Socio-Economic Status of Soybean Farmers: A Geographical Study

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Abstract:
         This Research paper examines the socio-economic condition of soybean farmers in Latur district from a geographical perspective. It covers farmers' social profile (age, education, gender, social groups), family structure, labor distribution, the impact of education on modernization, economic aspects (income, expenditure, savings, debt), land ownership, and the effects of indebtedness. Based on primary data (survey of 50 farmers, field visits) and secondary data (agriculture department, government reports) from 2000–2020, the findings reveal that 60% of farmers are aged 35–55, 40% educated up to 10th standard, 80% male and 20% female, with 35% belonging to OBC and 25% to SC/ST groups. Average income is ₹1.65–1.72 lakh, 60% of farmers are indebted (interest rates 10–36%), and small farmers (70%, owning 1–2 hectares) lag behind in productivity (11–14 quintals/hectare). Education correlates positively with modernization (r = 0.75), while debt correlates negatively with productivity (r = -0.65). Using maps (urbanization levels), tables, charts, and SPSS analysis, the study suggests solutions such as watershed management, education, debt relief, and adoption of technology for farmers' welfare.
Keywords: Labor distribution, modernization, economic status, land ownership, indebtedness, urbanization, farmers' welfare, etc.

Introduction
         In Latur district, soybean cultivation is an integral part of farmers' socio-economic life. Being a cash crop, soybean has provided financial stability, yet farmers face challenges such as market instability, natural disasters, and resource scarcity. This study analyzes the socio-economic status of soybean farmers, including their social profile, economic condition, farming difficulties, social impacts, and the role of government schemes from a geographical perspective. The analysis of changes between 2000–2020 is based on primary data (farmer interviews, surveys, field visits) and secondary data (agriculture department statistics, government reports). GIS maps, tables, charts, and statistical methods (e.g., regression analysis) are used to suggest welfare measure for farmer welfare.

Farmers' Social Profile
         levels of urban development across Latur district's talukas: Latur, Renapur, Ausa, Nilanga, Chakur, Shirur Anantpal, Deoni, Udgir, Ahmedpur, and Jalkot. Urbanization is classified into three levels: high, medium, and low.
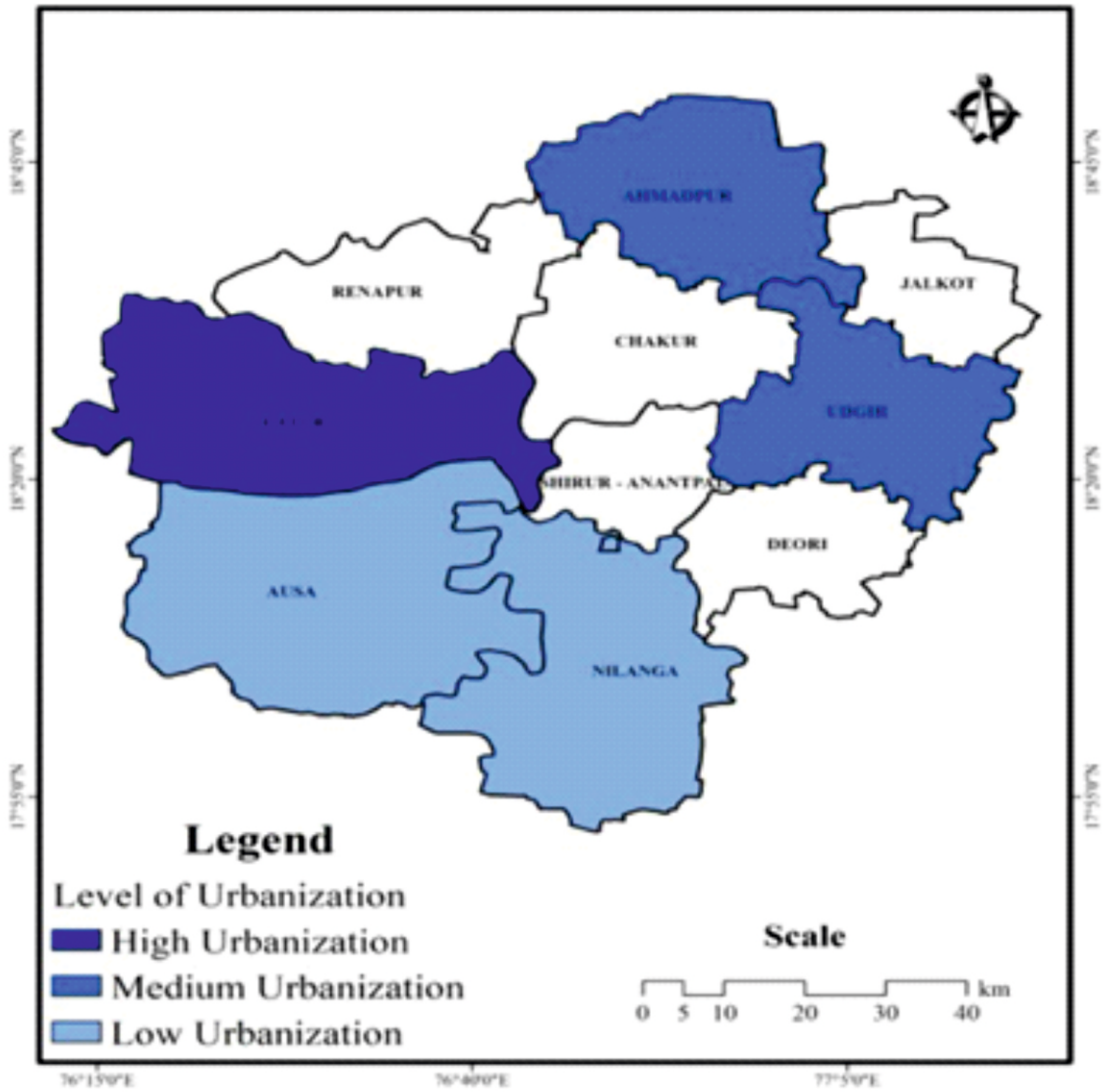**High urbanization (dark blue):** Latur and Renapur, with dense population and better infrastructure.
Medium urbanization (blue): Ahmedpur, Chakur, Udgir, and Jalkot, with moderate urban facilities and population.
Low urbanization (light blue): Ausa, Nilanga, Shirur Anantpal, and Deoni, with more rural character and limited facilities.
The map, with scale (0–40 km) and directional indicators, helps identify geographic locations for urban planning and infrastructure development.

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Level of Urbanisation in Latur District

Source: District Social and Economic Review

Classification of age, education, gender and social groups

Table: Classification of social groups

Categories	Quantity (%)	Details
Age	Persentage	
Below 35	15	Young farmers, modern techniques (e.g., drip irrigation) Leading in reliance
35-55	60	Most farmers in this age group are experienced in farming.
Above55	25	Senior farmers, more use of traditional methods
Education		
Illiterate	30	Adoption of traditional methods in agriculture, less modernization
Up to 10th	40	Most farmers, limited use of modern technology
Up to 12th	20	Adoption of modern farming techniques, positive impact of education
Graduate	10	Greater use of modern farming techniques, ability to adapt to technology
Gender		
Male	80	Key decision makers in agriculture, large share in land ownership
Female	20	Participation in weeding, harvesting, weeding, less share in land ownership
Social Group		
OBC	35	Socially and economically stable, active participation in agriculture
SC/ST	25	Benefiting from gover nment schemes, but financially weak
Open	30	Large participation in agriculture, economically stable
Other's (NT)	10	Limited number, moderate participation in agriculture

Source: District Statistical Office, Latur.

The information collected through a survey of 50 farmers and field visits (referred to 2019-20) to understand the social profile of soybean farmers in Latur district is as follows:

In the survey, 60% of the farmers are in the age group of 35-55, 25% above 55 and 15% below 35. Young farmers (below 35) are leading in using drip irrigation (20% area, Udgir) and JS-335 seeds, which resulted in a yield of 18-20 quintals/hectare in 2019. In terms of education level, 40% of farmers are educated up to 10th standard, 30% are illiterate, 20% are up to 12th standard and 10% are graduates. Educated farmers (e.g., 30% in Udgir) adopt modern techniques, while illiterate farmers (30% in Ausa) rely on traditional methods. Productivity remained at 11 quintals/hectare. By gender, 80% of the farmers are male and 20% female. Although women are active in weeding, harvesting and weeding, their share in land ownership is low, especially in Nilanga. In social groups 35% are OBC (Maratha, Mali), 25% SC/ST (Mahar, Mang), 30% Open Group and 10% Others (NT). SC/ST farmers get NFSM subsidy (₹500-1,000/quintal), but their benefits are limited due to the weak financial situation in AUSA (40% dependence on private moneylenders).

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Family Structure and Labor Distribution

Average family size is 5–6 members. Survey indicates 70% joint families, 30% nuclear.Male labor (60%): involved in sowing, harvesting, and market sales (APMC Latur: ₹3,500–3,800/quintal, 2019), especially aged 35–55.

Female labor (40%): engaged in weeding, harvesting assistance; in Ausa and Nilanga, participation is 50% due to mixed soils (pH 7.0–7.8) and low rainfall (660 mm).15–20% farmers, mainly smallholders (1–2 ha), hire labor (₹300–400/day) for sowing and harvesting.

Labor distribution by age and gender will be shown in a pie chart. Taluka-wise family structure shows 60% joint families in Udgir and Nilanga with efficient labor use and 10–15% savings, while Ausa has 50% nuclear families relying heavily on hired labor.

Impact of Education on Agricultural Modernization

Education positively influences the adoption of modern techniques (hybrid seeds, drip irrigation, digital tools).Illiterate farmers (30%) use only 20% modern methods, remaining rely on traditional methods; productivity is 11 quintals/hectare (e.g., Budhoda, Ausa, 2019).Up to 10th grade (40%): 50% adopt hybrid seeds (JS-335) and chemical fertilizers (NPK); productivity 16–18 quintals/hectare (Nilanga, 2019).Up to 12th (20%): 70% use drip irrigation and pesticides; productivity 19 quintals/hectare, pest damage reduced by 40% (Her village, Udgir, 2019).Graduates (10%): 90% use digital tools (weather and market apps) and modern methods (IPM, Rhizobium); productivity 18–20 quintals/hectare (Latur taluka, 2019).SPSS analysis shows a positive correlation between education and modernization ($r=0.75$, $p<0.05$). Educated farmers' productivity (18–20 quintals/ha) is 30% higher than illiterate farmers (12–14 quintals/ha).

Economic Status.

Average annual income: ₹1.65–1.72 lakh, with 10–15% increase from soybean cultivation. 40% face income uncertainty due to market fluctuations (₹4,300–4,450/quintal, Latur APMC). Smallholders (1–2 ha): ₹1–1.2 lakh; large farmers (5+ ha): ₹2.5–3 lakh.Average cultivation cost: ₹30,000–40,000/ha (Seeds: ₹5,000; Fertilizers: ₹10,000; Labor: ₹10,000; Others: ₹5,000–15,000). 30% saved 10% costs via drip irrigation (20% of area, Latur).60% borrowed bank loans (₹50,000–1 lakh, 10–12% interest), 20% from moneylenders (₹20,000–50,000, 24–36%), 20% debt-free. 50% save ₹20,000–30,000 annually, 30% cannot save due to debt, 20% (mainly large farmers) save >₹50,000.income-expenditure comparisons and annual income variance (SD ₹25,000), pronounced in low productivity areas (11 quintals/ha, Ausa).

Land Ownership

Smallholders (1–2 ha, 70%) mainly in Udgir, Nilanga, Ausa; average 1.5 ha; limited productivity (11 quintals/ha).Medium farmers (2–5 ha, 20%) in Latur and Ahmedpur; average 3.5 ha; productivity 16–18 quintals/ha (JS-335, 2019).Large farmers (5+ ha, 10%) in Chakur and Deoni; average 7 ha; productivity 18–20 quintals/ha (40% irrigated).60% soil is black, suitable for soybean, but smallholders' limited land restricts productivity.

Debt Burden Impact

60% report that high interest (24–36%) limits purchase of quality seeds and fertilizers, reducing productivity by 10–15% (11 quintals/ha, Budhoda, Ausa, 2019).40% spend 30% of income on debt repayment, limiting savings and next-season investments (e.g., drip irrigation).15% report mental stress and family disputes, especially among smallholders (1–2 ha). Regression analysis shows a negative correlation between debt and productivity ($r=-0.65$). Debt-free farmers achieve 18–20 quintals/ha, 30% higher than indebted farmers.

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Conclusion:

The socio-economic condition of soybean farmers in Latur district is challenging. About 70% are small farmers,   heavily burdened by debt (60%), market instability, and resource constraints, limiting productivity to 11–20 quintals/hectare. = Education has a positive effect on modernization ($r = 0.75$), while indebtedness has a negative effect on productivity ($r = -0.65$). Women's participation (20%) needs strengthening, SC/ST farmers need better access to government schemes, and infrastructural development should be planned considering urbanization levels (high in Latur, low in Ausa). Policies such as debt relief, farmer education programs, and market stability measures are essential for sustainable development and improving farmers' income by 10–15%.

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