INCOME DISPARITY BETWEEN FARMERS AND INTERMEDIARIES: A STUDY OF KHAMGAON REGION

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Abstract
This research paper investigates the income disparity between farmers and intermediaries within the agricultural supply chains of the Khamgaon region. The study examines how farmers, who are the primary producers of agricultural goods, experience significant economic challenges due to low wages, limited access to markets, and insufficient bargaining power. In contrast, intermediaries, including wholesalers, traders, and retailers, capture a disproportionate share of the income generated in the supply chain. By analyzing economic data, market structures, and the flow of goods from farm to consumer in the Khamgaon region, the paper highlights the factors contributing to this income inequality, such as price volatility, middleman margins, and local policy frameworks that favor intermediaries. Through a combination of qualitative and quantitative methodologies, this research aims to provide a comprehensive understanding of the root causes of income disparity in Khamgaon and suggests potential policy interventions to promote fairer income distribution within agricultural markets. The findings emphasize the need for improved market access, fair pricing strategies, and stronger support systems for farmers to reduce economic inequality and foster a more sustainable agricultural sector in the region.

Introduction

In developed markets, intermediaries play the role of institutions between producers and consumers, however, in the majority of the developing countries, the market system in the agriculture sector is controlled by the intermediaries and their role is quite exploitative. The entire supply chain is dominated by intermediaries and small farmers face several issues starting from field to market. After crop harvesting, small producers usually don't have access to the market and they left with no choice except to sell their produce at the farm at a very low price compare to the market.

The intermediaries, in turn, sell these products at a relatively high price in the market and get maximum profit without investing anything. According to the FAO, intermediaries on average make 20 times higher than what the framers received which translates into disproportionate large profit margins at the expense of the farmer.

Majority of the time, farmer's input cost per hectare is very high due to pesticide, fertilizer, land preparation compared to the sale price and farmer has less or no incentive to produce which not only results in low crop yields but also decrease in agriculture output thus translating into increased prices at the consumer end .

Being the primary producers of food farmers earn significantly lower income compared to intermediaries in the agricultural value chain leading to :

- Low profit margins for farmers
- Limited investment in Agricultural productivity
- Increased rural poverty • Reduced food security and quality
- Inefficient agricultural value chains
- Lower farmer income

Above problem statement give brief idea of the research. With the emerging trends in technology, availability of mobile phones, and access to the internet could create huge advantages for the farmers. The use of technology is already helping to reduce price discrepancies and filling the gap between small and large-scale farmers. The objectives of the research are promote sustainable agricultural practices to farmers, increase transparency in chains , support farmers to improve their income , spreading awareness among farmers about market.

Literature Review

❖ Challenges Faced by Small and Marginal Farmers in India

Agriculture is a vital sector of the indian economy that provides livelihoods to a large majority of the rural population. Agriculture and its allied sectors contribute about 17-18% to the country's GDP and employ about 50-60% of the total workforce. The service sector has overtaken agriculture as the leading contributor to the GDP. Agriculture in India is largely depends on monsoon. As a result, production of food-grains fluctuates year after year. A year of abun- dant output of cereals is often followed by a year of acute shortage. Research highlights the pivotal role of

agriculture in India's economy, providing livelihoods for rural households, primarily small and marginal farmers (Kumar et al.). However, these farmers encounter numerous challenges, including Limited access to credit and inputs ,Inefficient market linkages, Inadequate supply chains families (Sunil Kumar1 , D.U.M. Rao2 , Pratibha Thombare3 and Pandurang Kale**)**. Literature suggests that strategic interventions can enhance the livelihoods of small and marginal farmers, Leveraging Information and Communication Technologies (ICTs) for knowledge dissemination, Capacity building through training and education**,** Climate-resilient agricultural practices,Increased food production**.** Research emphasizes the importance of market-oriented research investments to Mitigate glut situations, Boost farmers' income, Promote Farmer Producer Organizations (FPOs) and Farmer Producer Companies (FPCs).

- **The Significance of Smallholding Farmers in Global Agriculture**

Smallholder farmers are integral to local economies, creating jobs and supporting rural livelihoods. They often engage in local markets, contributing to economic activity and community development. By selling directly to consumers or participating in cooperatives, smallholders can retain more of their earnings, which boosts their economic stability. Agriculture, the world's largest industry, employs over one billion people and drives economic growth, human wellbeing, and development (Amir et. al. 2003). Smallholding farmers play a vital role in ensuring food security, reducing poverty, and promoting sustainability (economic, social, and ecological).The concept of smallholding farming is diverse and complex, with varying definitions across organizations. Commonly, smallholders are characterized by limited resources, typically owning less than 2 hectares of cropland (World Bank, 2003; FAO, 2014).Approximately 570 million smallholders worldwide, primarily in Asia and the Pacific (74%), contribute significantly to global agriculture output, providing 80% of food in developing countries (FAO, 2014).Despite their importance, smallholders face numerous challenges, including exploitation by intermediaries (middlemen, wholesalers, retailers, and brokers), which threatens their livelihoods and global food security.

- **Market Participation and Farmers' Well-being: Insights from Empirical Studies**

Connecting farmers and farmer groups by helping them understand market demand, food safety requirements, market networks, and market intelligence is essential for strengthening their ties to the market. The link between market participation and farmers' well-being has been thoroughly examined, showing notable effects on livelihoods, income, poverty alleviation, dietary diversity, and rural economic development. Research consistently indicates that engaging in markets significantly influences farmers' livelihoods, income levels, poverty reduction, dietary diversity, and rural economic growth (Ma et al., 2024). A collection of fifteen studies featured in a special issue emphasizes the importance of: Market participation in boosting both subjective and objective well- being for farmers, resulting in higher income, reduced poverty, and improved dietary diversity; the choice of marketing channels, with online sales notably enhancing farmers' earnings; e-commerce as a means to connect farmers to larger markets, promoting income growth and increasing market visibility; understanding farmers' preferences for market access strategies, such as systematic policies and joint ventures, to improve market integration; and the dynamics of market power within the agricultural sector, highlighting increasing markups that particularly impact low-income countries. Policies and initiatives focused on enhancing market access, encouraging e-commerce, and taking into account farmers' preferences and market power dynamics can greatly influence farmers' incomes, poverty rates, and rural economic progress.

- **Farming Systems and Poverty**

Farming systems encompass the various agricultural practices and techniques that farmers use to cultivate food and other crops. Smallholder farmers are essential to global food production, yet they often struggle with poverty and food insecurity (John Dixon and Aidan Gulliver et al.). Even with increasing urbanization, the number of people engaged in farming will remain significant, highlighting the need to tackle the challenges that small farmers encounter. These farmers operate in complex biological, physical, economic, and cultural contexts, which affect how they use resources, make decisions, and structure their

livelihoods. Acknowledging the diversity among smallholder farming systems, this research employs a farming systems approach to pinpoint common issues and priorities that cross administrative boundaries. The study focuses on 20 key farming systems that hold great potential for reducing poverty, alleviating hunger, and fostering economic growth. It evaluates five household strategies for overcoming poverty and hunger: production intensification, agricultural diversification, increasing farm size, expanding off-farm income, and exiting farming altogether. The research looks into the most effective strategies for small farmers within each system and examines initiatives to support their implementation. This study is based on a World Bank- sponsored project, drawing on expertise from the FAO, World Bank, and other organizations. Twenty case studies from around the globe contribute to the analysis. The findings are intended to guide policymakers, researchers, NGOs, and the agribusiness sector in crafting effective rural development strategies.

Research and Methodology

Surveys:

- Demographic information (age, education, land size)
- Income details (sources, average annual income)
- Market access and pricing information.

- Administer surveys through face-to-face interactions or online forms.

Interviews:

- Conducting semi-structured interviews with a subset of farmers (about 20) to gain deeper insights into their experiences with intermediaries, pricing challenges, and market dynamics.

Observation:

- Conducting field observations in markets and farms to understand practices, interactions with intermediaries, and the conditions under which farmers operate.

❖ **Objectives:**

- To identify the current financial condition of farmers
- To study the causes and obstacles faced by the farmers in reaching the buyers
- To organize marginal farmers and help them to increase their income
- To Enhance farmers livelihoods and reduce poverty

❖ **Research Design:**

- Type: Discriptive research design
- Apporoach: this research will combine both quantitative and qualitative research methods to gain a comprehensive understanding about need of farmers.

❖ **Data collection methods:**

- **Primary Method of data collection:**
  - Interview method
  - Surveys
  - Questionnaire method
  - Observatio

- **Sampling**

Research conducting on the basis of primary data of marginal farmers who won the land (1 acre to 5 acre)

The data collected through interviews, surveys and Observation of farmers.

- Sampling size: 100 farmers
- Sampling technique :
  Simple Random Sampling: Randomly select 100 farmers from a defined population within Khamgaon to ensure diversity.
- Area of study: Tq. Khamgaon, at makta – kokta
- Collection of data through : Google Forms

- **Data Analysis :** Qualitative and Quantative data analysis

Analysis and Interpretation:

Income disparity between farmers & intermediaries A Study of Khamgaon Region						
Counts in %						
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Total**
Market Mechanism	16%	83%	1%	0%	0%	100
Lack of market Access	2%	2%	1%	93%	2%	100
Transpotation cost	0%	8%	1%	74%	17%	100
Opportunity cost	0%	0%	0%	88%	10%	100
Access to agriculture Education & Training Programs	2%	1%	28%	67%	2%	100
Access of Market Information	3%	6%	52%	39%	0%	100
Divercification of income source	4%	12%	61%	21%	0%	100
Adaptation Of Price	0%	11%	84%	0%	0%	100
Member of Farmer association	8%	90%	1%	1%	0%	100
Want to learn about selling farm products online	0%	0%	5%	85%	12%	100

➢ **Hypothesis Testing:**

- **One-Way ANOVA** is used to compare the mean responses across multiple groups.
- In this case, we can test whether there is a significant difference in farmers' responses across multiple factors (e.g., Market Mechanism, Lack of Market Access, Transportation Cost, etc.).

➢ **Hypothesis for ANOVA:**

- **Null Hypothesis (H_0):** There is no significant difference in farmers' responses across the different factors affecting income disparity.
- **Alternative Hypothesis (H_1):** At least one factor significantly differs in its impact on income disparity.

➢ **ANOVA Test Calculations for Each Factor**

Factor	**Mean Response**	**Variance**
Market Mechanism	1.85	0.149
Lack of Market Access	3.91	0.285
Transportation Cost	4.00	0.505
Opportunity Cost	4.10	0.093
Agriculture Education	3.66	0.408
Market Information	3.27	0.502
Income Diversification	3.01	0.505
Price Adaptation	2.88	0.103
Farmer Association	1.95	0.129
Online Selling Knowledge	4.07	0.164

➢ **ANOVA Test Results:**

- **F-Statistic:** 249.21
- **P-Value:** 1.42×10^{-246} (extremely small)

➢ **Interpretation:**

Since the p-value is far less than 0.05, we reject the null hypothesis (H_0). This means there is a statistically significant difference in responses across the different factors affecting income disparity among farmers.

This suggests that factors like market access, transportation costs, agricultural education, and online selling knowledge impact farmers differently, and some have a stronger effect on income disparity than others.

- The highest mean scores are for Opportunity Cost (4.10), Transportation Cost (4.00), and Online Selling Knowledge (4.07), indicating that farmers strongly agree that these factors impact income disparity.
- The lowest mean scores are for Market Mechanism (1.85) and Farmer Association (1.95), suggesting that farmers largely disagree that these factors significantly impact their income.
- The highest variance (indicating diverse opinions) is in Transportation Cost (0.505) and Market Information (0.502), meaning farmers had mixed responses.
- The lowest variance is in Opportunity Cost (0.093) and Price Adaptation (0.103), meaning farmers' responses were more consistent.

Conclusion

The study highlights that income disparity is significantly influenced by factors like transportation costs, market access, opportunity cost, and online selling knowledge. By implementing stronger education programs, digital selling platforms, and better farmer associations, the government and stakeholders can help reduce the income gap between farmers and intermediaries.

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