Sector Report
DATES SECTOR
BALOCHISTAN

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INTRODUCTION:

Dates

Dates are oval-shaped, reddish-yellow, sweet fruits that grow on the date palm tree. Although not confirmed, it is believed that this tree originated in what is now present-day Iraq. Dates are considered a staple food throughout Middle Eastern countries with evidence of cultivation dating back as far as 7000 BC.

Agro-Ecological Zone

The recommended crops for the district according to its ecological zones are given in the table below:

Ecological Zones	Name of District	Altitude (Feet)	Recommended Crops
Sub Tropical	Kohlu, Chaghai, Kharan, Turbat, Panjgur, and Dera Bugti, Nushki, Washuk.	1500-3000	Wheat, Barley, Rapeseed & Mustard, Canola, Cumin ,Gram, Masoor, Vegetables, Fodders, Sunflower, Safflower, Rice, Jowar, Maize, Sesame, Pulses, Onion, Potato, Melons, Chilies, Coriander, Garlic, Cotton, Almond, Apple, Apricot, Grapes, Peaches, Plum, Pear, Pomegranate, Dates, Mangoes, Citrus, Banana, Guava, Papaya, Chickoo and Fig.
Temperature	Panjgur, Khuzdar, Loralai, Barkhan, Musakhail, and Kharan, Washuk.	3000-4500	Wheat, Barley, Cumin, Gram, Mutter Pulse, Masoor, Vegetables, Fodders, Sunflower, Safflower, Rice, Jowar, Maize, Pulses, Onion, Potato, Melons, Chilies, Coriander, Garlic, Cotton, Almond, Apple, Apricot, Grapes, Peaches, Plum, Pear, Pomegranate, Cherry, Pistachio, Dates, Citrus, Banana, Guava, Chickoo and Fig

Cultivation

Date palms require arid and semi-arid conditions in places with long, hot summers and little to no rainfall for growth. In an agricultural setting, the roots are kept clear of grass and weeds that might hold in humidity and a small trench is dug around the base of the tree. This trench is filled with water so that it may go directly to the roots. When the fruit begins to form on long strands, agricultural workers remove the majority of the fruits to allow the remaining dates to grow to large sizes. These larger sizes are in high demand on the international market. Below is a look at which countries produce the greatest weight of dates every year and to where those dates are exported.

Leading Date Growing Countries

Egypt is the world leader in date production and cultivation. Each year, this country produces approximately 1,084,529 metric tons of dates. This represents a little over 17% of global date production but only 3% of world exports. Egypt has increased date cultivation by more than 100% since 1993 and currently has an estimated 15,582,000 date palm trees. Just over half, 53%, of exported Egyptian dates are imported by Morocco, this is followed by Indonesia (24%) and Malaysia (15%). The total export value is around $41.8 million.

Following Egypt, **Iran** produces 947,809 metric tons annually. Despite this large production rate, it only accounts for approximately 7.7% of total world exports. The majority of Iran's date exports go to Asian countries. The biggest importers are India (16%) and Malaysia (11%). Russia follows by importing 9.9% of Iran's exported dates.

The third largest producer of dates is **Saudi Arabia**. This country has the perfect conditions for date growth and cultivation, producing 836,983 metric tons per year. Nearly 388,000 acres across the country are dedicated to date palms and its fruit production. This country exports approximately 8.8% of the world's dates which totals around $94.3 million. The primary importers of these exports are Jordan (19%), Yemen (17%), and Kuwait (15%).

Iraq produces 675,440 metric tons every year and is responsible for 7.3% of global date exports. This country once produced over 1 million metric tons annually and had 30 million date palms. That was in the 1980's, however, before the war with Iran. Yearly production reached only

420,000 tons during Saddam Hussein's regime. The government has since reinvested in the industry and is slowly increasing production. In 2014, the country exported $77.5 million worth of dates and 79% of that went to India. A significantly smaller percentage went to Egypt (8.5%) and Morocco (3.7%).

(2017 Statistics)

Rank	Country	Annual Production of Fresh Dates in Metric Tons
1	Egypt	1,084,529
2	Iran	947,809
3	Saudi Arabia	836,983
4	Iraq	675,440
5	Pakistan	556,608
6	UAE	533,701
7	Algeria	485,415
8	Sudan	435,668
9	South Soudan	432,100
10	Oman	239,397

The edible date palm is botanically known as *Phoenix dactylifera* L. with a diploid set (2n = 2x = 36) of chromosomes. The 'Phoenix' species have two types of growth habit: trunked or clumping depending on the culture where the date palm grows. The trunk height is ranging between 15 and 25 meters. The date palm is grown in about 37 countries with more than 2000 different cultivars. A large population of date palm trees is found in the Arabian Gulf and North Africa with a small population in North American states (California, Arizona and Mexico). Date palm requires high temperature of 35^{o}C for optimum pollen development, fruit set and ripening with low relative humidity. It requires abundance of water drained from bottom of the soil or from surface irrigation

through a deep-rooted structure. The date palm grows well in almost less rain fall areas at North latitude ranging from 9^{o}-39^{o} with areas represented by Sahara desert in Africa and Southern borders of Near East commonly known as Arabian Peninsula, Southern Iraq and Jordan. A date palm garden can survive up to an average life of 40-50 years, but few are still productive up to 150 years.

DATE PALM IN PAKISTAN

Nature has bestowed Pakistan with distinctive climatic and soil conditions, which provide a great diversity in the agricultural sector. Around 63% of the total population in Pakistan is living in rural areas and has direct or indirect links with agriculture, which contributes >21% to the GDP and engages 45% of the labour. A large variety of fruits are grown in Pakistan on an estimated area of 735,000 hectares with an average production of about 5,712,000 ton annually, in which groves play a major role. Citrus (Citrus spp.), mango (*Mangifera indica* L.), dates, and banana (*Musa paradisiaca* L.) are major crops grown in the country, which not only provide food for the community, but as in other countries also support the overall economy.

The main date palm growing areas of Pakistan are: Muzaffargarh, Jhang, Bahawalpur, and Dera Ghazi Khan (Punjab), Turbat and Panjgur (Balochistan), Dera Ismail Khan (Khyber Pakhtunkhwa), and Khairpur and Sukkur. More than 300 date palm varieties are grown of which the twelve commercially important are: Karbalaen, Aseel, Mozawati, Fasli, Begum Jhangi, Halawi, Dashtiari, Sabzo, Kaharba, Jawan Sorh, Rabai, and Dhakki. However, some cultivars, grown in specific areas, such as Dhakki in Dera Ismail Khan, Aseel in Khairpur, and Mozawati in Panjgur and Begum Jhangi in Turbat , have a particularly high market demand and some of them have the potential to compete with the world's best quality dates.

DATE SECTOR OF BALOCHISTAN

Pakistan is the fifth largest date producer in the world. Dates are cultivated on an area of 74.80 thousand hectares with a production of 426.80 thousand tons. Balochistan produces 225, 000 tons of dates from an area of 42.3 thousand hectares and contributes 53 per cent to the total national output. In Balochistan, the prime cultivated varieties are Mozawati, Begum Jangi, Kaharba, Sabzo, Haleni, Gookhnah, Jawan sorh and Dashtari.

Mekran division produces 227,000 tons of quality dates from about 20 varieties. Unfortunately, only a few thousand tons are marketed. Mekran is the second largest date producer in the country after Sukkur. Kech district's share is 59 per cent.

MEKRAN is known for the best quality of dates. This production starts in summer during the months of May, June, July and August. The areas where dates are produced include Panjgoor, Karan, Awaran and Bulida

More than 100 varieties of dates are produced from the region of Mekran such as Begum jangi, Muzafti, Shakri and Alleni. Date is a source of livelihood for a majority of people living in the area. Poor farmers earn money by selling dates in the market. Due to the non-availability of a structured market, farmers fail to sell them at reasonable prices.

Panjgur a district in Makran region bordering Iran is situated in the south of Balochistan. It is home to beautiful date trees and is an exporter of the largest variety of indigenous date's variety from the region. Panjgur is a remote area with limited processing and storage facility for the dates. Date production is spread out over an area of about 20,000 hectares and is one of the main cash crops for 70 percent of the population. In dates, Mozawati variety is indigenous to Balochistan, and most of its production is from Panjgur district. Mozawati is best suited as table date due to its physical appearance, rich nutritional benefits and high demand from national and international consumers.

Productions of Dates in Balochistan district wise are as follows:

Districts	Area in Hectares	Production in Tons	Yield in KGs/Hectare
Chagai	30	1054	6899
Kachhi	95	157	5607
Jhal Magsi	16	21	4200
Khuzdar	583	180	557
Awaran	62	59	0
Kharan	396	134	3622
Lasbela	26	117	5571
Turbat	24388	102350	4312
Panjgur	18950	83117	4752
Gwadar	1709	8366	4930
Washuk	3433	3544	3627
Noshki	41	248	6889
Total	**49,739**	**199,797**	**50,966**

Agriculture Statistics Balochistan (2014-2015)

IMPORTANCE OF DATE PALM

Date palm has a significant role to nourish the residents of these areas due to its high nutritional value, health, economic, spiritual, aesthetic and environmental importance. It also plays an important role to provide an appropriate habitation for the nomad's in the form of shade to avoid the hot winds of deserts. The fruit of date palm is composed of a fleshy seeded pericarp.

Worldwide, date fruit has its unique nutritional significance and it is consumed as fresh or other derived by-products. The date palm is a mainly an important produce in scorched areas and plays a significant part in economic and social life of the people living in these. The date palm has religious values as well as cultural significance for mankind. In the 'Holy Qur'an more than 20 verses narrated the importance of date palm than any other fruit bearing plant, which is associated with the religion and Muslims. The name of date palm is cited in the holy books like Qur'an, Torah and Buddha, due to its prized value and historic.

Nutritional significance

Date fruit is considered as an important nutritional component in the food of the residents where it is cultivated. The fruit of date palm also becomes a vital part in daily life of the people for those countries which import this fruit. Date fruit is rich source of chemical constituents which are variable due to numerous factors such as cultivar type, area of cultivation, climatic conditions, fertilizer application and different management operations. The fruit of date palm is an important and rich source of nutrition for humans as it provides a large amount of sugars, salts, minerals, fibers, vitamins, phytonutrients, fatty acids, protein and amino acids etc. Thus dates are considered as highly nutritious when consumed with other food items and mostly people consumed dates in the form of fresh or dried. Widely studied that date fruit has a great health potential as medicinal diet for the ailment of different types of human diseases. Date fruit is highly rich in carbohydrates and sugars i.e. glucose.

Medicinal importance

In ancient times, date fruits and seeds have been used as medication in numerous traditional systems where date palm is cultivated. Worldwide, dates are commonly used due to its biological significance for human beings as it contains anti-oxidant and anti-mutagenic properties. According to an ethno-medicinal survey, dates have been traditionally used for the treatment of hypertensive and diabetics patients in southeast Morocco. Old Egyptians used dates as a vital tonic component in numerous aphrodisiac and different types of confectionaries. The flesh of date fruits boiled in the milk until it becomes soft and then consumed as a tonic for mothers during pregnancy as highly nutritious food. Date fruits are thought to strengthen the gums in babies having teeth problems.

Socio-economic importance

Date palm has primary importance as a subsistence crop in Pakistan, particularly in its vast desert areas. Dates are marketed all over the country as a highly appreciated fruit and confectionery product of which use peaks during the Muslim feast of Ramadan and the Hindu celebration of Diwali. The mineral, carbohydrate, and vitamin rich dates are an excellent source of food not only for humans, but also serve as a feed supplement for livestock at times of scarcity.

The cultivation of date palm is performed in a large range of cropping and farming systems such as oases, groves, home gardens, as a mono-crop as well as an intercrop. Intercropping is one of the most important cropping techniques in sustainable agriculture where it yields additional income to the farmer, increases soil fertility, promotes land biodiversity, and diversifies agricultural products. Date palm provides sufficient space for intercropping even if it is fully grown whereby it only marginally competes with other crops. Date palm groves provide a favorable habitat for understory herbal crops and fruits by creating humidity, shade and reduction in weather extremes. They also prevent the soil from degradation and desertification. Dates can be intercropped with other fruits, fodder, and vegetables. Groves, intercropping and scattered settings are the predominant cultivation forms of date palm in Pakistan.

Date palm has numerous usages and produces many useful products for human. Leaves are used for making roofs, mats, staple dishes, hand fans, baskets, packaging material, and also for ropes and fences. Trunks can be used as a construction material for houses and bridges, and as packing material for local transportation of vegetables and fruits. Terminal buds and young leaves can be cooked as vegetables while rachises are used for paper making. Moreover, date cultivation and production offers many jobs in groves during fruit harvest and processing.

The socio-economic conditions and food security status in date palm growing areas in Pakistan are, however, not satisfactory. There are claims that better economic growth and rural income in developing countries like Pakistan can be achieved by efficient post-harvest and marketing systems. Date growers in Pakistan often depend on advanced payments and other informal credits from commission agents, wholesalers and contractors with unfavorable conditions. Furthermore, date palm growers face problems in marketing their products given their poor education. The prevalence of traditional marketing structures therefore results in 30-40%

deterioration of fresh produce before it reaches the consumption. Other limitations in date palm cultivation areas include low quality date palm cultivars, poor farm management, processing facilities, uncertainty in prices at the time of selling and shortage of qualified trained labour.

VARIETIES OF DATES PALM IN BALOCHISTAN

The following date varieties are found in Balochistan:

1. Abdantan
2. Aboo
3. Abrugen
4. Abutaleb
5. Ale Mehtari
6. Ashahi
7. Ashoobah
8. Bahrayni
9. Barni
10. Bigam Jangi
11. Carpan
12. Chapshak Kolonti
13. Chapshok
14. Dendari
15. Deshtari
16. Deski
17. Diger
18. Drahr vari
19. Eshkandak
20. Farz
21. Ghasb
22. Govardival
23. Habashi
24. Halileh gon
25. Halinie
26. Hanizi
27. Hashishi
28. Hekkal
29. Hesab
30. Hivark
31. Josboak
32. Jovandack
33. Juhani
34. kalagi
35. Kalami
36. Kalint
37. Kallagi
38. Kalut
39. Kanbari Koroch
40. Kaneshkig
41. Kermanchi
42. Kiasarkonk
43. Koroch Drazdan
44. Koroch Siahdan
45. Koroch Sohrdan
46. Koroch Zardan
47. Kotomi
48. Kotomi
49. Mahm Karimi
50. Makili
51. Mavolosi
52. Maysuri
53. Minab
54. Mohmadi
55. Mordar Seng
56. Mosobi
57. Mozawati
58. Mozawati Dan
59. Negar
60. Nikidini
61. Nohdangazi
62. Padagani
63. Pimazu
64. Pimazudan
65. Piran
66. Popoo
67. Pull
68. Rabbi Sarchahi
69. Rabei
70. Rasi daan
71. Raskuee
72. Rougni
73. Rozbeyanig
74. Sabzo
75. Sad Ganji
76. Shakari
77. Sharipa
78. Sohrdan
79. Sohrkonk
80. Vash Kank
81. Vash Konk
82. Vashbar
83. Vashgal
84. Vashna
85. Zardani

REASONS FOR SLOW PACE OF DEVELOPMENT

There are various reasons for which date farming has not been able to get a status of an established sector and therefore has failed to contribute its share in the economy of Pakistan in general and economic activity of the Balochistan in particular.

According to the survey and feed back of the people associated directly or indirectly with Date production, Unawareness and Negligence from the government, farmers and land lords and lack of water are the root causes of the present situation of the Date sector are following.

Agricultural knowledge base about date farming.

Farmers and land lords associated with Date production are unable to apply modern agricultural techniques to increase the production of crop. Age old traditional farming mechanisms are still employed by the farmers. Date production level from a particular farm has reached to a stagnant level and it is declining annually due to various hurdles in terms of disease attack and inefficient irrigation mechanism.

Cultivation of different varieties of Date tree in the same farm:

Farmers and date growers lack knowledge of bulk production of one specie, they are unable to apply product segregation and product specialization mechanism, they practice cultivating different species altogether, and in the end of the crop when date is ready, segregation and production of varieties becomes impossible or very difficult therefore messing up the end bulk quantity with dates of different sizes and species.

Inappropriate harvesting:

According to international acceptable standards, harvesting must be faultless and clean, since it significantly affects the rest of the process (packing and marketing). Unfortunately in Balochistan date growing areas, harvesting is done by age old traditional methods in which fruit bunches are thrown from the tree tops to the ground worthlessly and after that packing of the fruit bunches in bags made of date tree leaves or nylon, tins and baskets miserably not only de shapes the fruit but

also spoils the presentation and quality of the fruit as this method of packing doesn't prevent the fruit from harsh effects of weather and environment.

Unawareness of the Drip Irrigation System.

For irrigation of date farms, the farmers are dependent on the amount of rain fall in the area, as in last 7 years the amount of rainfall in Balochistan in general and in Panjgur and Kech in particular was low to none, therefore the date crop has been badly affected due to low rain and hence less waters. If drip irrigation system is employed then by effective consumption of water for irrigating the date farms dependency on karaiz and canals will become less.

Unawareness of Fertilization Technique.

Farmers are applying age old mechanism for date production in the fertilization of a Date tree. For fertilization, instead of applying natural pollination mechanism which is done through air, here it is done manually where a farmer climbs and takes pollens from a male tree and then sprinkles those pollens manually by climbing each female tree. This process of fertilization is labor intensive, ineffective fertilization resulting in less crop production.

Disease out Break:

Due to unawareness and no modern agriculture knowledge, date farms are highly vulnerable to virus and other diseases attacks. If viruses or other disease attacks a date farm then farmers cannot recognize it at early stages which results in damaging the production considerably.

> **Sheergu Virus:** This virus has attacked date farms of Panjgur and its affiliated areas in 2002 and farmers were unable to recognize this attack till 2005, after 3 years of the attack when the virus showed up in damaging 60% of the total production, then farmers and agriculture department started making efforts to get rid of the virus. Till now their efforts are underway for curing the farms from the viral damage.

lack of Knowledge about Marketing, Preservation and Presentation of the Date Products:

The packing, preservation and presentation Date products of Balochistan, for local and for exports markets are near to none. Farmers, land lords and middle men (contractors) are totally unaware of any preservation techniques and they are not aware of those procedures which attract consumers and increase the demand for this commodity

The farmers and growers of the area are not aware of the demand of Date products in national and international Markets. They are unaware of the fact that they can earn millions of Dollars as foreign exchange for them self and for the country through good production, preservation and presentation.

The local date growers are not giving any serious considerations to the byproducts of date, which are may be of high in value in terms of demand. Industrial date products and by products include (paste, spread, syrup, liquid sugar, wines, distilled liquors, industrial alcohol, animal feed, organic acids and pharmaceuticals, special foods, etc.)

CONCLUSION:

The Baluchistan area has a dry hot weather during the season. Annual rainfall is below 100 mm and the wind speed is mostly high and charged with dust. Balochistan produces a major share of the dates grown in Pakistan. The total production of dates was 0.6 Tons in 2014-15 or 30% of the total fruits produced in Balochistan. Makran Division produced around 193,833 Tons, which is around 97% of the total dates produced in Balochistan. Turbat (Kech) district enjoying the larger share of the production of date's i.e. 51 % while Panjgur district is producing 42 % of dates produced in Balochistan.

There is need of government intervention to boost the date's sector of Balochistan because it is deteriorating day by day. Due to abundance of tube wells the karaiz of some areas are dry and water is becoming rare day by day. To maintain and boost this sector government of Balochistan should take some revolutionary steps to save this sector.