



Investigating the views of farmers on rural development through agriculture: A case study of Sakri tehsil in the Dhule district of Maharashtra

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Abstract:

Over the years agriculture has been the backbone of the rural economy of the study area. It not only provides livelihood opportunities but also contributes significantly to the overall development of rural areas. Maharashtra, known for its agricultural productivity, presents an interesting case to study farmer's perceptions regarding rural development through agriculture. This case study focuses on Sakri Tehsil in Dhule District, Maharashtra, aiming to explore farmer perspectives on rural development through the lens of agricultural practices and their implications. The role of agriculture is consistently diminishing, and the use of modern methods and chemicals is harming the quality of existing natural resources. There is an urgent requirement for deliberate initiatives to improve the agricultural sector in order to secure food supply and foster economic and rural development while preserving these natural resources. This study was designed to investigate farmers' views on sustainable agriculture and rural development.

Introduction

Sakri Tehsil, characterized by its diverse physiography, has a unique agricultural landscape shaped by local topography, climatic conditions, and socio-economic factors. The region is primarily inhabited by a farming community that relies on agriculture for their livelihood. Understanding the perspectives of these farmers is essential for designing effective rural development interventions that align with their needs and aspirations. Rural development is a multifaceted process that encompasses economic growth, social progress, and environmental sustainability within rural communities. In India, agriculture continues to be a critical sector that influences the livelihoods of millions.

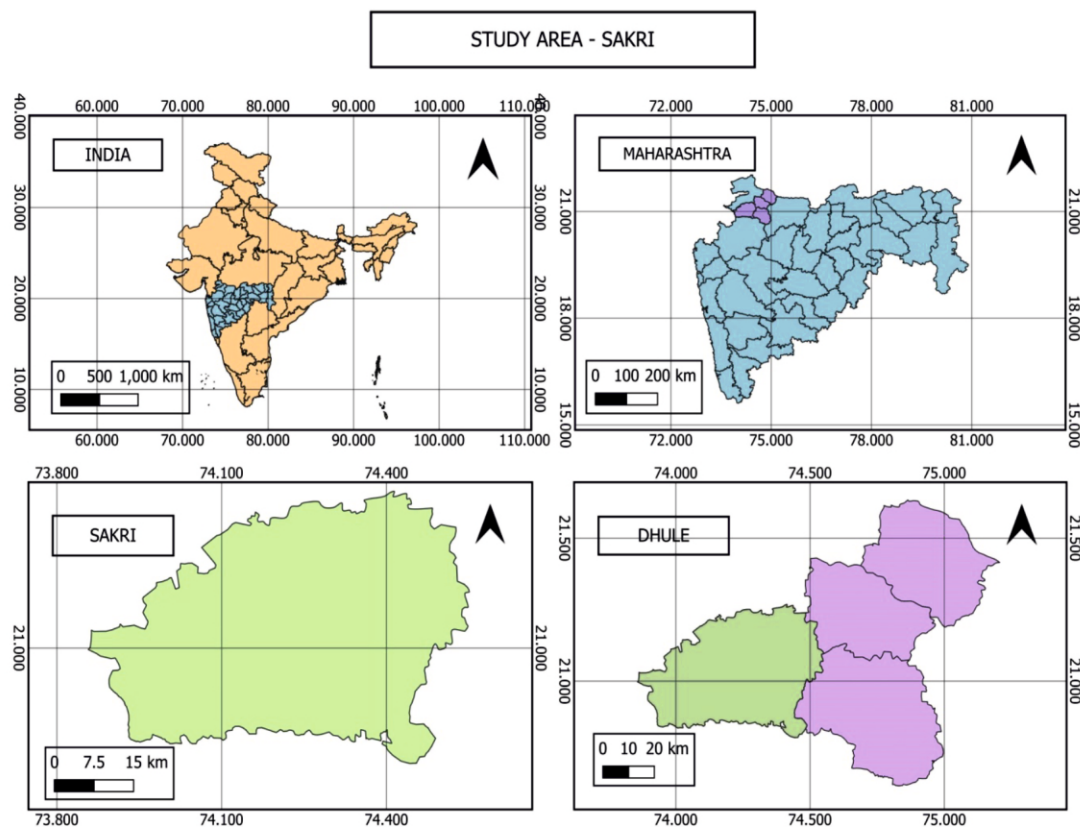
Objectives

1. To study the demographic characteristics of farmers in the study area.
2. To study the perception of farmers towards agriculture and rural development with an emphasis on sustainability.

Data collection and research methodology:

This research is a case study based on primary data collected through well-structured questionnaire and personal interviews of the farmers of Sakritehsil. It employed also qualitative research design, using interviews and focus group discussions to gather data. A sample of 600 farmers from nine circles villages in Sakri tehsil were selected using purposive sampling techniques. Semi structured interviews and focus group discussions were conducted to explore the farmer's perceptions towards agriculture, their experiences, challenges related to rural development.

Study Area



Dhule district, formerly known as west Khandeshis located in northern part of Maharashtra State. The geographical location of Sakritaluka $20^{\circ}17'$ to $20^{\circ}49'N$ and $73^{\circ}55'$ to $74^{\circ}15'$ longitude and the altitude is 600m above sea level Sakritaluka is bounded on the west by Navpur and the south by Gujarat, on the north by Nashik district and on the east by Dhule and Shinkhedatalukas. Sakri Tahsil is situated at the western side of Dhule city, about 55 km away from Dhule city coinciding with Nashik and Nandurbar District.

The total geographical area of Sakritaluka covers an area of 2398sq.km and is bounded on the west by the Sahyadri range. The Kan river originates at Hanumantpada near rainpada in Sakri taluka. The river flows so it is called as purvahini river. It is tributary of Panjar river. There is a confluence of Panzara and Kan rivers near Dattarti villages. Within the administrative framework, Sakri tehsil is organized into nine circles, namely Sakri, Shewali, Mhasadi, Dusane, Chhail (New), Nijampur, Jaitane (New), Balsane, Bramhanwel, Dahiwel, Rohad (New), Kudashi, Tembhe, Umarpata, Pimpalner, Samode (New), Chhadwel, Balhane (New). These circles collectively encompass a total of 225 villages,

Geology:

Soils in Sakri Tehsil are derived from igneous rocks such as basalt (Deccan trap), which are primarily basic and composed mainly of feldspars (plagioclase), augite, and a small amount of titaniferous magnetite. The vesicular rocks have cavities filled with minerals like zeolite and quartz, resulting in soil types that include black, medium black, shallow, red, and calcareous soils, each displaying varying depths and profiles. The distribution of these soil types across the area is as follows:

108,724 hectares are covered by black soil, 72,483 hectares by red soil, 28,983 hectares by sandy loam, and 31,421 hectares by other soil types.

Hydrology:

The primary sources of irrigation in Sakri Tehsil are wells and dams, including the Jamkhedi, Burai, and Akkalpada dams. The total area under irrigation is 22,374 hectares, while the rainfed area encompasses 95,426 hectares. Approximately 78.48% of the irrigated area relies on well irrigation, with 21.56% utilizing surface irrigation.

Climate:

Sakri Tehsil experiences a warm and dry climate. Agro-climatically, it is divided into two zones: 1) Scarcity Zone, located in the eastern part with erratic rainfall of about 500 mm and light to medium soils; 2) Transition II, located in the western part, receiving 700 to 750 mm of rainfall with light to medium soils. The average annual rainfall is 576 mm, with 75% occurring during the monsoon season, 17% in the post-monsoon, and 8% in the pre-monsoon. Notably, about 65% of the annual rainfall falls in July and August, while the remainder of the year is characterized by dry conditions with abundant sunshine and clear skies. Occasional light rains may occur during summer, highlighting the need for reliable irrigation to support summer crops. The average annual temperatures range from a maximum of 42°C to a minimum of 6.5°C, categorizing the area within a "hyperthermic" temperature regime.

Land Use and Natural Vegetation:

Sakri Tehsil covers a total geographic area of 244,110 hectares. The land distribution includes 30.18% forest land, 45.59% cultivated land, 11.85% land not available for cultivation, 1.78% fallow land, and 10.60% other uncultivated areas. The main kharif season crops consist of cotton, sorghum, bajra, maize, soybean, green gram, and red gram, while rabi season crops include wheat, maize, gram, and chili. Areas cultivated during the kharif and rabi seasons are 76,547 hectares and 24,574 hectares, respectively. The primary horticultural crops include fruit trees like papaya, banana, ber, custard apple, pomegranate, citrus fruits, guava, and lemon, along with vegetables such as onion and chili, occupying 4,150 hectares and 3,800 hectares, respectively. The region's natural vegetation is characterized by dry deciduous tree species, including Eucalyptus and Neem, along with other trees like Dhawada, Shisam, Khair, Tendu, Palas, Anjan, and Bamboo.

Physiography

The study region showcases a diverse landscape characterized by varying topographical features. The majority of Sakri Tehsil is dominated by the Dhanora and Galana hills, with significant ghats like Kondaibari and Lalingbari situated within the area.

Results and Discussion

The general analysis focuses on the demographic characteristics of farmers within the study area, examining factors such as gender, age, religion, family structure, education, and annual income. Understanding these demographics is essential for revealing the role of farmers in rural development in Sakritaluka.

Age and gender are critical determinants in shaping agricultural practices. The age profile of farmers significantly affects their engagement and contributions to rural development. For example, younger farmers tend to adopt innovative practices and modern technologies more readily due to their receptiveness to change (Spielman, 2017). In contrast, older farmers may adhere to established practices shaped by years of experience (Mishra, 2020). The participation of both men and women in agriculture highlights the evolving dynamics and implications of agricultural development, showing that 70% of those involved in farming activities are male, while 30% are female.

Young individuals often show a greater tendency to embrace modern agricultural technologies and sustainable practices, which boosts productivity and economic growth (Smith, 2018). According to Table 1, the majority of farmers belong to the age group of 30 to 45 years (36%), followed by those aged 18 to 30 (21%), and only 11% are aged over 60 years.

Table. No.1: Demographic Characteristics

Sr. No.	Demographic Characteristics	Age in years	Respondents %
1	Age Group	18-30	19
		30-45	39
		45-60	32
		60 and above	10
2	Type of Family	Joint Family	70
		Nuclear Family	30
3	Number of Family members	Alone	03
		2-4	27
		5-7	45
		8-10	18
		More than 10	07
4	Annual Income in Rupees	<5 Lakhs	48
		5 to 10 Lakhs	25
		10 to 15 Lakhs	10
		15 to 20 Lakhs	09
		>20 Lakhs	08
5	Education	Illiterate	05
		Up to SSC	22
		HSC	23
		Graduate	28
		Postgraduate	18
		Other Professional	04

The number of family members involved in agricultural activities plays a crucial role in determining productivity and efficiency. In the study area, 70 percent of families consist of more than five members who participate in various agricultural tasks, while only 30 percent of families comprise four members.

Education:

The educational background of the surveyed individuals showcases a broad array of qualifications. Of the respondents, 5 percent are classified as illiterate, indicating they have not received formal education. Further insights reveal that 22 percent have completed their education at the Secondary School Certificate (SSC) level, and 23 percent have reached the Higher Secondary Certificate (HSC) level. The distribution is relatively even, with 28 percent holding undergraduate degrees and 18 percent having earned postgraduate degrees, which highlights a significant commitment to higher education. Additionally, a small group, representing 4 percent, possesses other professional qualifications. This varied educational landscape underscores the diverse levels of educational attainment within the surveyed population, ranging from basic education to advanced degrees and specialized training.

Type of Family:

In the study area, the predominant family structure is joint families, which typically include multiple generations living together, creating a larger workforce for agricultural activities. In contrast, nuclear families may experience labor shortages, leading them to seek external labor (Doss et al. 2015). In this context, 70 percent of families are identified as joint, while 30 percent are nuclear. The collaborative effort typical of joint families can result in improved productivity and better resource management.

Annual income of Family:

Annual income encompasses the total earnings of a family from agricultural and allied

activities. For analytical purposes, income has been divided into five categories, facilitating an understanding of agriculture's role in the overall development of the rural area by examining income distributions across households. Among the surveyed individuals, 73 percent reported an annual income of less than 10 lakhs, while only 17 percent indicated earnings above 15 lakhs annually. A detailed account of income reveals that 48 percent earn under 5 lakhs, 25 percent fall between 5 to 10 lakhs, 10 percent earn between 10 to 15 lakhs, and 9 percent have incomes ranging from 15 to 20 lakhs. A smaller proportion, 8 percent, reported earnings exceeding 20 lakhs. This varied income distribution highlights the economic diversity within the surveyed population, covering both lower and higher-income households.

Perception of Farmers towards Agriculture:

Farmers' perceptions are assessed based on their views regarding the importance of agricultural activities, the economic advantages of farming, and the impact of others' knowledge on eleven factors related to agricultural perception. Table 2 outlines the findings regarding farmers' perceptions on multiple aspects of agriculture, including its role as a livelihood, the challenges associated with farming, and various other agricultural parameters. Responses were measured using a five-point scale ranging from "strongly disagree" to "strongly agree."

According to Table 2, 90 percent of farmers strongly agree that agriculture serves as both a means of livelihood and a way of life for individuals in rural areas, regardless of their literacy, with only 2.44 percent expressing strong disagreement. Additionally, 90.44 percent believe that farming is not just a business endeavor but rather a way of life, with only 1.11 percent disagreeing with this view. While 8 percent of respondents feel that agriculture is not a challenging pursuit, 81 percent view it as one of the most challenging activities in the region.

Table No. 2: Perception of Farmers towards Agriculture (in Percent)

Sr. no.	Farmers Perception towards Agriculture	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Agriculture is not only the means of livelihood but also an art of life	3.23	2.68	3.27	32.06	58.76
2	Farming is not a business, it is a way of life	1.14	2.58	3:87	51.41	41.00
3	Agriculture is known as one of the most reputed activities in society.	4.46	8.47	8.22	43.65	35.20
4	Agriculture is a challenging activity	2.90	5.43	9.79	48.34	33.54
5	Farmers who are able to accept the risks in agriculture.	1.22	6.70	9.89	45.76	36.43
6	Use of chemical fertilizers, high yielding varieties increase total agricultural production but degrade the traditional agriculture	2.04	1.82	6.45	41.59	48.10
7	Due to the land fragmentation, farming has to be done in insufficient agricultural land	1.48	7.81	09.35	47.24	34:12
8	Seeds varieties extinction is one the current issues	1.40	2.60	12.39	49.11	34.50
9	Agricultural training and extension services are highly essential	2.18	3.18	08.69	46.99	38.96
10	Agriculture creates more innovative, experimental tendencies	1.86	3.40	06.52	52.33	35.89
11	Sustainable agriculture is the Foundation of sustainable development	1.77	2.89	9.30	44.76	41.28

(Source: Computed from primary data)

Conclusion:

Agriculture has traditionally been one of the foremost economic sectors in India. However, with the rise of industrialization and the growth of the service sector, agriculture has experienced significant changes within the Indian economy. The contribution of agriculture is steadily declining, and the adoption of modern techniques and chemicals is degrading the quality of available natural resources. There is a pressing need for intentional efforts to enhance the agricultural sector to ensure food security and promote economic and rural development without depleting these natural resources. This study aimed to explore farmers' perceptions of sustainable agriculture and rural development. The findings indicate that farmers have a positive outlook towards engaging in agriculture and related economic ventures. However, merely raising awareness about fertilizers, chemicals, and pesticides is insufficient to achieve the goals of sustainable agriculture and rural development. Farmers must take mindful and careful actions in their agricultural practices at various levels. Families with a heritage of agricultural work should pass this legacy to future generations. The importance of sustainable agriculture for economic growth and rural development should be prioritized by farmers.

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