



Original Article

Explore the Economic Significance of the Dhakki Date Industry in the Local Region, Including its Contribution to Employment, Income Generation, and Overall Economic Development

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ABSTRACT

Background: The cultivation of Dhakki dates has enormous economic significance in the surrounding area, contributing significantly to employment, income generation, and overall economic development. **Objectives:** This study investigated the economic significance of the Dhakki date industry in the local region, with a focus on its contribution to employment, income generation, and overall economic development. **Methods:** Through a comprehensive research approach, utilizing both primary and secondary data sources, significant numerical values were obtained. **Results:** The findings revealed that date farming had created 2520 jobs for date farmers, 30240 jobs for laborers, 35 jobs for merchants and wholesalers, and 78 jobs for exporters. In terms of income generation, small-scale farmers earned an average annual income ranging from 25,00,000 to 35,00,000 PKR, while large-scale farmers generated an average annual income ranging from 70,00,000 to 80,00,000 PKR. These figures highlighted the substantial contributions of the Dhakki date industry to employment and income generation in the past. Moreover, the study emphasized the importance of cultivation practices and processing techniques in maximizing productivity and enhancing marketability. **Conclusion:** The findings of this research provided valuable insights for policymakers and stakeholders, facilitating informed decision-making and supporting the past growth and development of the Dhakki date industry.

INTRODUCTION

Dhakki date farming holds immense economic significance in the local region, making substantial contributions to employment, income generation, and overall economic development¹. Nestled in the heart of a region renowned for its date production, the practice of date farming has become a vital economic sector, harnessing the abundant natural resources and entrepreneurial spirit of the local population²⁻³.

Dating back centuries, date farming has played a pivotal role in the local economy. The practice encompasses a range of activities, including date cultivation, harvesting, processing, packaging, and distribution. These interconnected tasks create a ripple effect that stimulates employment opportunities throughout the year and fuels the region's economic prosperity⁴.

Foremost among the economic benefits of date farming is its substantial contribution to employment. The industry serves as a key source of job opportunities, both directly and indirectly, for a significant portion of the local population⁵. During the cultivation phase, farmers and agricultural laborers engage in the labor-intensive process of tending to date palms, ensuring their optimal growth and maximizing yield. Additionally, during the harvesting season, numerous workers are employed to pick, sort, and package the dates. The consistent demand for labor provides employment opportunities for both skilled and unskilled workers, addressing unemployment rates and enhancing livelihoods in the region^{2,6}.

Income generation stands as another pivotal aspect of the economic significance of date farming. The industry supports a network of small-scale farmers who rely on date cultivation as their primary income source⁷. By cultivating date palms and selling their produce, these farmers generate revenue, allowing them to meet their daily needs and invest in their households. Furthermore, date farming fosters income generation beyond the agricultural sector. Small-scale processors, traders, and vendors involved in processing and distributing dates also benefit financially, contributing to the overall growth of the local economy⁸.

Beyond employment and income generation, date farming plays a central role in the economic development of the region. It attracts investment, fosters entrepreneurship, and stimulates ancillary businesses. As the industry flourishes, there is a heightened demand for infrastructure, such as processing facilities, storage warehouses, and

transportation networks. Consequently, this creates opportunities for construction activities and stimulates the local construction industry, further enhancing the region's economic landscape⁹⁻¹⁰.

Conclusively, date farming stands as a pivotal economic driver in the local region, offering employment opportunities, generating income, and fostering overall economic development. Its impact extends well beyond the agricultural sector, influencing various industries and contributing to the socio-economic well-being of the region's population¹¹. Therefore, this study was conducted to guide the exploration into the economic significance of date farming in the local region of Dhakki, Dera Ismail Khan, providing valuable insights into its contribution to employment, income generation, and overall economic development.

MATERIAL AND METHODS

The economic significance of date farming in the local region Dhakki, Dera Ismail Khan (Figure 1 and 2), was investigated through a comprehensive research approach, utilizing both primary and secondary data sources.

Research Design

A descriptive research design was adopted to examine the various economic aspects of date farming in the local region. By employing a mixed-methods approach, combining qualitative and quantitative data, a holistic understanding of the topic was achieved. Field visits, surveys, interviews, and data analysis served as the primary means of data collection.

Data Collection

Primary Data

Field visits were conducted to date farms, processing units, and other relevant sites to gather first-hand information on cultivation practices, processing techniques, and infrastructure. These visits provided valuable insights into the day-to-day operations of date farming and the overall production process.

Surveys were administered to date farmers, processors, traders, and vendors to collect data on employment, income, investment, and other economic indicators. The surveys were designed to capture quantitative information, allowing for statistical analysis and comparison of different variables.

In-depth interviews were conducted with key stakeholders involved in the date farming industry. These interviews provided a

deeper understanding of the economic dynamics, challenges, and opportunities associated with date farming. The qualitative data obtained through interviews added richness and context to the quantitative findings.

Secondary Data

Secondary data sources, including government reports, industry publications, and academic studies, were extensively reviewed. These sources provided valuable background information, historical data, and broader economic trends related to date farming in the local region.

Data Analysis

The collected data, both quantitative and qualitative, were analyzed using

appropriate statistical methods and thematic analysis. Quantitative data from surveys were analyzed using descriptive statistics, such as means, percentages, and correlations, to identify patterns and trends. Qualitative data from interviews and field visits were transcribed and subjected to thematic analysis to identify recurring themes, viewpoints, and insights.

By employing these materials and methods, a comprehensive understanding of the economic significance of date farming in the local region was achieved. The findings contributed to the existing knowledge about the industry's contributions to employment, income generation, and overall economic development in the area.

Figure 1: Dhakki Date farms, Dhakki Dera Ismail Khan



Figure 2: Dried dates of Dhakki Dera Ismail Khan



RESULTS

The table illustrates the employment generation in date farming in Dhakki, showcasing different categories of employment and the corresponding number of jobs created. The most significant category is that of date farmers, who have generated a total of 2520 jobs ($p < 0.05$). The significance level of $p < 0.05$ suggests that the number of jobs created by date farmers is unlikely to be attributed to chance and is likely a result of their efforts in date farming. In addition to date farmers, other employment categories include laborers, merchants and wholesalers, and exporters. Laborers have contributed significantly to employment generation, with a total of 30240 jobs created. The categories of merchants and wholesalers, as well as exporters, have comparatively lower job creation numbers. Merchants and wholesalers have created 35 jobs, while exporters have generated 78 jobs. Data indicates that date farming in Dhakki has led to substantial employment opportunities, primarily attributed to date farmers. While laborers, merchants, and exporters have also contributed to job creation, additional information is needed to ascertain the statistical significance of their respective employment figures (Table 1).

The primary income source, small-scale farmers, generates an average annual income range of 25,00,000-35,00,000 PKR. This income source accounts for 8.16% of the overall income generated from date farming. This implies that the average annual income earned by small-scale farmers is significantly different from what would be expected by chance alone. Large-scale farmers, another significant income source, yield an average

annual income range of 70,00,000-80,00,000 PKR. This income category contributes 22.87% to the total income generated from date farming. Processors and traders, as an income source, generate an average annual income range of 10,00,000-20,00,000 PKR, constituting 3.26% of the total income. Exporters, on the other hand, have the highest average annual income range, ranging from 2,00,00,000 to 5,00,00,000 PKR. They contribute significantly to the overall income, accounting for 65.35%. Laborers have the lowest average annual income range of 80,000-130,000 PKR, representing a mere 0.26% of the total income. Data indicates that income generation from date farming in Dhakki involves multiple sources. Small-scale farmers and large-scale farmers play substantial roles in generating income, with small-scale farmers showing statistical significance in their earnings. Additional information is required to assess the statistical significance of income sources such as processors and traders, exporters, and laborers (Table 2).

The cultivation practices for date farming involved several essential steps. Farmers carefully selected high-yielding and disease-resistant date varieties for cultivation. Date palms were planted in rows, ensuring proper spacing and alignment. Regular irrigation was provided to maintain soil moisture and support optimal growth. Suitable fertilizers and organic matter were applied to nourish the date palms and improve yield. Pruning was carried out to remove dead fronds and promote tree health and fruit production. Integrated pest management strategies, including organic and chemical treatments, were employed to control pests and diseases.

Dates were harvested at their optimum ripeness using specialized tools and techniques. These practices collectively contributed to successful date cultivation, maximizing productivity and quality (Table 3). The processing techniques for dates involved several key steps. First, dates were cleaned to remove dirt and impurities, and then they were sorted based on size, color, and quality. Subsequently, the dates were thoroughly washed to ensure cleanliness and eliminate any surface contaminants. Some dates underwent a dehydration process, either through sun-drying or using specialized drying equipment, to extend their shelf life. Afterward, the dates were packaged in various forms, such as loose, boxed, or individually wrapped, depending on market demands. Rigorous quality control

measures were implemented to ensure that only high-quality dates met the standards for packaging and distribution. The dates were then stored in suitable conditions, including controlled temperature and humidity, to maintain their freshness and quality. Additionally, some dates were processed into value-added products like date syrup, date paste, or date-based confectioneries. These processing techniques were employed to enhance the marketability and versatility of the dates (Table 4).

The distribution of fresh and dried dates was comparatively studied. Fresh dates account for 10% of the total distribution. On the other hand, dried dates (Chuwara) make up the majority, representing 90% of the total distribution ($p < 0.05$) (Table 5).

Table 1: Employment generation in date farming in Dhakki

S. No	Employment category	No. of Jobs created	p-value
1	Date farmers	2520	0.00001* (Significant at $p < 0.05$)
2	Laborers	30240	
3	Merchants and whole-sellers	35	
4	Exporters	78	

Table 2: Income generation from date farming in Dhakki

S. No	Income source	Average annual income (PKR)	Percentage share (%)	p-value
1	Small scale farmers	25,00,000-35,00,000	8.16	0.00001* (Significant at $p < 0.05$)
2	Large scale farmers	70,00,000-80,00,000	22.87	
3	Processors and traders	10,00,000-20,00,000	3.26	
4	Exporters	2,00,00,000-5,00,00,000	65.35	
5	Laborers	80,000-130,000	0.26	

Table 3: Cultivation Practices in Date Farming

Cultivation Practice	Description
Selection of Date Varieties	Farmers carefully choose high-yielding and disease-resistant date varieties for cultivation.
Planting	Date palms are planted in rows, maintaining appropriate spacing and ensuring proper alignment.
Irrigation	Regular irrigation is provided to date palms to maintain soil moisture and promote optimal growth.
Fertilization	Suitable fertilizers and organic matter are applied to nourish the date palms and improve yield.
Pruning	Pruning involves the removal of dead fronds and excess growth to enhance tree health and fruit production.
Pest and Disease Control	Integrated pest management strategies are employed, including the use of organic and chemical treatments, to protect date palms from pests and diseases.
Harvesting	Dates are harvested when they reach their optimum ripeness, using specialized tools and techniques.

Table 4: Processing Techniques in Date Farming

Processing Technique	Description
Cleaning and Sorting	Dates are cleaned to remove dirt and impurities, followed by sorting based on size, color, and quality.
Washing	Dates are washed thoroughly to ensure cleanliness and remove any surface contaminants.
Dehydration	Some dates are dehydrated through sun-drying or using specialized drying equipment to extend their shelf life.
Packaging	Dates are packaged in various forms, such as loose, boxed, or individually wrapped, depending on market demands.
Quality Control	Rigorous quality control measures are implemented to ensure that only high-quality dates meet the standards for packaging and distribution.
Storage	Dates are stored in suitable conditions, including controlled temperature and humidity, to maintain their freshness and quality.
Value-Added Products	Some dates are processed into value-added products like date syrup, date paste, or date-based confectioneries.

Table 5: Distribution of fresh and dried dates

S. No	Category	Percentage (%)	Chi-square value	p-value
1	Fresh dates	10	44.2267	0.00001* (Significant at p<0.05)
2	Dried dates (Chuwara)	90		

DISCUSSION

The study investigated the economic significance of the Dhakki date industry in the local region, focusing on its contribution to employment, income generation, and overall economic development. Through a comprehensive research approach utilizing both primary and secondary data sources, a descriptive research design was adopted to examine various economic aspects. The findings provide valuable insights into the industry's impact.

Regarding employment generation, the table shows that date farmers have created a significant number of jobs, with 2520 positions, indicating the importance of date farming as a source of employment. Laborers have also contributed significantly, generating 30240 jobs. However, the employment figures for merchants, wholesalers, and exporters require further investigation to determine their statistical significance.

In terms of income generation, small-scale farmers and large-scale farmers emerge as significant income sources, contributing 8.16% and 22.87% to the total income, respectively. The income earned by small-scale farmers is statistically significant, while the income sources of processors and traders, exporters, and laborers need additional analysis to assess their statistical significance.

The cultivation practices for date farming encompassed various steps, including the selection of high-yielding and disease-resistant varieties, proper planting and

irrigation techniques, appropriate fertilization, pruning for tree health, pest and disease control measures, and optimized harvesting methods. These practices collectively contribute to successful date cultivation, maximizing productivity and quality ¹.

The processing techniques involved cleaning and sorting dates, washing them thoroughly, dehydrating certain dates for extended shelf life, packaging them according to market demands, implementing quality control measures, storing them under suitable conditions, and creating value-added products. These processing techniques enhance the marketability and versatility of dates ¹².

The distribution analysis reveals that dried dates (Chuwara) constitute the majority, representing 90% of the total distribution, while fresh dates make up the remaining 10%. This difference in distribution is statistically significant ¹³.

The study highlights the economic significance of the Dhakki date industry in terms of employment generation, income generation, and overall economic development in the local region. The findings provide valuable insights into the industry's contributions and can inform policymakers, stakeholders, and practitioners in making informed decisions for further development and growth of the date farming sector ¹⁴.

CONCLUSION

The study highlights the economic significance of the Dhakki date industry in the local region, showcasing its substantial

contributions to employment, income generation, and overall economic development. The findings demonstrate that date farming creates numerous job opportunities, primarily through the efforts of date farmers and laborers. Income generation from date farming involves diverse sources, with small-scale and large-scale farmers playing significant roles. The cultivation practices and processing techniques employed in the industry contribute to the productivity and marketability of dates. The study provides valuable insights that can inform decision-making and support the further development and expansion of the Dhakki date industry, fostering sustainable economic growth in the local region.

CONFLICT OF INTEREST

None.

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