


## Not Walking the Talk

The Central University of Himachal Pradesh (CUHP) is the only central university established under the Central University Act, 2009 that has not been allotted a permanent land for its campus. And, there are mostly political reasons behind it. It is a fight between two political parties, where one is trying to take it to Dehra and the other wants it to be established in Dharamshala. As a result, the CUHP has been, since its inception, stuck (with very little hope of moving to a permanent place) in the Temporary Academic Block (TAB) at Shahpur, which was originally constructed for the Government College.

There are serious problems faced by the teachers and students of this university because of non-allotment of land. It must be kept in mind that students are basic beneficiaries of a university. The extent to which a university can contribute to their learning depends on both good teachers and supporting infrastructure. The delay in land allotment is creating problems on both fronts.

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# Agricultural Situation in India

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**RESEARCH ARTICLE :**

# Resource–use efficiency and technical efficiency of turmeric production in northern Karnataka

■ VINOD NAIK AND S.B. HOSAMANI

**ARTICLE CHRONICLE :**

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**SUMMARY :** The present study is an attempt to assess the resource-use and technical efficiency in turmeric production in Northern Karnataka. For the study, 96 farmers practicing the cultivation of turmeric in both Bagalkot and Belagavi district were selected randomly. The data collected from the respondents were analysed using Cobb-Douglas (CD) production function and Timmer’s output based measure of technical efficiency. The study revealed that, the MVP: MFC ratio was found more than unity in case of planting material, chemical fertilizers and plant protection chemicals in Belagavi district and bullock labour, machine labour and chemical fertilizers in Bagalkot district and nearly 50 per cent of the farmers were operating under less than 90 per cent technical efficiency ratings, mainly due to use of traditional cultivation practices. The major production and post-harvest constraint as opined by the sample farmers in both the districts were pest and disease attack and price fluctuation, respectively.

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**KEY WORDS:**

Garrett’s ranking, Resource-use efficiency, Technical efficiency, Turmeric

## BACKGROUND AND OBJECTIVES

India is popularly known as the “spice bowl of the world” as a wide variety of spices with premium quality are grown in the country since ancient times. In Vedas, as early as 6000 BC, scruples evidences are available regarding various spices, their properties and utility. Among the commodities that were traded during that period, spices occupied a major portion due to their superior quality and diversity which attracted foreigners to India. Turmeric is also called as golden spice-is widely cultivated in different countries such as India, China, Myanmar, Nigeria, Bangladesh, Pakistan, Sri Lanka, Taiwan,

Burma, Indonesia, etc. Among these countries, India occupies first position in both area (233 thousand hectares) and production (1190 thousand tonnes) of turmeric during 2013-14 (Anonymous, 2015). In India, turmeric is grown in 18 states and Andhra Pradesh, Tamil Nadu, Karnataka, Orissa and West Bengal are the major turmeric-producing states. Karnataka is the third largest producer of turmeric in India after Andhra Pradesh and Tamil Nadu with an area of 24912 ha and with production of 250829 tonnes in 2010-11 with a share of 8.5 per cent to the India’s total production. In Karnataka, the major districts which are producing turmeric are Chamarajanagar, Mysore, Bagalkot, Belagavi

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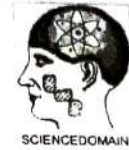
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## Value Chain Analysis of Turmeric in Northern Karnataka, India

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### Authors' contributions

This work was carried out in collaboration between both authors. Author VN designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author SBH supervised and guided each step, edited and proof read the manuscript. Both authors read and approved the final manuscript.

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### ABSTRACT

The present study is an attempt to assess the economics of production, farm level processing and to identify and evaluate the different marketing channels which are involved in the marketing of turmeric in Northern Karnataka. For the study, 96 farmers practicing the cultivation of turmeric in both Bagalkot and Belagavi district were selected randomly. The data collected from the respondents was analysed using budgeting technique. The data pertained to the 2011-12 agriculture year. The estimated per acre cost of cultivation was more in the case of Belagavi district than that of Bagalkot district whereas, the gross returns and total marketing costs were higher in the case of Bagalkot district. The B: C ratio was found to be profitable in both the districts. With respect to marketing cost incurred by the market intermediaries, it was more in the case of wholesalers. Results of the marketing efficiency showed that, channel-III was the most efficient marketing channel, thus selling of turmeric to the processors through commission agents/traders was said to be an efficient marketing channel.

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**RESEARCH ARTICLE :**

## Socio-economic analysis of organic and non-organic vegetable growers in Belgaum district of Karnataka

■ VINOD NAIK, L.B. KUNNAL AND K.R. NETHRAYINI

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**SUMMARY :** The present study was conducted in Belgaum district of North Karnataka as there are large numbers of farmers practicing the organic cultivation of vegetables. 30 farmers each practicing organic cultivation of tomato and chilli and 30 farmers each practicing non-organic cultivation of tomato and chilli spread over the district of Belgaum were selected randomly for the study. The collected data were analysed using tabular presentation method and Garrett ranking technique. The study revealed that, majority of the sample farmers expressed increasing return from organic vegetables as the reason for shifting over to organic cultivation of vegetables from non-organic cultivation. The estimated per acre cost of cultivation of tomato and chilli on organic farms was high as compared to non-organic farms whereas, the net returns was high in the case of organic farms as compared to non-organic farms. The major problems faced by the sample farmers were non-availability of labour and high commission charges.

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**KEY WORDS :**

Organic farms, Non-organic farms, B:C, Garrett ranking

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## Relationship between Crop Diversification and Farm Income in Odisha — An Empirical Analysis<sup>§</sup>

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### Abstract

This paper has examined the extent and pattern of crop diversification and its impact on farm income across all the districts of Odisha. The determinants of crop diversification have been identified. Using the NSSO data, the study has found three districts, namely Anugul, Jharsuguda, and Balangir, to be highly diversified districts and the average farm income in these districts is significantly higher than in both moderately and least diversified districts. The medium farmers are the most diversified category of farmers in two out of the three highly diversified districts. The marginal farmers are the most diversified category of farmers in one highly diversified district. On the basis of regression analysis, the study has found that SC households in Odisha are less diversified in comparison to other households and higher the extent of irrigated land, lower is the extent of crop diversification.

**Key words:** Crop diversification, farm income, irrigation

**JEL Classification:** Q100, Q12, Q15

### Introduction

The Government of India, in its annual budget 2016-17, announced to double farmer's income by 2022. The shift of focus from agricultural output and food security to farm income is a welcome step given the low level of absolute as well as growth in farm income (Ranganathan, 2015; Chand *et al.*, 2015). Now the question is how to double farmer's income? The answer to the question fundamentally lies on improved performance of agriculture in the country. Many studies have found a direct impact of improved agricultural performance (in terms of high growth rate of agriculture sector) on rural incomes (DFID, 2004; Bresciani and Valdes, 2007). We can expect such a relationship in

India given that agriculture contributes significantly to rural income for all farm households in general (with a contribution of 41.4 % to total income) and for the bottom 20 per cent of farm households (nearly 50 %) in particular (Birthal *et al.*, 2014). There are also evidences in literature which show that increased farm income results from high growth rate in agriculture and it eventually leads to higher poverty reduction (Ligon and Sadoulet, 2008; Montalvo and Ravallion, 2009; Ravallion and Chen, 2007; Kumar *et al.*, 2011; Sharma and Kumar, 2011).

If high growth in agriculture increases farm income, then the next question is how to increase its growth rate? The sources of agricultural growth may stem from within and/or outside the agricultural sector (Chand *et al.*, 2015). Factors such as increase in productivity, lower cost of production with efficient use of resources, increase in cropping intensity, diversification towards high-value crops, and

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§ This paper has been developed from an yet to be submitted PhD thesis of the first author to the University of Hyderabad.

Amit Kumar Basantaray

## Rural Non-Farm Sector in Odisha: Trends and Determinants

**Kamal Singh**

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### Abstract

*Rural economy is undergoing a structural change in India. The rural sector is losing its sheen and is plagued with multiple problems like declining productivity, high land man ratio, fragmented and small landholdings, etc. On the other side, RNFS has assumed an important role in solving problems pertaining to the rural sector along with generating employment and reducing rural poverty. Within the rural economy of the country Rural Non-Farm Sector (RNFS) over the past few decades has occupied centre stage. This paper tries to examine the trends and the major determinants of RNFS in Odisha. The paper highlights that over a period of time the significance of RNFS is increasing in rural sector of Odisha. Further factors like general education, technical education, social security benefits, location of work, the caste of the worker have a positive effect, while the area of land owned and sex effects negatively the rural worker's participation in RNFS.*

**Keywords:** *Employment, Farm sector, Non-Farm Sector, Rural Economy, Rural Poverty*

### Introduction

The rural economy of India is witnessing the process of rural diversification. The agriculture sector/farm sector is registering declining share both in the national output and employment. On the other hand, Rural Non-Farm Sector (RNFS) has emerged a significant sector and its share and contribution is increasing at an increasing rate. Large number of factors have contributed to this diversification in rural areas. Farm sector for long is plagued with a number of problems like the ever-mounting pressure of unemployment, low productivity, rural indebtedness, farmers' suicides, underemployment and continuous addition in the rural labour workforce which indicate that agriculture sector no longer holds the key for additional employment and rural growth. Under these circumstances, the rural non-farm sector has emerged as a solution to the various problems faced by the rural sector (Visaria and Basant, 1994<sup>1</sup>; Chadha, 2002<sup>2</sup>; Lanjouw and Murgai, 2008<sup>3</sup>). This process of rural diversification is not the same in all the states of India. Some Indian states have witnessed a higher degree of diversification while it is low and Odisha is also one of the states which is also undergoing such change. Odisha is one of the backward states in India in terms of economic development. It is primarily agrarian based economy with large emphasis on agriculture sector both for State GDP and employment. In Economic literature there are



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# Rural Diversification in Himachal Pradesh

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## 1. Introduction

Rural diversification is a national phenomenon in India and the hilly state of Himachal Pradesh is also experiencing this development. A large amount of literature and studies have documented the extent, nature and various facets of this diversification and Rural Non-Farm Employment (RNFE) at the national level and in the context of major Indian states. However, the information about the different facets of rural diversification and RNFS especially in the case of hilly states is an under-researched area. It is with these questions in mind we attempt to understand the nature, extent, trends and patterns of employment in RNFS in Himachal Pradesh and ii) to identify and examine the major determinants that affect access to RNFE.

The following chapter is divided into five sections. Section 1 introduces the concept; literature review is summarised in Section 2; Section 3 deals with data and methodology; Structure of RNFE in HP is sketched in Section 4; the summary and conclusion are presented in section 5.

## 2. Review of the selected Literature

RNFS exhibits an extremely heterogeneous and complex system which consists of different activities. In economic literature, different sets of definitions have been proposed. RNFS encompasses all non-agricultural activities: mining and quarrying, household manufacturing, processing, repair,

construction, trade and commerce, transport and other services in villages and rural towns have undertaken by enterprises varying in size from household own account enterprises to factories (Lanjouw and Lanjouw, 1995; Jha, 2006, 2011.). All economic activities in which the rural workforce is employed, other than agriculture and allied activities included in RNFE activities (Unni, 1991; Ranjan, 2009; Abraham, 2011).

Economic literature points out that there are two major factors related to the growth of RNFS 'push factors' and 'pull factors'. Push factors are primarily declining level of agriculture productivity, high land man ratio etc. which push the workers to abandon the farm sector (Himanshu *et al*, 2016 and Jatav and Sen, 2013). On the other hand, pull factors attracts the workers towards RNFS like higher wages, better working conditions, availability of social security benefits etc. (Bhalla, 1993; Visaria and Basant 1994).

## 3. Data and Methodology

Unit level NSSO data for three quinquennial rounds i.e. 50th (1993-94), 61st (2004-05) and 68th (2011-12) on Employment and Unemployment for Himachal Pradesh (HP) was used for the analysis. The data was available on a CD in .txt format. Extraction of this data was done in STATA Software, individually for all three rounds. Further in this RNFS and RNFE are used interchangeably.

## 4. Nature and Trends in RNFE in Himachal Pradesh

Table 1: Gender Wise Distribution of Rural Workers (ps+ss) across Farm and Non-farm Sector in HP 1993-94 To 2011-12(%)

State	1993-94					
	Farm			Non-Farm		
	M	F	P	M	F	P
Himachal Pradesh	65.8	95.8	80.2	34.2	4.5	19.8
All India	73.9	86.2	78.3	26.1	13.8	21.7
2004-05						
Himachal Pradesh	49.4	91.1	69.6	50.6	9.0	30.4
All India	66.5	83.3	72.7	33.5	16.7	27.4
2011-12						
Himachal Pradesh	39.1	87.0	63.0	60.9	13.0	37.1
All India	58.8	74.7	63.6	41.3	25.3	36.4

Note: M, F and P are male, female and persons respectively

Source: Computed using NSS unit-level data on employment and unemployment, 50<sup>th</sup>, 61<sup>st</sup> and 68<sup>th</sup> Rounds

Table 1 shows the gender-wise distribution of rural workers into farm and Non-farm employment in HP from 1993-94 to 2011-12. The table highlights that following the national level trend of rural diversification the rural workers of Himachal Pradesh are moving away from the farm sector towards the non-farm sector. The share of rural non-farm employment in

HP has increased nearly twice from 20 percent in 1993-94 to 37 percent in 2011-12. Further 2004-05 onwards the share of RNFE has been higher in HP than the national level. Moreover, the diversification was more prominent among male workers than female workers which are evident from table 2. In 1993-94, 34 percent of rural male workers were engaged in RNFE



## **Impact Assessment of National Food Security Mission (NFSM) on Pulses Production in Karnataka, India - An Economic Analysis**

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### **Authors' contributions**

*This work was carried out in collaboration between both the authors. Author VRN designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author KRN managed the analyses of the study, literature searches and edited the manuscript. Both the authors read and approved the final manuscript.*

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### **ABSTRACT**

The present study was conducted to examine the economic impact of NFSM on pulses economy in the selected districts of Karnataka state. The study period was divided into Period-I (Pre NFSM) from 1998-99 to 2007-08, Period -II (Post NFSM) from 2008-09 to 2015-16 and Period-III (Overall period) from 1998-99 to 2015-16. Primary data for Pigeonpea and chickpea crops were collected from Kalaburagi and Vijayapur districts of Karnataka respectively. The results of the compound growth rate analysis showed that during Period-III both area and production of selected pulses exhibited significant positive growth. The sources of change in the variance of selected pulses production revealed that the change in residual and change in area variance contributed the major

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## IMPACT OF COVID-19 PANDEMIC ON COFFEE PRODUCTION AND EXPORTS IN INDIA

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Coffee is the second most important beverage crop of India next to the tea. There are about 2,50,000 coffee growers in the country; 98 percent of them are small farmers. Coffee is grown in three regions of India with Karnataka, Kerala and Tamil Nadu forming the traditional coffee-growing region, followed by the new areas developed in the non-traditional areas of Andhra Pradesh and Orissa in the eastern coast of the country and the third region being the states of Assam, Manipur, Meghalaya, Mizoram, Tripura, Nagaland and Arunachal Pradesh of North-eastern India (Hiralal *et al.*, 2019).

The two well-known species of coffee grown are the *Arabica* and *Robusta* and the country accounts for 3.14 percent of global coffee production. Indian coffee area and production over the years are increasing and it was estimated in 2018-19 that coffee bearing area, production, and productivity were 4,16,741 ha, 3,19,500 MT and 767 kg ha<sup>-1</sup>, respectively (Coffee Board of India, 2020).

India is the third-largest producer and exporter of coffee in Asia and the sixth-largest producer and fifth-largest exporter of coffee in the world. Of the total coffee produced in India, 70 percent is exported and 30 percent is

consumed domestically. Italy is the leading importer of coffee (21.60% in 2019-20). The other importers of coffee are Germany, Russia, Poland, Turkey, Slovenia, Jordan, Kuwait, Libya. India exported 350159.97 tonnes of coffee and earned about Rs. 5814.60 crores in 2019 (Table 1).

World Bank estimates about 25 million families produce and sell coffee for their livelihood and most of them are small-scale farmers with limited financial resources and scope to diversify out of coffee (Bryan *et al.*, 2004). The coffee industry depends on the labour of millions of transient workers who arrive on coffee farms all over the world during the harvest to pick coffee. Labour represents the largest cost of production for coffee farming.

In India, as coffee is a major export earner, the study was taken to assess the impact of the COVID-19 pandemic on coffee production concerning labour, since labour is major input required for all the operations right from planting to harvesting. Farmers cultivating coffee in India depend upon migrant labourers who are now facing the heat of reverse migration of workers. Out of an estimated five lakh migrant workers, at least half of them are being from North and

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## Economic Viability and Financial Feasibility of Grapes vis-à-vis Raisin in Northern Karnataka, India

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### ABSTRACT

The present study was undertaken in Vijayapura district of Northern Karnataka for the year 2018-19 with the objective of evaluating economically the value addition in grapes. The multistage sampling was adopted to select the district, talukas and villages. The study objectives were analyzed using budgeting technique and financial feasibility tools. The results of the study highlighted that, though the cultivation of grapes involved more investment but in turn it yields positive net returns to the cultivators. When farmers sold their produce by making fresh grapes in to raisins, they got additional returns of about ₹ 1,86,489.00. Based on the results of the study we can conclude that the investment on grape vineyards are financially feasible in the study area and project is strongly recommended to the farmers for continuation in future as well.

**Key words:** Grapes, Raisins, Multistage sampling, Net present value, Payback period

Horticultural crops being high value crops are important in raising the incomes of the farmers beside creating employment opportunities. India is bestowed with wide range of agro-climatic and bio-diversity which is ideal for growing a variety of agricultural crops, which includes large number of horticultural crops (Nethravathi 2012). Horticulture in India has gained its credibility for providing sustainable income, nutritional security and for providing employment opportunities, both in rural and urban areas. Grapes are the most widely cultivated fruit crop of the world in varying climatic zones extending from the temperate to the tropics in Himalayas and tarai region of Northern India. The grapes are consumed fresh or converted into raisin and wine.

The global grapes production was estimated to be 79.19 million metric ton in the year 2018, which was a 0.8 per cent increase in production compared to 2017. Although a 0.4 per cent decrease in the area was observed on a global level, the production continued to increase. The major grapes

producing countries include Italy, France, United States of America, Spain, and China. Italy is the largest grapes producing country in the world with an annual production of 8.2 million metric ton and accounting for 19 percent of global production. In terms of region, Europe is the largest grapes producing region in the world, accounting for more than 45 per cent of the world grapes production (Anonymous 2018).

In India, it is cultivated over an area of 140 thousand hectares with an annual production of 2914 thousand tones (Anonymous 2017). Grape cultivation in India has acquired greater significance due to its high productivity compared to many other grape producing countries in the world. Commercial viticulture in India is hardly a few decades old and major grape growing states are Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Punjab and Haryana. Among all the grape growing states, Maharashtra occupies the largest area (90,000 ha) followed by Karnataka (23,000 ha). As far as productivity is concerned Karnataka stands first followed by Maharashtra (Anonymous 2016). In Karnataka, grape is commercially cultivated in various parts of the state. During fifties, grape was introduced in North Karnataka, where conditions are quite different from that of South Karnataka. Thompson Seedless, Sharad, Tas-A-Ganesh, Sonaka and Arkavathi are the important seedless cultivars of

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## Is Small-Scale Mulberry Silk-Worm Rearing Profitable? The Experience of Cocoon Growers of Bilaspur, Himachal Pradesh

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### ABSTRACT

The sustainability of the Mulberry silk-worm rearing, an important sub-stage of sericulture, depends upon whether or not cocoon growers earn profit from this practice. The present study focuses on small-scale cocoon growers/mulberry silk-worm rearers to find out the extent of profit or losses of these growers. The answer to this question takes care of the issue of sustainability of small-scale silk-worm rearing practice. The study is based on primary data collected from 60 randomly selected households from Ghumarwin block of district Bilaspur of Himachal Pradesh (HP). Small-scale sample cocoon growers are incurring losses when imputed value of family labour is included in the total cost. Returns over total cost excluding family labour is positive which reveals that practice of small-scale mulberry silk-worm rearing is sustainable when the households are willing to put their own labour.

**Keywords:** Sericulture, Mulberry silk worm, Sustainability, Cocoon Grower, Small-scale, Family Labour

In the contemporary scenario of continuing decline in the contribution of agriculture and allied sector in total GDP and at the same time more than half of country's labour force engaged in agriculture and allied sector, agriculture based industries in India becomes that much significant. Agro-based industries promote development and reduce poverty (Wilkinson & Rocha, 2009) at the country level. Sericulture is one of the important agro-based activities in India which involves five sub-activities, namely, food-plant cultivation, developing silkworms, rearing of silkworms to produce cocoons, reeling of silk yarn from cocoon, and finally weaving of silk-products. As per International Sericulture Commission, global silk production in the year 2018 stood at 159,648 metric tonnes of which India produced 35,261 metric tonnes which comes to about 22 per cent. India is the second largest producer of raw silk and at the same time it is the World's largest consumer of pure silk. The uniqueness of India's silk industry lies in the fact that it is the only country which produces all the four varieties of silk, namely, Mulberry, Eri, Tasar, and Muga. However, mulberry silk holds the dominant position in India as it accounts for roughly 76 per cent of the country's total silk production. Further, sericulture industry in India provides employment to 7.6 million people which is roughly 1.5 per cent of

country's labour force and the sericulture activity spreads across 51,000 Indian villages. There are around 328,628 handlooms, 45867 power looms and 814616 weavers in India. Therefore, sericulture industry has the potential to absorb labour force of both rural and urban India and the same time can be a source of employment for the weavers who face serious threat due to mechanisation. Sericulture industry has a favorable impact on income and employment generation (Hanumappa & Erappa, 1985; Lakshmanan, 2012; Lakshmanan & Devi, 2007; Lakshmanan S. & Devi, 2007; Rani, 2007). Sericulture is considered as one the few activities which is a short gestation labour intensive enterprise which promotes inclusive growth and alleviates poverty particularly in rural areas (Chauhan, 2013). Among all the states in India that produces silk, Himachal Pradesh has great potential due to its varied climatic and topographical conditions. Sericulture is practiced in all the districts of Himachal Pradesh (HP) except Lahaul-Spiti and Kinnaur. The state offers favourable conditions for growth of mulberry trees and therefore silkworm rearing offers a suitable environment for mulberry silk production. Rearing of mulberry silk worm can be an important source of subsidiary income occupation to supplement the income of rural households. Realizing this, during 2007-12, then government of the state implemented Catalytic Development Programme (CDP) of Central Silk Board (CSB) in five districts- Kangra, Mandi, Bilaspur, Hamirpur, and

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*Amit Kumar Basantaray*

**Is the COVID-19 Crisis  
Being Handled Effectively  
in Odisha?  
Some Empirical Observations**

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Orissa Economics Ass



**Asutosh Pradhan  
Rashmita Ray  
Amit Kumar Basantaray  
Pradeep Kumar Sahoo**

**Abstract:**

The COVID-19 pandemic has created havoc globally affecting livelihoods like never before. In India and Odisha, more than 6 million and more than 2 lakh persons, respectively, have already been affected by the virus. Both at the central and state levels, lockdown of the entire country was imposed to contain the spread of virus, which in April and May, gave rise to the problem of reverse migration. This paper analyses the impact of migration on the spread of COVID-19 cases in the state. Other major factors that have been studied here are the lockdown and unlock period-wise spread of COVID-19 cases, district-wise spread of these cases and arrival of migrants, and factors responsible for the spread of COVID-19. Using secondary data provided in the state dashboard, the study found that the detection of positive cases increased with rise in per day testing; and for both are significantly high in the unlock period in comparison to lockdown period.

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*Asutosh Pradhan*

# Employment of Women in Rural Punjab

## Deconstructing Agricultural Growth Policy

ASHAPURNA BARUAH, INDEVIR SINGH

High economic growth has failed to improve the status or the participation of women in the labour market in developing countries. Taking into account the case of low labour force participation among women in rural Punjab, an analysis of existing policy prescriptions—of improving agricultural growth and crop diversification as a panacea to the problem—is revealed to be insufficient in improving the female labour force participation rate. In order for policy to successfully address these issues, it must consider the constraints imposed by gender norms.

Most mainstream economic theories consider the gross domestic product (GDP) and employment to be synonymous. The various economic models focus on GDP growth and assume that an increase in GDP automatically leads to full employment. However, these models are often built in the context of the developed Western countries that have different social and economic responses to economic growth. In a country like India, the policies pursued using these models may lead to undesirable results when it comes to employment generation, especially for women. Some macro-economic models do focus on the implications of market imperfections due to factors like search costs, but they also fail to take into account costs that arise due to gender-based norms (Diamond 1989). These costs may lead to long-term hidden unemployment or underemployment in the economy. This hidden unemployment or underemployment is not visible in data, and workers may be counted as voluntarily unemployed or a part of the workforce.

Economic growth in India has not been able to improve the status or the participation of women in the labour market (Fletcher et al 2017). The worsened employment conditions among women remain a characteristic feature of the process of rural transformation in the Indian economy, accentuating the labour market vulnerabilities among women. This is reflected in women's low employment participation, concentration in low productive sectors, low earnings, and irregularity of employment in rural areas (Chowdhury 2011; Kannan and Raveendran 2012; Mazumdar and Neetha 2011; Rangarajan et al 2011).

This trend is even visible in more developed states like Punjab. The expansionary phase of development and high-income growth of Punjab's economy has its source in capitalistic agriculture. Punjab provides the ideal case of an agrarian economy that has transitioned from a traditional to a modernised one, which is highly market-oriented and commercialised. Despite the high-income growth in Punjab, the female labour force participation rate (FLFPR) has been low in rural areas (Baruah 2016). Researchers have often recommended increasing the growth of the agricultural sector and crop diversification to improve the FLFPR in rural areas (Toor et al 2007). These suggestions are based on the premise that higher agricultural growth and diversification will inevitably take care of the employment problem for all sections, including women. Even those studies that recognise the importance of diversifying to the rural non-farm sector ignore the issues that pertain to female labour (Sidhu 2002). The evidence suggests that in

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# Income and Employment Changes Under COVID-19 Lockdown: A Study of Urban Punjab

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Indervir Singh<sup>1</sup>, Jagdeep Singh<sup>2</sup>  
and Ashapura Baruah<sup>3</sup>

## Abstract

This article traces income and employment changes through various phases of the lockdown based on primary data. It analyses the coping strategies of people in response to fall in their income. The article reveals that there was a large drop in income and employment with the announcement of lockdown. While there is some recovery with easing of the lockdown, the income at the time of survey is still substantially lower than its pre-lockdown level. Casual labour households with the largest fall in income and employment are the most affected. Income and employment losses are also higher among Scheduled Caste (SC) and Other Backward Caste (OBC) households. In the absence of any income, the households either had to live off their savings or had to borrow money for their basic needs. With rapidly depleting savings, borrowing approached its limits, and with slow recovery of income, households may need substantial government assistance to save them from deprivation.

## Keywords

COVID-19, lockdown, employment, income, survival strategies

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

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# Differential Impact of COVID-19 by Occupation: Survey Findings From Indian Punjab

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Keywords: differential impact, restricted occupations, lockdown, covid-19

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This paper analyzes the differential impact of COVID-19 by occupation in Mansa, Punjab, India. Propensity score matching is used to analyze the difference in income recovery rates of permissible and restricted occupations based on restrictions in the initial period of the lockdown. Analysis of income of 55 randomly selected households shows that the restricted occupations lagged in their recovery rate after six months of lockdown.

## I. Introduction

The outbreak of coronavirus disease in 2019 (COVID-19) has caused severe economic hardship across nations (Coibion et al., 2020; Fairlie et al., 2020; Gopinath, 2020). Strict lockdowns and the fear of COVID-19 caused intolerable suffering and privation to a large share of India's population (Centre for Equity Studies et al., 2020; Ray & Subramanian, 2020). Studies have found that more than 80 percent of households earned no income from their main occupation between March 24 and May 5, 2020 (Afridi et al., 2020a, 2020b; Bertrand et al., 2020).

Although income and employment started recovering with easing of the lockdown after May 4, 2020, households continued to earn considerably less until mid-June 2020 compared to their pre-lockdown income (Singh et al., 2020). This period of a large drop in income and employment coincides with a 23.9 percent fall in gross domestic product (GDP) in the first quarter of India's financial year (April to June 2020). India's GDP showed signs of recovery (even though the growth rate was still -7.5 percent) in the second quarter (Government of India, 2020). While the trend indicates recovery, the aggregated data hide the nuances of the recovery process. Fear of COVID-19 and the policy of lockdown have a disproportionate effect across industries and occupations (Fairlie et al., 2020; Montenegro et al., 2020).

The disproportionate effects of COVID-19 lockdown by occupation in India remain relatively unexplored in the literature. We find no study that explores differential income recovery after easing of lockdown restrictions. This paper addresses this gap by analyzing the impact of lockdown restrictions on household income during the first six months of the COVID-19 outbreak (from March 22 to September 30, 2020) in Mansa, Punjab, India. The effect on household income is traced by analyzing the impact of lockdown restrictions on the main occupation of the household (the major

source of income).

Occupations are divided into two categories based on whether they were permissible between March 22 and May 3, 2020. The first category includes occupations that were either allowed during this period or where work from home (WFH) was possible ('permissible' occupations). The second category was neither allowed nor was WFH possible ('restricted' occupations). These occupations involve production of non-essential commodities and comprise mainly low-skill work.

This study compares the decline and recovery of household income for both occupational categories during the phases of COVID-19 restrictions using the propensity score matching (PSM) technique. The results show that households whose main occupation was in the restricted category during the initial phase of lockdown had a lower income recovery rate.

This paper proceeds as follows. Section II discusses data collection and methodology. Section III provides the results of the analysis and discusses the main findings. Finally, Section IV sets forth the conclusions.

## II. Data and Methodology

This study is based on primary data. A survey of 55 households was conducted in the city of Mansa, Punjab, India. The data were collected using multi-stage random sampling. At the first stage, the city area was divided into two parts based on the railway line and the area to its north was chosen. At the second stage, this area was subdivided into 44 parts, of which 11 were randomly chosen. At the last stage, a total of 55 households – five from each of the selected parts – were randomly chosen for the survey. Among the surveyed households, 15 households had their main occupation under the permissible category. The remaining 40 households had their main occupation in the restricted cat-

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**THE 'LAW AND ECONOMICS' OF GOVERNMENTS' RESPONSE TO PANDEMICS***Indervir Singh<sup>1</sup> and V. Santhakumar<sup>2</sup>***I. INTRODUCTION**

Governments all over the world may use or institute laws and other measures (like the Epidemic Diseases Act, 1897 in India) during pandemics like the COVID-19. These may provide special powers to governments to restrict social and economic activities and the freedom of individuals with the purpose of containing the spread of epidemics. It may be interesting to use the framework of the 'law and economics' to analyse the need for such restrictions and the conditions with which these may lead to efficient outcomes. This article is an attempt in that direction. It also uses that framework to assess the response of the Government of India towards the COVID-19.

**2. MARKET FAILURES THAT NECESSITATE GOVERNMENT RESTRICTIONS DURING EPIDEMICS**

A starting point of the 'law and economics' is to analyse the sources of market failure that necessitate the legal or institutional interventions on the part of government on a specific issue. Pandemics may lead to the following market failures.

*2.1. Negative Externality*

The obvious source of market failure as part of epidemics is the negative externality. The infected individuals may cause infection in others without compensating the losses to the latter. There is a need for an entity representing all individuals to act to address this problem. The negative externality (infection in this case) is emerging from a large number of sources and can affect an equally large number of individuals, who in turn can become the sources of the externality. Hence the transaction costs (required for a possible negotiation between parties who create and are affected by the externality) are huge, which makes a legal/institutional intervention necessary<sup>3</sup>. It is also not a context where financial disincentives (like taxes) can be used to control the externality (and this is also due to the information

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## My colleague is corrupt: Information disclosure to control corruption

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**Abstract.** *The paper argues that the co-workers of a corrupt public official are in the best position to provide proof of corruption. It, with the help of a game-theoretic model, discusses the incentive structure that will allow a co-worker to disclose the information on a corrupt public servant. The study argues that incentives for the co-worker may work best if they are based on the cost of disclosing the information and are contingent upon successfully proving corruption.*

**Keywords:** corruption; co-worker; information disclosure.

**JEL Classification:** D73.

