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M Jegadeesan
Associate Professor,
Department of Agricultural
Extension, ICAR-KVK,
Ramanathapuram, Tamil Nadu,
India

MR Naveen Kumar
Assistant Professor, Department of
Agricultural Extension, SRM
Institute of Agriculture Sciences,
Chennai, Tamil Nadu, India

S Deepika
Independent Researcher,
ICAR-KVK, Ramanathapuram,
Tamil Nadu, India

Corresponding Author:
M Jegadeesan
Associate Professor,
Department of Agricultural
Extension, ICAR-KVK,
Ramanathapuram, Tamil Nadu,
India

The complementary roles of agriculture and industry in India's economic growth: A path to balanced development

M Jegadeesan, MR Naveen Kumar and S Deepika

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Abstract

Agriculture and industry, often perceived as distinct, are in fact highly complementary sectors, each essential to India's holistic economic development. This paper explores the symbiotic relationship between these sectors, emphasizing how balanced development in both agriculture and industry can create sustainable livelihoods, address poverty, and support rural-urban equity. India's agricultural sector faces a range of challenges, from climate change to labor shortages, which has accelerated rural-to-urban migration. We propose policies to bridge these sectors, suggesting pathways for inclusive growth that integrates industrialization with agricultural sustainability.

Keywords: Agrarian change, livelihood, migration, urban-rural linkage, Tamil Nadu

Introduction

India's economic reforms in the 1990s marked a period of transformative growth, particularly in urban centres. This growth trajectory, however, widened the gap between urban and rural areas, creating disparities as agricultural productivity lagged. In states like Tamil Nadu, the resulting divide has led many, especially young adults, to seek non-agricultural employment in cities. Some rural workers commute to urban centers, while others relocate permanently, resulting in a rural labor exodus. Agricultural operations, especially during peak seasons, now face significant labor shortages as rural wages rise, influenced by initiatives like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The resulting shifts have disrupted traditional, caste-based agricultural systems in Tamil Nadu, heralding substantial social and economic changes in these rural communities.

The Agriculture-Industry Nexus in Tamil Nadu

The development of industry has left a marked impact on rural economies in Tamil Nadu, especially in districts such as Erode, Tiruppur, Karur, and Trichy. Since the 1980s, labor-intensive industries in these areas have attracted workers not only from other parts of Tamil Nadu but also from other states in northern India. This shift underscores the interdependent relationship between agriculture and industry, which collectively contribute to India's socio-economic framework. While agriculture provides essential raw materials and sustains the labor force, industry supplies tools, technology, and employment, helping to modernize agricultural practices and boost productivity.

Agriculture's Role in Supporting Industry

Agriculture's contribution to industrial development is multifaceted:

- 1. Provision of Raw Materials:** Agricultural produce such as cotton, jute, oilseeds, tea, and spices serves as key inputs for consumer goods industries, underscoring the sector's role in industrial supply chains.
- 2. Sustenance of Labor:** Agriculture supplies food and fodder, crucial to maintaining the labor force that powers industrial sectors.
- 3. Financial Resources:** Farmers' savings in financial institutions often feed back into the

economy as capital, indirectly supporting industrial investment.

4. **Market for Industrial Products:** Rural households create demand for a range of industrial goods, including machinery and consumer products, maintaining a robust market for industrial output.
5. **Labor Supply:** Seasonal and surplus labor from agriculture can transition to industrial work, facilitating growth in both sectors.

Industry's Contribution to Agricultural Advancement

Industry supports agricultural development through:

1. **Tools and Equipment:** Industrial innovations such as tractors, irrigation systems, and fertilizers are integral to increasing agricultural yields and efficiency.
2. **Infrastructure Development:** Roads, storage facilities, and railways built by industry improve access to markets for agricultural produce, enhancing distribution and reducing post-harvest losses.
3. **Employment Opportunities:** By absorbing surplus rural labor, industry helps alleviate agricultural underemployment and provides alternative income sources for rural families.
4. **Expanded Markets for Agricultural Goods:** Industrial expansion creates new markets for agricultural products, especially within agro-processing industries.

Strategies for Integrated Development

To achieve balanced development, both agriculture and industry must thrive together, with policies that support their interdependence and sustainability. Industrial growth, while beneficial, has also spurred rural-to-urban migration, leading to urban challenges like overcrowding and resource strain. A harmonized development strategy should consider both sectors, promoting an equitable distribution of resources and opportunities. Key policy recommendations include:

1. **Allocating Industrial Projects to Non-Agricultural Land:** Prioritizing barren or underutilized lands for industrial projects can prevent the encroachment on fertile agricultural lands, preserving valuable farmland.
2. **Fair Compensation for Displacement:** Those affected by industrial development should receive adequate compensation, whether through direct financial support or employment opportunities in newly established industries.
3. **Encouraging Agro-Based Industries:** Industries that use agricultural produce as raw materials can create demand for farm outputs and add value, supporting the agricultural economy while generating rural employment.
4. **Promoting Labor-Intensive Industries:** Labor-intensive industries provide job opportunities for rural populations, helping to address underemployment and reduce migration pressures.
5. **Commercializing Agriculture:** Supporting farmers in diversifying and commercializing agricultural activities can increase their income and make farming a more attractive career path for young people.

Why are Youth Shying Away from Agriculture?

Presently, youth participation in the agricultural sector in India remains insufficient despite this demographic being among the most productive, comprising individuals in their physical and mental prime (Mangal, 2009)^[8]. A study by the Centre for Study of Developing Societies (CSDS) surveying 5,000 farm households across 18 states revealed that 76% of farmers would prefer alternative work, with 61% favoring city employment due

to better education, healthcare, and employment opportunities. Young farmers, especially those below 30, are more likely to leave farming, driven by occupational mobility, which is influenced by the income disparity between farm and non-farm jobs (Sharma & Bhaduri, 2009)^[13].

India reportedly loses over 2,000 farmers each day, totaling a decrease of 15 million farmers since 1991 (Sainath, 2013)^[12]. The rural youth migration rate to cities stands at an alarming 45%, with youth comprising 30% of total rural-urban migrants (Hazra, 2012)^[7]. This trend has critical implications for India's agricultural future and food security. The underlying reasons for this youth exodus from agriculture must be examined to address the growing disinterest.

The agricultural sector faces numerous issues, including debt, climate change, inadequate government support and credit, unregulated markets, land degradation, and poor infrastructure, all of which contribute to waning interest among the younger generation (Chaudhary & Chaudhary, 2013)^[5]. Other deterrents include low financial returns relative to effort, the perception of low social status attached to farming, and the lack of intellectual satisfaction in agricultural work (Anonymous, 2011)^[2].

Policies on trade, licensing, intellectual property rights, and taxation also fail to incentivize innovation in agriculture (Brooks *et al.*, 2013)^[3]. Moreover, many youth view agriculture as an outdated, financially unrewarding field, especially those with tertiary education who find better opportunities in cities (Paisley, 2013)^[11]. A preference for white-collar jobs, uncertain crop yields, low prices, and the assured income from salaried jobs drive young people away from farming (Sherawat & Sharma, 1994)^[14]. Additionally, urban wages in the unorganized sector are often higher than those in agriculture, despite the lack of employment security, income stability, or social benefits (Mehrotra *et al.*, 2013)^[9].

Decline in operational land holdings exacerbates this trend, with average landholdings dropping from 1.35 hectares per person in 2000-01 to 1.10 hectares in 2010-11 (Agricultural Census, 2011)^[1]. For these reasons, youth cannot be entirely blamed for leaving agriculture; indeed, their migration is sometimes justified by prevailing socio-economic factors. Some researchers suggest that rural parents should recognize this shift, as the demands of globalized economies shape new youth aspirations (Naamwintome & Bagson, 2013)^[10].

Addressing this issue requires rebranding agriculture to align with youth interests and aspirations. This might involve a comprehensive strategy that modernizes and restructures the sector to appeal to younger generations.

Challenges Driving Youth Away from Agriculture

India faces numerous challenges, including climate change, mounting debt, insufficient government support, market instability, and infrastructure deficiencies. These issues foster a perception among young people that agriculture is a high-risk, low-reward sector (Chaudhary & Chaudhary, 2013)^[5]. Additionally, the low social status associated with farming and the lack of intellectual stimulation make agriculture an unattractive option for educated youth (Anonymous, 2011)^[2].

Public policies on trade, intellectual property, and investment often fail to incentivize young farmers or attract private investors to support agricultural marketing, processing, and finance (Brooks *et al.*, 2013)^[3]. As a result, many young people see agriculture as outdated and financially unrewarding. Urban jobs appear more desirable, offering better pay, security, and opportunities for professional growth (Paisley, 2013)^[11].

A significant driver of this trend is the allure of white-collar jobs

and the income disparity between agriculture and non-agricultural sectors. Uncertainties around crop yields, low agricultural product prices, and a lack of financial security compound the issue (Sharma & Bhaduri, 2009) ^[13]. Migration statistics reflect this shift: daily wage rates in unorganized urban sectors often surpass those in agriculture, creating an incentive for rural youth to move away from farming (Mehrotra *et al.*, 2013) ^[9]. Additionally, the average operational landholding size has decreased, from 1.35 hectares in 2000-01 to 1.10 hectares in 2010-11, limiting the economic viability of farming for many (Agricultural Census, 2011) ^[1].

Rural Workforce Dynamics in Tamil Nadu

In Tamil Nadu, the rural workforce dynamics mirror broader national trends. Between 2001 and 2011, the number of rural workers rose modestly, but job opportunities remained limited (Census of India, 2011) ^[4]. The rural Work Participation Rate (WPR) saw only a slight increase, with female WPR significantly higher in rural areas than urban areas, reflecting the concentration of rural employment in agriculture and informal sectors. Due to economic pressures, many cultivators have transitioned into agricultural labor roles, with women making up a higher proportion of agricultural laborers compared to men (Sharma & Bhaduri, 2009) ^[13].

Rural Poverty in Tamil Nadu

Rural poverty in Tamil Nadu has seen a marked decline, from 37.5% in 2004-05 to 15.8% in 2011-12, as the state government aims for further reductions (Government of Tamil Nadu, 2012) ^[6]. However, poverty rates remain high in rural areas, where reliance on agriculture contributes to financial instability. Tackling rural poverty necessitates a multi-faceted approach that includes creating non-agricultural job opportunities, enhancing agricultural support, and fostering economic diversification within rural communities (Mangal, 2009) ^[8].

Impact of Rural-Urban Migration on Agriculture

The phenomenon of rural-to-urban migration, observed in India and other developing nations, has substantial effects on agricultural productivity. Migration predominantly involves young individuals, leaving rural areas populated largely by children and the elderly. This shift reduces the available workforce for farming, leading to underutilized land and financial losses for rural families (Hazra, 2012) ^[7]. Although urban jobs may lack long-term security, they often pay better than agricultural labor, further drawing youth away from farming (Sherawat & Sharma, 1994) ^[14].

A study in Tamil Nadu's Villupuram district found that younger, minimally educated individuals comprise a significant portion of rural migrants, motivated by low wages, limited workdays, and scarce economic opportunities in their hometowns (Sainath, 2013) ^[12]. The lack of secure, well-paying agricultural jobs drives youth to cities for better livelihoods, contributing to a significant labor drain from the agricultural sector.

Improving Agriculture and Balancing Industrial Growth

Harmony between agriculture and industrial growth requires targeted policies. Industrial expansion should prioritize non-arable or barren land to reduce competition for fertile agricultural land. A focus on agro-based industries can complement agricultural activities, providing jobs and value addition within rural areas. To make agriculture more appealing, private investments, modernized farming practices, and improved market access for agricultural products are essential

(Brooks *et al.*, 2013) ^[3].

Engaging Youth in Agriculture

To make agriculture attractive to youth, major reforms are necessary. Youth need to view agriculture as profitable, dynamic, and innovative, with opportunities for professional growth. This shift can be achieved by modernizing farm operations and providing youth with better access to technology, training, and management skills, reshaping their perceptions of farming (Paisley, 2013) ^[11].

Agricultural extension services are crucial here, as they can connect youth with the latest farming practices and entrepreneurial opportunities. Programs that focus on skill development, access to credit, and support for agribusiness ventures can help young people see agriculture as a viable career path. Government policies must also prioritize financial incentives and support structures specifically tailored to young farmers (Naamwintome & Bagson, 2013) ^[10].

Conclusion

Addressing the disinterest of youth in agriculture is critical for the sustainability of India's agricultural sector and rural communities. By enhancing the economic viability and social perception of farming, aligning public policies to support young farmers, and promoting agribusiness entrepreneurship, India can encourage its youth to reinvest in agriculture and secure a balanced path toward national growth and food security.

India's economic future depends on the balanced development of both agriculture and industry. The integration of these sectors is not a matter of "industry versus agriculture" but rather "industry and agriculture" working in tandem. Through targeted policies, the government can foster a development model that supports agricultural growth alongside industrial advances, leading to sustainable, inclusive growth across both rural and urban landscapes.

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