

## **ROLE OF DATE PALM IN LIVELIHOODS OF FARMERS OF MARGINAL AREAS: A CASE STUDY OF SOUTH PUNJAB, PAKISTAN**

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### **ABSTRACT**

A study was conducted to explore the role of date palm in improving livelihoods of farmers in Dera Ghazi Khan district of South Punjab at the Institute of Agricultural Extension and Rural Development, University of Agriculture, Faisalabad, Pakistan during the year 2010-11. For this purpose structured interview schedule was prepared to collect quantitative data from randomly selected respondents whereas qualitative data was collected through key informant interviews. The results indicate that most of the trees in study area were in scattered pattern. Moreover, no or little attention was paid by the farmers regarding production technology and marketing potential of date palm. The data showed that date palm was the third major source of income for 62.5 percent of respondents. About 76, 72.5 and 67.5 percent of the respondents prepared bed frames, mates and manual fans, from date palm, respectively for household purpose while 45, 33.3 and 33.3 percent of respondents prepared these items for commercial purpose. The usage of a wide range of both commercial and household date palm products in the study area was found which indicates the considerable role of date palm in sustainable livelihoods of farmers.

**KEYWORDS:** Date palm; farmers; natural capital; poverty; sustainable livelihoods; South Punjab; Pakistan.

### **INTRODUCTION**

Natural resources provide a substantial income for many rural household without which the ability of many households to satisfy their basic necessities of life would be threaten (22). Close links exist between natural resources and livelihoods of rural communities (15). In both national and international policies, role of native domesticated fruit trees in livelihoods of farmers is often neglected.

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Date palm (*Phoenix dactylifera* L.) is one of the most important fruit trees in arid and semi-arid regions (22). It is considered as an important natural source of capital for rural livelihoods. Poor people generally depend upon a single staple food crop which often lacks some essential amino acids, vitamins and minerals (17). The date palm fruits provide unique functional and nutritional values (18). This fruit contains high percentage of carbohydrate, dietary fibre, antioxidants, minerals, contain all essential amino acids and variety of B-complex vitamins and vitamin A (2, 4, 18).

Date palm is of great socio-economic concern as it also provides a wide range of products and services to local people (9, 24). In remote areas, by-products of date palm are used extensively for both household and commercial purposes which provide substantial returns to rural people (21). Modern technological improvements increase the possibility of industrial usages of date palm such as paper making the insulating material and particle board (1, 7, 19). Further this tree has a great cultural and traditional importance in many date producing countries and with the increase of population in these countries, the demand of dates is expected to increase in future (14).

Pakistan holds significant position in date production (5). During the year 2007-08, Pakistan exported 88,451 tons of dried dates and 4,687 tons of fresh dates and earned \$36.033 million (6). Pakistan, on an average, exports 10 percent of total dates production and 90 percent is either consumed locally or wasted (5).

Ata *et al.* (11) reported that unawareness about date palm production technology is the main factor in reducing yield and ultimately profit for date growers. The majority of date palm trees found in rural areas of South Punjab are in scattered pattern and most of them are propagated through seed having great genetic diversity. The status of living standards, poverty, and social indicators are worst in South Punjab as compared to other regions of Punjab (9).

A research gap exists regarding the role of date palm in sustainable livelihoods of farmers living in marginal areas of developing country. The present study was conducted to generate information role of date palm in improving livelihoods of farmers in South Punjab, Pakistan.

## METHODOLOGY

This study was conducted at Institute of Agricultural Extension and Rural Development, University of Agriculture, Faisalabad, Pakistan during the year

2010-11. Dera Ghazi Khan (district of South Punjab) was selected purposively because it is one of the leading districts within Punjab in terms of date production. It is relatively ignored, underdeveloped and poor part of Punjab province (3, 15, 19). This district is situated in southwestern part of Pakistan with an area of 119224 square kilometers. Climatically, this area is arid with very hot summers and mild to cold winter. The temperature ranges between 13° to 50° C and average rainfall is less than 125 mm (8). The hill torrents of Suleiman Mountain Range and Indus flood affect Dera Ghazi Khan (D.G. Khan) almost every year resulting in heavy damage to livelihoods assets of local people.

The district D.G. Khan comprises three tehsils. However, D.G. Khan tehsil was selected which is the largest tehsil with maximum number of date palm trees (5). Out of 34 rural union councils of this tehsil, four union councils were selected randomly and from each selected union council, three villages were selected at random. A list of growers was prepared in each selected village with the participation of local residents. Ten respondents from each village were selected through simple random sampling technique, making a sample size of 120 respondents. The growers having at least 20 date trees in their fields were considered as respondents. Structured interview schedule was prepared to collect quantitative data. Key informant interviews were also conducted to acquire qualitative data. The key informants included in the study were Agriculture Officers and progressive farmers. Frequencies and percentages were calculated from quantitative data while qualitative data were analyzed using content analysis technique and direct quotes are also given in the results.

## **RESULTS AND DISCUSSION**

Socio-economic characteristics such as literacy, land holding, income etc. are important determinant of livelihoods. The respondents were asked about their education level. The results depicted that majority of the respondents (59.2%) were illiterate while, 17.5 percent of respondents had literacy level upto primary and only 12.5% of respondents had literacy level of Matriculate and above. Many research studies revealed that education plays a significant role in the adoption process of recommended agricultural practices. Furthermore the education of people is a major factor for the promotion of national food security (25).

The results of this study (Table 1) revealed that an overwhelming majority of respondents had 15 or less than 15 acres of land and very few respondents were large farmers. These results are in accordance to the results of Badar *et al.* (12) who stated that majority of farmers in Punjab have small land holdings.

**Table 1. Distribution of respondents according to their total area of land.**

Total area (acres)	Frequency	Percent
Up to 5	69	57.5
6-15	39	32.5
16-25	9	7.5
>25	3	2.5
Total	120	100.0

The data (Table 2) showed that large majority of respondents (40.0+30.8 = 70.8%) were poor and had net income of Rs. 1,00,000, 150,000 or less per year while few respondents had reasonable annual income (Rs. 150, 001 and above). The net income affects access to improved agricultural practices among the farming community.

**Table 2. Distribution of the respondents according to their annual net income.**

Annual income	Frequency	Percent
Up to 100,000 Rs.	37	30.8
100,001-150,000 Rs.	48	40.0
150,001 Rs. and above	35	29.2
Total	120	100.0

Pattern of date palm cultivation was categorized as orchard, scattered trees and intercropping.

The data (Table 3) revealed that an overwhelming majority of respondents (97.5%) had scattered date palm trees while only 2.5 percent had well developed orchards. No intercropping system was found. The data show less trend of establishing date orchards in the study area. A farmer said,

“There is no place in my knowledge from where I can get good quality varieties”.

**Table 3. Distribution of the respondents according to their pattern of date palm cultivation.**

Pattern of cultivation	Frequency	Percentage
Orchard	3	2.5
Scattered trees	117	97.5
Intercropping	0	0
Total	120	100.0

The above remark indicates the reason of less trend of establishing date orchards in the area in non-availability of promising varieties. The qualitative data revealed that date palm propagated in the area mostly due to dispersion of seed through man, birds, winds etc.

The data (Table 4) showed that an overwhelming majority of the respondents (96.7%) was unaware about the exact name of date varieties grown in their fields and only few, having improved varieties and well developed orchards. Almost all date palm trees in Dera Ghazi Khan are propagated through seed and no scientific or local nomenclature system prevailed in the area. Local people often named the dates according to their colour. The adoption of productive and resistant date varieties is a key factor for improved production (26). A farmer during interview said,

“The date palm trees in my field are propagated through seed or planted by our forefathers. Although there is a variation in the quantity and quality of fruits but neither I nor any other fellow farmers know the exact name of these varieties”.

**Table 4. Distribution of the respondents according to the varieties grown.**

Varieties	Frequency	Percentage
Hillawi	3	2.5
Dhakki	3	2.5
Khudrawi	2	1.7
Shamran	4	3.3
Aseel	1	0.8
Don't know	116	96.7

### **Role of date palm in livelihoods of farmers**

Livelihood diversification plays an important role in improving food security and income of people in rural areas (13). The data collected for primary, secondary and tertiary income generating activities by the respondents' households are presented in Fig. 1. The results revealed that primary source of income for majority of the respondents' household was crop sale followed by remittances received from outside country and livestock rearing. A trend of going abroad (Saudi Arabia and Dubai) as a labour was found in the study area.

The data (Fig.1) further showed that livestock rearing was the secondary source of income for more than half of households followed by crop sale, date palm and agricultural labour. The date palm was the tertiary source of income for majority of households.

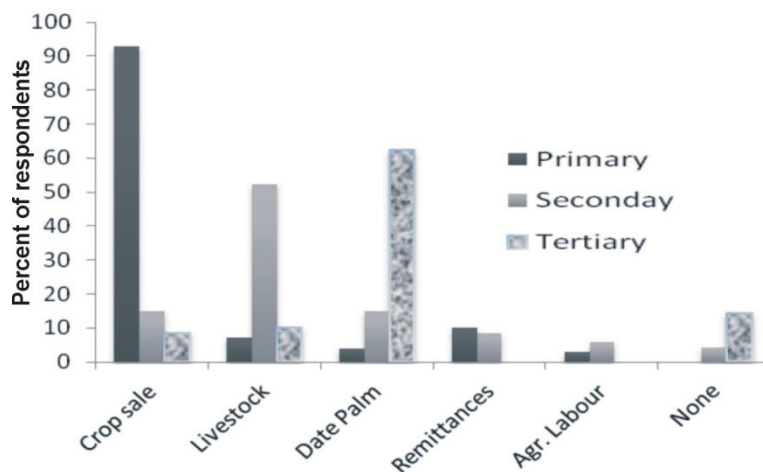


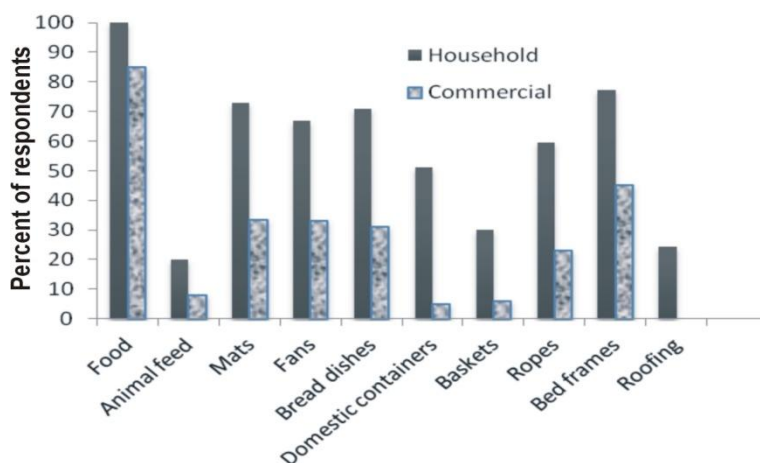
Fig. 1. Percent of respondents

It is evident from the above discussion that crop sale, livestock and date palm, respectively were major income generating activities in most of the households. The date palm tree appeared to be third main source of income for a large majority of the respondents. Thus its contribution to livelihoods in the study area was considerable. Chaudhary *et al.* (16) also observed that date palm tree contributes significantly to the livelihoods of farmers in date palm growing areas.

The income from date palm include all the income collected from selling of dates and other products of date palm tree like mats, manual fans, ropes, etc in one year. The data collected on this aspect revealed that majority of the households earned Rs. 0-15000/acre and only few farmers earned more than Rs. 15000/acre. In fact the return from one acre (90 trees) of a well developed date orchard is approximately ranged from Rs 156600 to 200250 (23). It means that the income of respondents from date palm was very low if compared with possible income from well developed date orchards. Qualitative interviews revealed that low yielding varieties, improper marketing infrastructure, and unawareness about production technology greatly reduced the income from date palm trees. Beside the use of date palm food, it is used in manufacturing of enormous household and commercial products (14) and

also serves as a construction material (7). Both household and commercial usages of date palm were explored in the study area. Respondents were asked about different uses of date palm tree for household and commercial purposes regardless of their percentages.

The results (Fig. 2) revealed that all respondents used date palm as a food while few of the respondents fed dates to their animals. Majority of the respondents prepared bed frames, mats, bread dishes, manual fans, ropes



**Fig. 2. Household and commercial usages of date palm**

and domestic container for household use. The results regarding commercial usages of date palm, a large majority of respondents sell their dates while few of the respondent sell premature dates to livestock rears. As far as, other products of date palm were concerned, bed frames, mats, manual fans, bread dishes, ropes, baskets and domestic containers were sold (Fig. 2). The average rate of fresh dates was Rs 44.32 per kg while rate of premature dates was Rs 26.1 per kg. The price received by the growers was less than half of prices of other improved varieties in Pakistan. The causes of low profitability of date palm explored by the qualitative data were low yield, inferior quality, scattered pattern, pre and post harvested losses and less marketing information.

The results data indicated that date palm was being used as a food, animal feed, and was also used in manufacturing of different products. These diverse usages showed the importance of date palm in daily life of the rural people. The results depicted that commercial percentage of dates was not very

impressive. Some of the reasons explored during the qualitative study are given below:-

- Farmers don't care much about the marketing of dates because of low quantity and quality, different time of ripening and low expected prices of dates.
- Long distance from farm to suitable market
- The relatively rich farmers in the study area often hesitate to sell their dates because of their status in the community. They usually gift dates to friends and relatives
- In most of the cases there is too little or no expenditure on the production of date palm so farmers considered it as an extra source of income and don't expect more from it.

The products like mats, manual fans, bread dishes etc are extensively used by rural and urban population of the study area and fall among other necessities of life in the region. These products, in some cases, become more essential than dates (7). In the study area, these products were mostly prepared by the rural women at their homes and were either sold to local community or marketed in the urban centre. The contribution of these products in total income from date palm was significant.

### **CONCLUSION**

The study revealed that little attention is being paid by the farmers to production technology and marketing is being of date palm. However, date palm is the third major source of income for majority of the respondents. The usage of a wide range of both commercial and household date palm products in the study area was found which indicates the important role of date palm in sustainable livelihoods of the farmers. An urgent attention is required from the government to utilize the full potential of date palm by providing incentives for the proper marketing of date palm products.

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