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Unraveling the Unexpected Workforce: An Overview of India's Coffee Sector

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Abstract

Coffee is a highly labor-intensive crop. However severe shortage of labour is a prevalent problem in coffee production. Thereby the study intends to understand the workforce in the coffee production. The paper is based on the secondary data published by the Coffee Board of India. Descriptive statistical tools such as averages, percentages, CAGR were used for analysis. The workforce in the coffee sector has steadily increased over the years, the CAGR being 1.54 percent. The labour productivity was found to be only 0.14 percent. The study reveals that the higher number of workers was not essentially translated into higher productivity. This means that it is the lack of 'skilled' labour force existing in the coffee production. The study suggests mechanization of production operations and attracting youth into coffee sector could further boost the production.

***Key words*:** Coffee, Labour Productivity, Workforce, Wages

Coffee cultivation is indeed a highly labor-intensive process. According to Upendranath *et al*. [1] and Mohan Kumar *et al*. [2], it requires significantly more labour compared to other crops. Specifically, Basic [3] notes that coffee demands 4.90 times more labour than sugarcane and 3.25 times more than paddy. This intensive labour requirement is particularly challenging during the harvesting season, where a severe labour shortage is often observed [4]. Labor costs constitute a major portion of the cultivation expenses, accounting for approximately 65% of the total costs [5]. This significant percentage reflects the intensive labor requirements of coffee cultivation, which include a variety of tasks such as planting, weeding, pruning, pest and disease control, and, most notably, harvesting. Each of these tasks demands a considerable amount of manual labor, particularly during the peak seasons. These costs have been increasing by an average of 3% per annum in real terms [6]. Additionally, labour wages in the coffee sector have been rising at a compound annual growth rate (CAGR) of 9% per annum, as illustrated in (Fig 1). However, despite the rising costs, there has been a decline in the quality of work [7].

Recognizing the need to address labor issues in the coffee sector, the Coffee Board has implemented policies such as mechanization of farm operations and capacity-building programs aimed at enhancing coffee production and productivity. Despite these efforts, the critical question remains: "Is the coffee sector experiencing a 'real' shortage of labour?" This question warrants thorough analysis, as it is essential to determine if the reported labour shortages are genuine or if they stem from other underlying factors. Furthermore, it is important to examine whether the workforce in the coffee sector has effectively translated into increased productivity. This paper aims to contribute to a better understanding of the state of the workforce in the coffee sector, exploring both the perceived labour shortages and the actual impact of labour on coffee production and productivity.

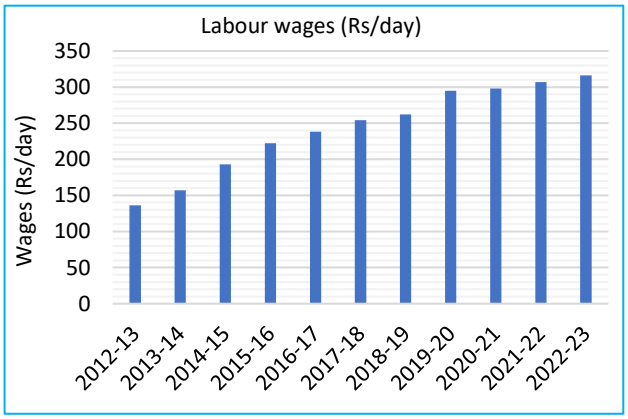

Fig 1 Labour wages over years (Rs/day)
Source: Indian Coffee Board [8]

MATERIALS AND METHODS

This study is based on secondary data published by the Coffee Board of India. To analyze the data and draw meaningful conclusions, simple statistical tools were employed,

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including averages, percentages, and the Compound Annual Growth Rate (CAGR). These tools were utilized to compare, contrast, and interpret the results, providing insights into the state of the workforce in the coffee sector.

RESULTS AND DISCUSSION

The study reveals that, the workforce in the coffee sector has increased substantially over the years. The compound annual growth rate (CAGR) of workforce employed in coffee sector in India is 1.54 per cent. The similar trend was observed in general agriculture as well [9]. The compound annual growth rate (CAGR) of workforce in traditional coffee growing states being 1.10, 0.12 and 0.80 percent in Karnataka, Kerala and Tamil Nadu respectively (Table 1). The Compound Annual Growth Rate (CAGR) of the workforce employed in the coffee sector in India is 1.54 percent, indicating a steady increase in the number of workers in this sector over time. This growth rate mirrors the general trend observed in the broader agricultural sector, suggesting a consistent pattern of workforce expansion across different types of farming activities. When examining the workforce growth in the traditional coffee-growing states, distinct variations emerge:

1. *Karnataka*: The CAGR of the workforce in Karnataka's coffee sector is 1.10 percent. As one of the leading coffee-producing states in India, Karnataka's modest growth rate reflects both the established nature of its coffee industry and the potential saturation of labor availability in this region.

2. *Kerala*: In Kerala, the CAGR is 0.12 percent, indicating a very slight increase in the workforce over time. This minimal growth could be attributed to several factors, including labor migration to other sectors, limited expansion of coffee plantations, or improvements in mechanization reducing the need for additional labor.

3. *Tamil Nadu*: The CAGR of the workforce in Tamil Nadu's coffee sector is 0.80 percent. While higher than Kerala's, it still represents a relatively slow growth rate, possibly due to similar factors affecting labor dynamics as seen in Kerala.

These figures suggest that while there is a general increase in the workforce across the coffee sector in India, the rate of growth varies significantly between states. This variation can be influenced by local economic conditions, availability of alternative employment opportunities, and regional policies affecting the agriculture sector. Understanding these dynamics is crucial for developing targeted strategies to address labor issues and improve productivity in the coffee industry.At the micro-level, the compound annual growth rate (CAGR) of labour force was found to be in Kodagu (0.67), Chickmagaluru (0.67), and Hassan (0.97) districts of Karnataka; Waynad (0.05), Travancore (0.29) and Nelliampathy (0.32) in Kerala; Pulneys (1.05), Niligiris (0.67), Salem (3.12) in Tamil Nadu (Table 2).

In addition to this, though the coffee roughly requires about 400 and 300 man days per ha per year for Arabica and Robusta respectively [7], this study estimates found that the average number of persons employed in coffee estates was much higher than the actual requirement viz. 1.47 man days per ha per day and 537 man days per ha per year (Table 2). In other words, the existing workforce is roughly about 1.60 times higher than the actual requirement. Now, is this higher workforce actually translated into productivity? This is another question we attempted to investigate.

Table 1 Trends in coffee plantations' workforce: Bird's eye view

Years	India		Karnataka		Kerala		Tamil Nadu	
	Workforce (No. of persons)	Growth rate (YoY)	Workforce (No. of persons)	Growth rate (YoY)	Workforce (No. of persons)	Growth rate (YoY)	Workforce (No. of persons)	Growth rate (YoY)
2001-02	496845	-	414099	-	43187	-	26694	-
2002-03	527540	6.18	423438	2.26	43415	0.53	26830	0.51
2003-04	527431	-0.02	423451	0.00	43415	0.00	26960	0.48
2004-05	542699	2.89	434704	2.66	43368	-0.11	26960	0.00
2005-06	578254	6.55	467227	7.48	43360	-0.02	26960	0.00
2006-07	579126	0.15	468084	0.18	43360	0.00	27430	1.74
2007-08	587294	1.41	475688	1.62	43469	0.25	27430	0.00
2008-09	594185	1.17	478459	0.58	43460	-0.02	27430	0.00
2009-10	594708	0.09	479453	0.21	43535	0.17	27430	0.00
2010-11	599351	0.78	480513	0.22	43637	0.23	27430	0.00
2011-12	606702	1.23	485070	0.95	43668	0.07	27735	1.11
2012-13	610297	0.59	486786	0.35	43899	0.53	25943	-6.46
2013-14	613161	0.47	486786	0.00	43899	0.00	25943	0.00
2014-15	616725	0.58	487024	0.05	43946	0.11	26053	0.42
2015-16	632993	2.64	498164	2.29	43986	0.09	28932	11.05
2016-17	653647	3.26	514694	3.32	44186	0.45	29339	1.41
2017-18	659802	0.94	514694	0.00	44194	0.02	31274	6.60
2018-19	664505	0.71	515792	0.21	44194	0.00	31235	-0.12
2019-20	665769	0.19	516777	0.19	44194	0.00	31260	0.08
2020-21	669998	0.64	517385	0.12	44194	0.00	31260	0.00
2021-22	675871	0.88	517709	0.06	44194	0.00	31260	0.00
2022-23	683018	1.06	519001	0.25	44242	0.11	31283	0.07
CAGR (%) (2001-02 to 2022-23)		1.54	-	1.10	-	0.12	-	0.80

Source: Coffee Board of India [8]

Table 2 CAGR on the number of persons employed in the traditional coffee growing states in India

Year	Karnataka			Kerala			Tamil Nadu		
	Chickmagaluru	Kodagu	Hassan	Waynad	Travancore	Neliampathy	Pulneys	Nilgiris	Salem
2002-03	2.41	2.72	0.97	0.46	0.74	0.52	0.46	0.73	0.55
2003-04	0.00	0.01	0.00	0.00	0.00	0.00	0.72	-0.30	0.14
2004-05	0.00	5.66	0.59	0.00	-0.47	0.00	0.00	0.00	0.00
2005-06	0.70	14.74	0.00	0.00	-0.08	0.00	0.00	0.00	0.00
2006-07	0.02	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007-08	0.00	2.07	0.51	0.00	1.15	0.00	0.00	0.00	0.00
2008-09	1.02	0.00	1.60	0.00	0.00	0.00	0.00	0.00	13.54
2009-10	0.08	0.25	0.29	0.00	0.78	0.00	0.00	0.00	0.00
2010-11	0.00	0.00	1.17	0.00	1.06	0.00	0.00	0.00	0.00
2011-12	0.23	1.16	1.41	-0.12	0.62	0.00	3.93	0.00	-10.53
2012-13	0.02	0.10	1.53	0.09	0.50	6.12	-23.96	0.00	77.57
2013-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014-15	0.02	0.02	0.16	0.12	0.00	0.26	0.37	0.00	0.97
2015-16	1.67	1.54	5.20	-0.02	0.54	-0.26	12.55	-23.47	13.29
2016-17	7.80	0.53	4.51	0.40	0.76	0.00	0.00	43.53	4.37
2017-18	0.00	0.00	0.00	0.00	0.08	0.00	27.97	0.00	-34.77
2018-19	0.17	0.19	0.33	0.00	0.00	0.00	0.00	1.08	0.00
2019-20	0.00	0.25	0.31	0.00	0.00	0.00	0.00	0.71	0.00
2020-21	0.00	0.03	0.51	0.00	0.00	0.00	0.00	0.00	0.00
2021-22	0.00	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00
2022-23	0.00	0.00	1.23	0.05	0.33	0.00	0.00	0.00	0.47
CAGR (%)	0.67	0.67	0.97	0.05	0.29	0.32	1.05	0.67	3.12

Source: Coffee Board of India [8]

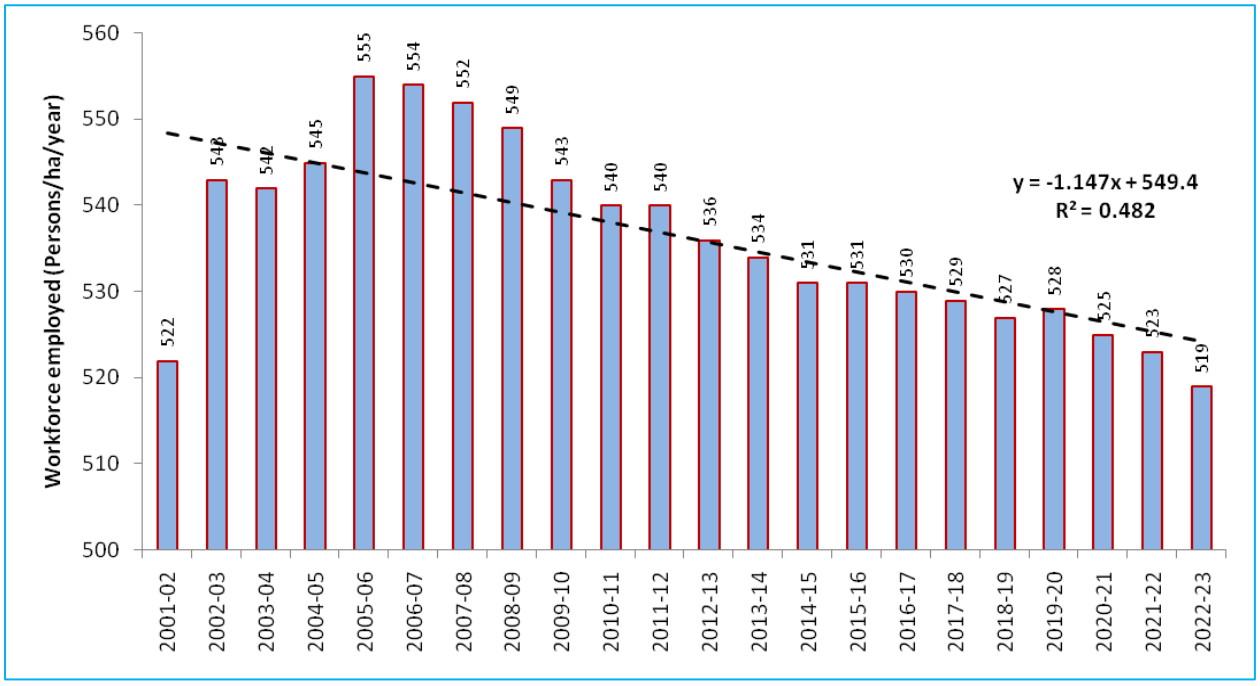

Fig 1 Number of persons employed in coffee estates

Source: Coffee Board of India [8]

The (Fig 1) represents the number of persons per hectare per year employed in coffee estates in India during 2001-02 to 2022 to 23. This graph reveals that negative trends during the study period. It means number of workers depending on coffee sector is being decreased over the years. This is primarily due to the seasonality in coffee sector, non-agricultural industries provide excellent wages compared to the coffee sector, [10]. People have started moving from rural to urban areas for a sustainable balance of life and education [11]. People may think working in coffee sector is also associated with low self-esteem. Especially after the implementation of MNREGA (Mahatma Gandhi National Rural Employment Guarantee Act, 2005), people start leaving agricultural employment for social welfare programs because of their higher wages and improved working conditions. Finally, some of the central and state government schemes are directly responsible for the agriculture sector's labour shortage [12].

The (Fig 2) represents the labour productivity in the coffee sector in India during 2001-02 to 2022 to 23. Over the years labour productivity was decreasing from 0.19 to 0.12 which indicates that every labour coffee production efficiency decreased from 190 kg to 120 kg during the study period 2002-03 to 2022-23. Further, analysis indicates that India's average coffee labour productivity was estimated 0.14 per cent at macro level. However, labour productivity was much higher in leading coffee producing countries like Costa Rica and Vietnam 0.59

and 0.80 per cent respectively [6]. This meant that though India uses a relatively higher number of labourers for production operations, the entire workforce was not efficiently translated into productivity. Such differences might also occur due to the unskilled workforce, the increasing intensity of mechanization, undulating landscapes, ageing labourers, improved production technologies and varieties, sloping and tree density in Indian coffee estates [13].

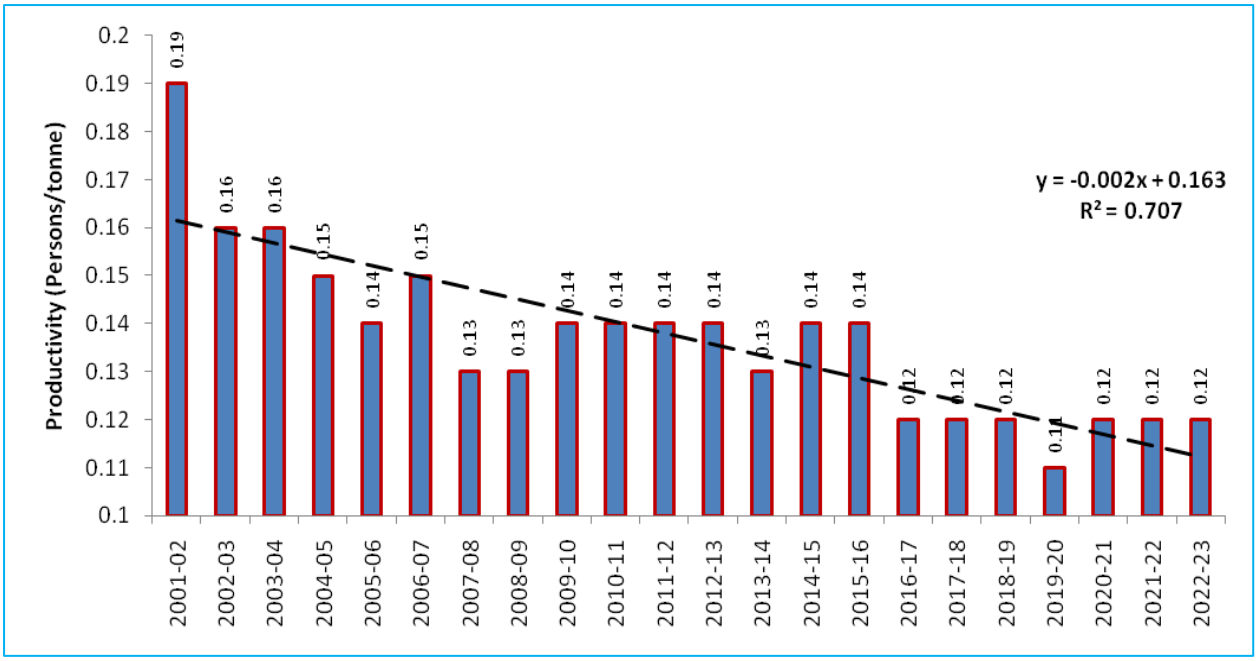

Fig 2 Labour productivity in the coffee sector

CONCLUSION

The study conclude that the labour force is steadily increasing over the years with the subsequent increase in the labour wages that adds up to higher cost of production. However, the workforce employed in the coffee sector is 1.60 times higher than the actual workforce requirement. While, the labour productivity observed was merely 0.14. It indicates that the labour is not being efficiently translated into production.The study concludes that it is not just the labourer but a set of skilled labourers required in coffee sector. Since coffee production is a labour-intensive process, the institutions should provide necessary training to the coffee growers and workers for improving quality of labour as well as in enhancing productivity viz., innovative practices for labour procurement and improving labour productivity. Further mechanization and attracting educated youths towards coffee sector is need of the hour as it requires not just the labour force, but the 'skilled' labour force.

LITERATURE CITED

1. Upendranath C, Subbaiah CA. 2012. Small growers and coffee marketing-issues and perspective from the field. *NRPPD Discussion Paper No. 15*. Centre for Development Studies, Thiruvananthapuram.
2. Mohan Kumar, Sathish Gowda, Munirajappa R, Surendra HS. 2012. Nonlinear statistical growth models for describing trends in area under coffee production in India, *Mysore Journal of Agricultural Sciences* 46(4): 745-750.
3. Basic. 2018. Coffee: The hidden crisis behind the success. Study on sustainability within the coffee industry research report.
4. Upendranath C, Subbaiah CA. 2013. Labour shortage in coffee plantation areas- Coping strategies of small growers in Kodagu. *NRPPD Discussion Paper 30*. Centre for Development Studies, Thiruvananthapuram.
5. Roy A, Sarkar S, Bera B. 2022. Estimation of cost of cultivation, profitability in different farm sizes as well as growth and instability of mustard in West-Bengal. *Jr. Crop and Weed* 18(3): 273-277.
6. Caro PL. 2020. Wages and working conditions in the coffee sector: the case of Costa Rica, Ethiopia, India, Indonesia and Vietnam. International Labour Organization.
7. Saxena PK, Kumar A. 2018. Changing skill scenario in India: Emerging policy concerns. *Manpower Journal* 52(1/2): 119-140.
8. Coffee Board of India. 2023. Database on coffee. July 2023. www.indiacoffee.org.
9. Roser Max. 2023. Employment in agriculture. Published online at Our World in Data.org. Retrieved from: 'https://ourworldindata.org/employment-in-agriculture' [Online Resource].
10. Prabakar C, Sita Devi K, Selvam S. 2011. Labour scarcity - its immensity and impact on agriculture. *Agricultural Economics Research Review* 24(1): 373-380.
11. Hazarika C. 2015. Labour scarcity in agriculture and farm mechanization. *Indian Journal of Agricultural Economics* 70(1): 109-111.
12. Vaishnavi P, Manisankar G. 2022. Labour scarcity in agriculture: A review. *The Pharma Innovation Journal* 11(4): 2087-2090.
13. Yadava CG, Arun M, Santhosha KM, Manohar BH, Chandrarekha C, Gagana MD. 2022. Value chain upgrading strategies for sustainable coffee industry: A visionary SWOT approach. *Asian Journal of Agricultural Extension, Economics and Sociology* 40(12): 232-244.