected from decadal Population Census of India for the years 1981 and 2011 and the office of the local body *Gram Panchayat* (GP), elected representatives as well as experienced and knowledgeable villagers. Through these sources, information mainly about structure of population and infrastructure in the village was collected. A structured schedule was prepared for collecting household level data relating to the social and demographic characteristics occupational/ livelihood pattern, and their perception about rural change.

Changing Profile of Village Gulumb

A village with a population of more than 3000, Gulumb houses more than 700 houses and has a history of repeated surveys, conducted by Gokhale Institute of Politics and Economics, Pune. During 1936-37 and 1976 i.e. over a period of 40 years, the village households were studied through farm household surveys as well as comprehensive population surveys (Jagtap, 1970; Dandekar et al 1978). These studies found that over the time period, the isolated and self-sufficient nature of Gulumb went on changing and dependency of the village on the outside world and monetization of transactions gradually increased. It was also revealed that the tradition of cultivation of commercial crop like sugarcane and availability of credit for agriculture since the pre independence were the two major features of the village and perhaps these provided the needed stimulus for remaining integrated with the urban centres around the village.

Our study conducted in 2020 observed considerable progress in terms of civic amenities and infrastructure available, proportion of households with access to basic civic amenities and technology used in the village for communication and construction. The village had basic infrastructure such as water, electricity, transport, communication, education, credit facilities in 1976 which further got expanded over the concerned period. Basic health facilities were developed. The village got better approach road. The village now has a shop distributing subsidised food grains under government's public distribution system, government run *anganwadis* or nurseries for kids, sports ground and public library which did not exist in 1976. A number of women self help groups (SHGs) are also active in the village. The village has received a number of awards in the fields such as of forestry, adult education etc. As per the government guidelines, it has been an Open Defecation Free as well as Dispute Free village. There was no liquor shop in the village at the time of current survey undertaken in 2020. The unique feature of Gulumb has been the collaborative project of stream linking which was recently undertaken and completed for overcoming the problem of recurrent droughts.

The classification of main workers (workers working for at least six months in a year) in Gulumb as reported in Population Census of India, 1981 and 2011 (which are the Census years closest to the survey years 1976 and 2020) showed that overall, there was diversification of livelihood activities over the concerned period. Share of agricultural workers (cultivators and agricultural laborers) reduced from around 94 percent to around 74 percent. Simultaneously, share of non-farm workers increased from 6 percent to 26 percent to register an increase of around 333 percent. However, gender wise differences in the structure of workforce were noted. In 2011, the share of women agricultural workers was around 85 percent and that of non-farm workers was merely 15 percent as compared to 67 percent and 33 percent respectively in case male workers. This clearly underlines relatively lower mobility of women workers across the sectors as compared to the male workers.

Over the period, percentage of irrigated land expanded from 15 percent in 1976 to 52 percent in 2018-19. The villagers started cultivating new crops such as soybean, maize, ginger, green peas, fruits along with traditional crops such as sugarcane, beans and jowar. The data reveals usage of new seed varieties and yield increase in case of jowar, gram and summer groundnut during the two survey years. However, the village officials and the respondent households unanimously reported increased incidence of drought and its adverse impact on availability of drinking water and water for irrigation.

The social structure of the village has however remained more or less same with *Marathas* as the dominant *caste* (social category) consisting of more than 70 percent of the total households. The settlement pattern in the village was also based on social status not only in 1976 as but in 2020 as well.

Demographic Changes, Educational Progress, Livelihood Pattern and Economic Status - Household Level Observations

Changes that take place in the age structure, educational progress and the occupational structure over a long period of time highlight need to devise appropriate policies for improving standard of living of the households. In case of village Gulumb, these factors have demonstrated considerable changes during the two survey periods. This section therefore analyses some of the major changes observed in this regard. Based on income and expenditure of the households, it also analyses economic status of various categories of households for the year 2020. Detailed household level data relating to the earlier survey year 1976 however, was not available.

Age Structure during the survey Periods

It was found that as compared to the earlier survey year of 1976, age structure of the households was tilted towards relatively higher share of productive as well as elderly population in 2020 (figure 1). Whereas lower share of population in the 0-15 age group pointed towards reduced size of families and decline in birth rates, higher share of population above 56 years of age indicated increased life expectancy of the population over the concerned time period..

Table 1 shows distribution of population by age and marital status in the two reference years. It was observed that in 1976, 82 percent and 17 percent of the married population belonged to age groups 7-16 and 17-36. A comparison with the corresponding age group in 2019-20 shows that none from the former age group had got married and only 10 percent of the married population belonged to the next i.e.16-30 age group. Difference is also observed for unmarried household members. In 2019-20 survey, out of the unmarried members, most of the members were concentrated in first two age groups out of which 42 percent were in the 7-16 age. The 1976 data however shows that less than one percent of the total unmarried members were there in the above age group. The table also shows that practice of having co-

wife was prevalent during the earlier survey, however, it was not observed during the latest survey.

Educational progress in the village

Figure 2 indicates percentage of household members by level of education. It reveals overall lower share of illiterates and higher percentage of family members taking higher education during the current survey.

Table 2 shows gender wise school enrolment in 1976 as well as in 2019-20. Whereas the share of female students in primary school increased from 44 percent to 55 percent, that of female students in the secondary school increased from a low of 23 percent to 55 percent. Thus, the latter increased by 136 percent and indicated increased awareness about sending girls to high schools.

These demographic changes indicate changing preference in favor of delayed age of marriage which could be due several reasons, one of which may be the increasing importance of and preference for education. This therefore highlights need for creating employment opportunities in the farm and non-farm sector for educated youths of the villages.

Livelihood Pattern of the Household Members

Occupational structure of the household members showed that the share of agricultural workers i.e. cultivators and agricultural laborers was around 89 percent and the remaining 11 percent were non-farm workers in 1976. In 2019-20 however, it was observed that around 63 percent of the total workers were agricultural workers and share of non-farm workers was 37 percent (table 3). The data highlighted diversification of occupational structure towards non-farm sector and lesser proportion of workers employed in the farm sector during the 2020 survey. However, it also showed gender differences and higher share of female workers in the agricultural sector.

Economic status of the Sample Households

Data relating to income and expenditure of the sample households was analyzed with a view to understand the pattern of income of various types of households and their economic status. It was observed that on an average, the households earned 78 percent of the income from non-farm activities, 19 percent from farming and 3 percent from off farm activities (such as working as agricultural laborers and in agro-allied sector). Thus, though around 51 percent of the household members reported themselves as primarily cultivators (table 3), the households on an average earned merely 19 percent of the income from farming. This has indicated inadequacy of income from agricultural sector and need of the households to depend upon non-agricultural sources of income despite farming being their primary activity.

The analysis also indicated that the marginal farmer households (with less than 2 hectares of land) and the landless households in the village mainly survived on the income earned through off farm and non-farm activities. This share was 82 percent and 100 percent for these categories respectively. However, in absolute terms, the level of total average income earned by these categories was very low as compared to other categories, especially the highest land size category. The average number of sources of income was highest i.e. 6 for the landless households.

Household level data on monthly per capita expenditure (MPCE) was also analyzed. It was observed that that around 5 percent of the marginal land category households and 13 percent of the landless households respectively belonged to the two lowest MPCE classes indicating their proximity to the poverty line of the state (<https://www.rbi.org.in/scripts/PublicationsView.aspx?id=166603>). It was observed that in case of marginal farmers, very small size of landholding and limitations to having more sources of income led to lower income from farming and non-farm sources, lower consumption expenditure and inability to make investments in land and grow resource rich. As a result, more percentage of households in this category were in lower classes of MPCE as compared to other land size classes. In case of landless households also, in spite of having relatively more number of sources of non-farm income, the average income level for this category was very low and almost 15 percent of the households from this category had very low MPCE revealing their vulnerability. It was also seen that the share of households in higher MPCE classes was lower for these two categories. This highlighted their relatively lower economic status as compared to other categories. In case of medium and large land category households, almost 43 percent of the households belonged to the highest MPCE category.

For observing the factors that were correlated with land size, coefficient of correlation was found out between size of landholding of the households on one hand and income, expenditure, saving, borrowing of the households on the other. The coefficient was closer to 1 in case of income and expenditure indicating positive but weaker relationship due to factors such as variability in income and expenditure reported. It was greater than three in case of borrowing and greater than 4 in case of saving and revealed relatively stronger positive relationship as compared to the earlier case. This indicated more possibilities of growth in case of households with bigger land size.

The 1978 report notes that 60 per cent of the MPCE was on food and food grains accounted for half of this expenditure. For year 2019- 20 however, the corresponding shares were 38 percent and 25 percent respectively. The rest of the expenditure under food items during the latest survey was on livestock and horticultural products and other food i.e. processed food. Also, the two major items of non-food expenditure in 2019- 2020 were education and health and medical services, combined share of which was 28 percent. The

analysis and the comparison not only reveals diversification in occupations but also the ability and need of an average village household to spend on variety of items of expenditure as compared to the earlier survey year.

Perception of the Village Households

According to majority of the sample households, over the time period, the village experienced considerable expansion and improvement in village infrastructure. More than 80 percent of the households perceived that there was improvement in the economic condition of the village and village infrastructure over the time period. 62 percent of the households also felt that there was improvement in economic condition of their households.

However, responses of the households revealed that scarcity of water for drinking as well as irrigation, poor quality of drinking water, inadequate systems for maintaining cleanliness and sewage management, open drainages were the major problems faced by the villagers. It is interesting to note that the earlier (1978) report also mentions non availability of proper sewage system to drain out water and hence presence of stagnant water pools on roads and prevalence of unhygienic conditions. The households were also concerned about non availability of job opportunities around the village during the latest survey.

Conclusions and Recommendations

Data revealed that majority of the cultivating households were owners of small pieces of land and also their vulnerable economic status. Hence, efforts need to be concentrated on provision of adequate water for increasing yield and market intelligence for marketing of the produce. In view of the recurring droughts and its adverse impact, the suggestion of villagers to include the village under *Drought Prone Areas Program* needs be considered by the government. For making an effort towards becoming a drought free village, the villagers need to shift cropping pattern gradually away from sugarcane towards other traditionally grown crops / new crops introduced during last few years such as soybean and other high value crops such as vegetables and fruits. As far as drinking water is concerned, as was suggested by the villagers, water needs to be supplied after filtration to avoid and eliminate incidence of water borne diseases. Thus, water filtration plant needs to be constructed. Also, instituting proper systems for garbage collection and disposal, organizing awareness programs about garbage disposal and maintenance of cleanliness, constructing closed drainage system for carrying sewage water in the village are essential. The spread and extent of ongoing covid pandemic has underlined importance of good health and sanitation related facilities. These need to be promoted. Usage of solar energy for electricity generation and other purposes by the village authorities needs to be promoted. The analysis revealed need for addressing these issues also along with larger issues of creating employment opportunities so that the quality of life of the villagers improves.



In view of general opinion by members of sample households about need for employment generating activities, it is felt that opportunity specific training programs, capacity development programs may be organized. Also, technology training programs need be organized and imparted specifically to women involved in various livelihood supporting activities such as production of various items through activities of women self-help groups. Such training programs would provide platforms for communication and marketing of the produce and instill sense of empowerment. In view of changing age structure and increasing level of education it is essential to devise strategies for productive engagement as well as healthcare of elderly population.

Overall, the village has progressed during the last forty-five years. However, for further improving standard and quality of living and welfare of the villagers, focus needs to be on quality education, vocational guidance, health care, sanitation facilities, usage of environmental friendly technologies and local area development for creation of job opportunities. Usage of digital technologies especially for agriculture linked activities, communication and governance would greatly enhance pace and quality of outcomes and improve overall living of the households in the village in a smart way.

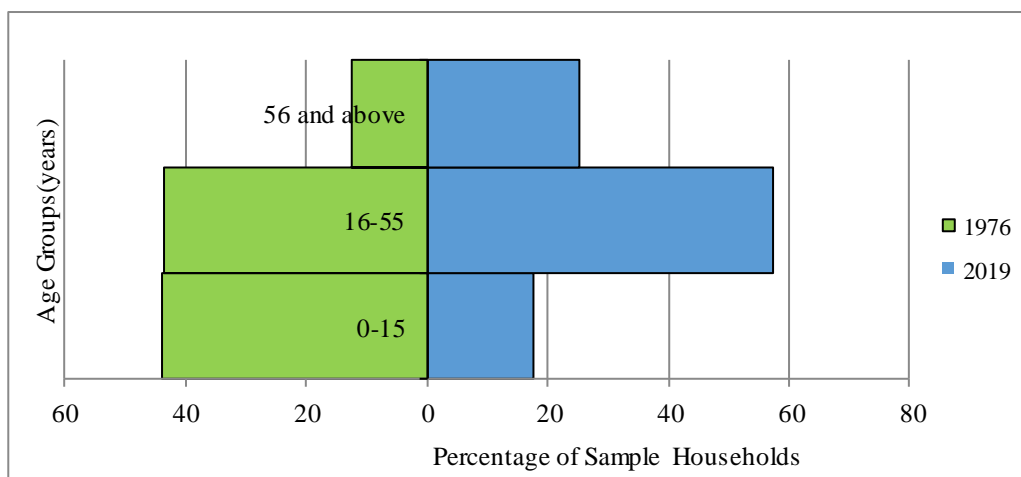


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Figures and Tables

Figure 1: Age Structure of Total Household Members in Gulumb



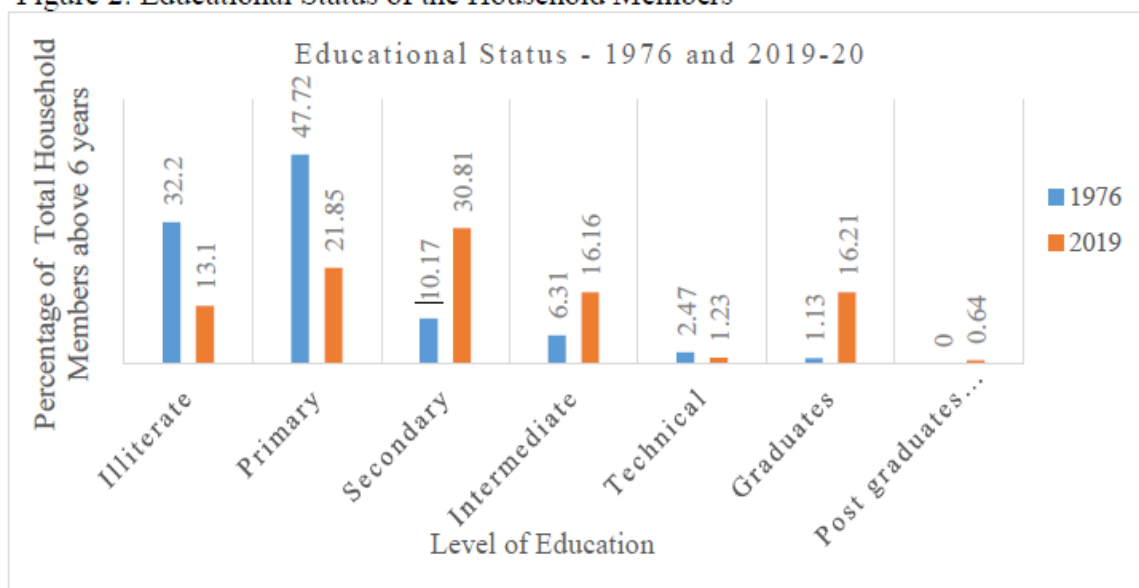
Source: Dandekar et al (1978), Field Survey-2020

Table 1: Distribution of Population by Age and Martial Status in the Village Gulumb, 1976 and 2019-20 (In percent)

	1976				2019-20			
	Age Groups	Married	Un-married	Co-wife	Age Groups	Married	Un-married	Co-wife
1	7-16	82.4	0.7	0.0	7-16	0.18	42.66	0
2	17-36	17.0	44.4	47.6	17-36	27.65	53.86	0
3	37-56	0.5	36.5	47.6	37-56	41.57	2.32	0
4	57+	0.1	18.5	4.8	57+	30.60	1.16	0
	All age groups	100.0	100.0	100.0	All age groups	100	100	0

Source: Dandekar et al (1978), Field Survey- 2020

Figure 2: Educational Status of the Household Members



Source: Dandekar et al (1978), Field Survey- 2020

Table 2: Gender wise Composition of Enrolled Primary and Secondary School Children in Gulumb (In Percent)

	1976			2019-20*			% Change
	Male	Female		Male	Female	Total	
High school	76.81	23.19	100	45.17	54.83	100	136.44
Primary	55.56	44.38	100	45.28	54.72	100	23.3

Source: Dandekar et al (1978), Field Survey- 2020,

Notes: * enrolment for the year 2018-19



Table 3: Occupational Classification of Household Members in Gulumb (In percent)

	Particulars	1976 Population survey			2019-20 Sample survey		
		Male	Female	Total	Male	Female	Total
1	Cultivator	68.81	77.19	73.98	49.73	55.55	51.23
2	Agricultural Labourer	10.87	17.54	14.98	8.58	21.71	11.96
3	Other workers	20.32	5.26	11.04	41.69	22.74	36.81

Source: Dandekar et al (1978), Field Survey- 2020