COMPENDIUM ON ENVIRONMENT STATISTICS OF PAKISTAN 2020

Pakistan Bureau of Statistics
Government of Pakistan
ISLAMABAD

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FOREWORD

As an inescapable concomitant with the traditional route of economic development, Pakistan has been facing natural resource degradation and pollution problems. The unsavory spectacle of air pollution, water contamination and other macro environmental impacts such as water logging, land degradation and desertification, are on rise. All this, in conjunction with rapid growth in population, have been instrumental to the expanding tentacles of poverty. In order to assess the environmental problems as a prelude to arrest the pace of degeneration and provide for sustainable course of economic development, the availability of adequate data is imperative. This publication is an attempt to provide relevant statistics compiled through secondary sources collected from different departments and organizations.

The task of environmental data collection does not consist just in determining the frame and approaching the selected sources of information because environmental statistics per se do not exist as a ready-to-compile/pick category as generally perceived about data and statistics. The information on environment has generated through deliberate scientific observations and measurements in a consistent way, under the aegis of specialized agencies. Since it is skill and resource intensive pursuit and generally undertaken in public sector, the overall budgetary/financial constraints do take the toll of the canvas and continuity of environmental data generation down the time lane.

Consequently, availability of the statistics falls short of desired level. Further, the studies pertaining to normal over a period of time are repeated after long time intervals, which may not conform with the quinquennial periodicity of this document. Similarly, many variables antecedental, associated with and, consequential to, environment are derived from Population Census, which is yet to be carried out even though the stipulated decennial time frame has long been overstepped.

Nevertheless, the latest update of the compendium is a good attempt to mirror quite a few environmental factors as a means to raise awareness and help stay focus on the pivotality of environmental concerns for instituting sustainable development paradigm-the only way forward to ensuring the continuity of human race on the face of planet earth. It expected that it will assist the Government for developing new policies and further necessary measures to improve the environment.

I hope that researchers, planners and environmentalists would find this document useful for their specific pursuits. Comments/suggestions for further improvement of this report would be welcomed and will be highly appreciated.

The report is also available on www.pbs.gov.pk.

Mr. Mathar Niaz Rana
Secretary/Chief Statistician

M/O Planning Development & Special Initiatives
Pakistan Bureau of Statistics
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Islamabad
January, 2021

PREFACE

Pakistan Bureau of Statistics prepared the 1st Compendium on Environment Statistics of Pakistan in 1998 under the Technical Assistance of Asian Development Bank in accordance with, as far as possible, the guidelines of United Nations "Framework for the Development of Environment Statistics (FDES)". It has since been updating it as a regular activity with quinquennial periodicity. ***Compendium on Environment Statistics of Pakistan 2020*** is the fourth update in the series follow the previous format with addition of COVID-19 data. The predecessor of the current one presented the statistics of 2015 vintage. Notwithstanding exclusive reliance on mail inquiry, all possible efforts have been made to collect available secondary data for the compendium. This report is an attempt to present a real picture of highliting the factors which effects the environment.

I hope this opportunity to acknowledge the debt of gratitude owed to our worthy respondents of data both in public and in private sector. I would also like to appreciate the staff of Social Statistics Section for their untiring efforts towards compiling this document in accordance with in the stipulated periodicity. I do hope that the planners, researcher and other users at large will find this document useful for their varied inquests.

ISMAIL KHAN
Deputy Director General

Pakistan Bureau of Statistics
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January, 2021

GENSIS OF THE REPORT

The compilation of Compendium on Environment Statistics of Pakistan 2020 owes to the untiring efforts of the following staff of the Pakistan Bureau of Statistics.

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CONTENTS

SECTION - B

Socio-Economic Activities and Natural Events

As national and international level the environmental problems are mainly caused by a variety of demographic and socio-economic factors viz, population growth, agricultural and industrial development, poverty, etc. Human activities are associated with environment involving continuous exchange and transformation of materials. Man's exploitation of resources without sustainability considerations leads to environmental degradation to the detriment of biosphere.

This section presents data on population growth, housing, Labour force, land utilization, agriculture, large-scale manufacturing, minerals, energy, transport and communication, water quality, noise level, waste generation and disposal, air quality, wave heights and tides and recreation.

A-I   Demographic Situation

Average annual growth rate of population calculated based on decennial Censuses. 2.45 percent in 1961, peaked to 3.69 % in 1972 and set on declining thereafter to the level of 2.40 percent in 2017 Census. Rural growth followed the overall pattern while urban growth has since been declining. However, in line with the expected demographic transition, percentage population share of rural areas has been decreasing while that of urban areas increasing.

Table: A-I Population Distribution, Growth Rates and Percentage Share by Urban and Rural Areas

Year	Population (Million)			Growth Rates			Percentage Share	
	All Areas	Rural Area	Urban Area	All Areas	Rural Area	Urban Area	Rural Area	Urban Area
1951	33.75	27.76	5.99	-	-	-	82.25	17.75
1961	42.88	33.23	9.65	2.45	1.83	4.94	77.50	22.50
1972	65.31	48.72	16.59	3.69	3.35	4.77	74.60	25.40
1981	84.25	60.41	23.84	3.06	2.58	4.38	71.70	28.30
1998	132.35	89.31	43.04	2.69	2.33	3.53	67.5	32.5
2017 *	207.77	132.19	75.58	2.40	2.23	2.7	63.62	36.38

Source: -   i.   Pakistan Bureau of Statistics
            II.   Economic Survery of Pakistan.
* Provisional

Figure: A-1 (a) Population Trends 1951 to 2017*
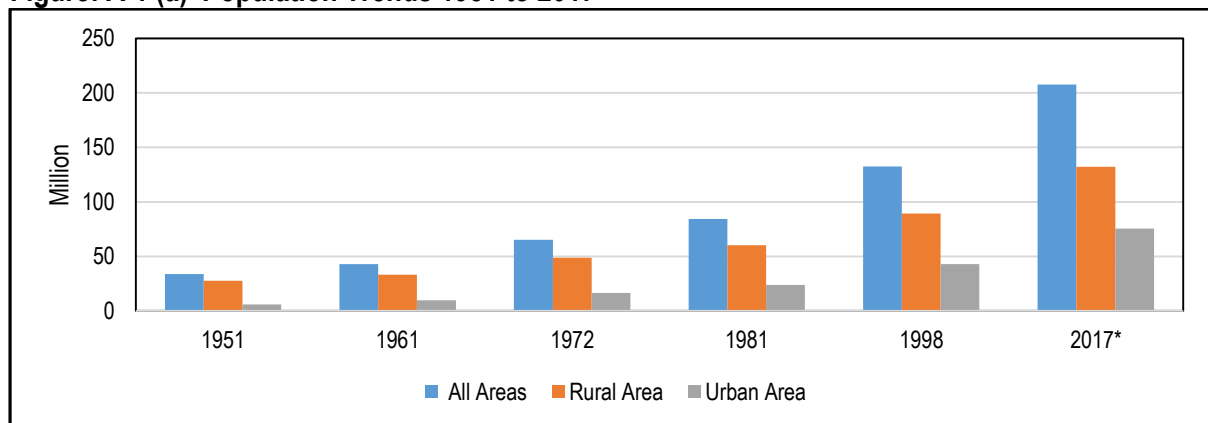
Figure: A-1 (b) Average Annual Growth Rate 1961 to 2017 *
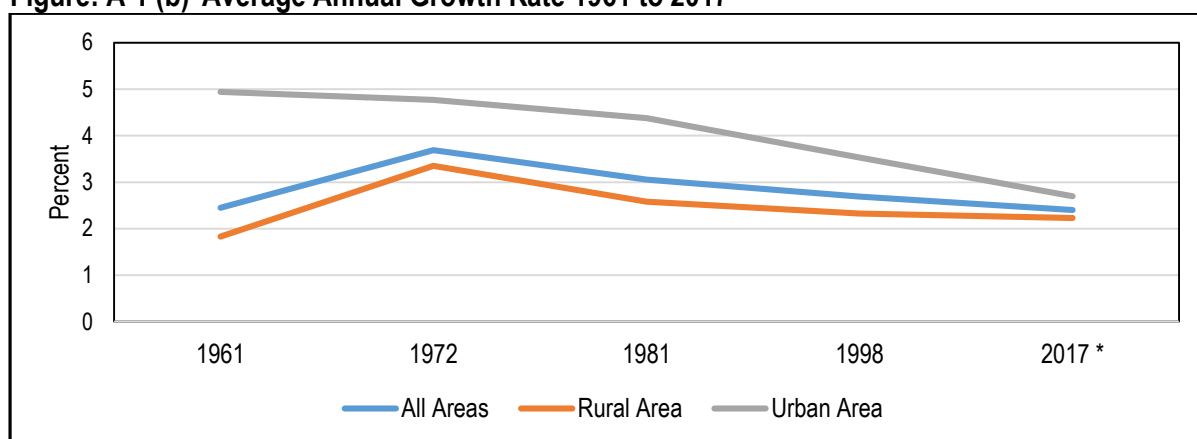
* Provisional

Rapid urbanization is one of the foremost hallmarks of the demographic scene of Pakistan. The five most populous cities of Pakistan are shown in Table A-II. According to the Census, 2017 the most populous city of Pakistan is Karachi having population of 14.91 million and second most populous city is Lahore having population of 11.13 million. In the last 19 years, a rapid increase has been observed in the population of Lahore city and the population becomes doubles as compared to the previous census i.e.1998. As Pakistan's resourcefulness does not concede ample space to prioritize infrastructural development, rapid urbanization is likely to lead to proliferation of slums to the detriment of physical, social and administrative environment of urban localities.

Table: A-II   Most Populous Cities of Pakistan

Cities	1981	1998	2017 *
Karachi	5.21	9.34	14.91
Lahore	2.95	5.14	11.13
Faisalabad	1.10	2.01	3.20
Rawalpindi	0.79	1.41	2.10
Gujranwala	0.60	1.13	2.03

Source: -   Pakistan Bureau of statistics
             * Provisional

The age composition of country's population has significant implication on the current and future development of the country and it determines the potential for future growth of specific age groups. Therefore, the most important demographic characteristic of a population is its age structure or the proportion of people at each age, by sex. Population of any country can be categorized into three broad groups. These are children, young and senior citizen. The population the group of children between 0 to 14 years of age is economically unproductive and need family care, playgrounds, education and medical care. They depend upon working population for their necessities. Countries with young population need to invest more in schols colleges and technical institutes.

The young population is considered and asset of a nation. This age structure of a population affects a nation's key socio-economic issues. These people are economically productive and they comprise the working population. Nevertheless, the rapid growth in this group can become employment. However, the government with appropriate polices can utilize this youth bulge for the development of the

economy. The senior citizens also belong to dependent group and needs medical facilities and old age benefit system.

It is apparent from the Table A-III that 34 percent population is under the age group of 15 years and 7 percent population is in the age group of 60 years and above in 2020. This 41 percent population is economically dependent and needs food, and medical facilities. Pakistan has a remarkable young age structure and it can be observed from the table that 59 percent population belongs to the age group of working class that is 15-59 years. This dynamic group is the main source to raise the economic growth and can create and opportunity for the country to boost its productive capacity. However, this demographic dividend is dependent on the investment being made in the human development education, training and health.

Table: A-III   Population by Selected Age Groups

In Millions

Age Groups	1998	2014	2015	2020	2025	2030	2035
0-4	21.64	25.03	25.31	25.86	25.17	23.88	22.28
5-9	18.92	22.63	23.03	24.83	25.45	24.83	23.50
10-14	16.28	20.49	20.90	22.93	24.74	25.38	24.67
15-19	13.99	18.95	19.10	20.82	22.87	24.69	25.23
20-24	11.74	18.20	18.39	19.01	20.75	22.81	24.53
25-29	9.91	16.61	17.02	18.29	18.94	20.68	22.65
30-34	8.13	14.03	14.51	16.92	18.20	18.86	20.52
35-39	6.82	11.84	12.23	14.39	16.80	18.10	18.69
40-44	5.68	9.86	10.25	12.09	14.25	16.66	17.89
45-49	4.74	8.58	8.73	10.07	11.91	14.06	16.39
50-54	3.90	6.98	7.25	8.49	9.82	11.64	13.72
55-59	3.17	5.39	5.65	6.92	8.14	9.45	11.18
60-64	2.48	3.93	4.09	5.24	6.45	7.62	8.85
65-69	1.90	3.03	3.08	3.62	4.67	5.79	6.85
70-74	0.90	2.32	2.37	2.53	3.01	3.92	4.90
75-79	1.38	1.43	1.48	1.76	1.90	2.30	3.03
80+	0.76	1.21	1.25	1.47	1.77	2.04	2.46
Total	132.35	190.50	194.64	215.25	234.85	252.70	267.35

Source: -   National Institute of Population Studies

A-I.i   Population Density

The country's population density has tripled from 54 in 1961 to 166 persons per sq. kilometer in 1998. It increased to 261 in 2017. Population density of province in a descending order are as follow:- Punjab 536, Khyber Pakhtunkhwawa 410, Sindh 340 and Balochistan 530 in 2017 (Table A-02 and Figure: A-2).

Figure: A-2   Population Density by Province, 1951 to 2017
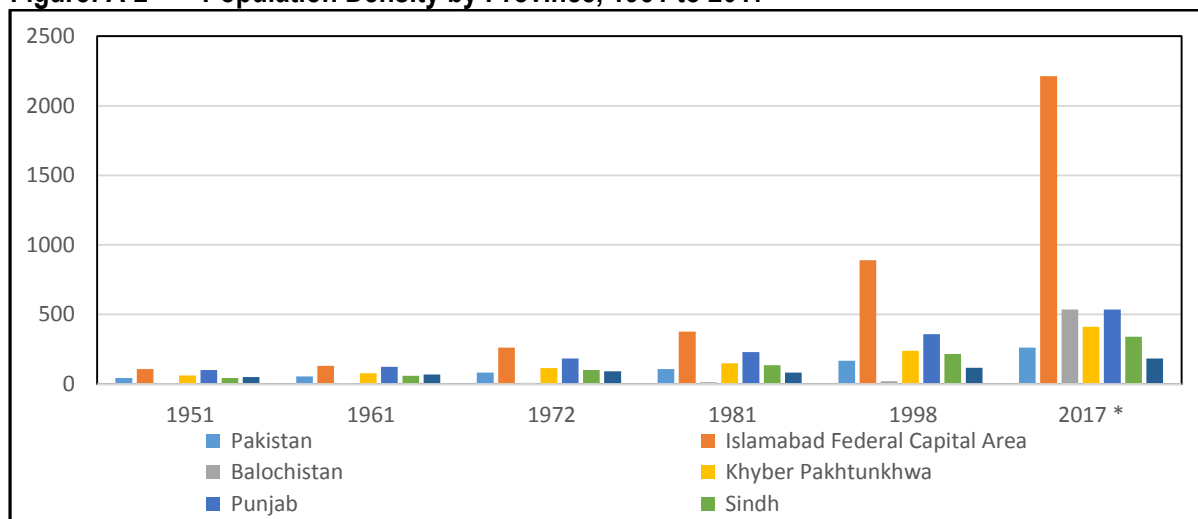
* Provisional

A-I.ii   Urban-Rural Population Distribution

The urban population increased from 17.8 percent of the total population in 1951 to 36.4 percent in 2017, registering an annual growth rate of 2.4 percent. Rural population decreased from 82.2 percent in 1951 to 63.6 percent in 2017. In terms of absolute numbers, urban population grew from 5.99 million in 1951 to 75.58 million in 2017 posting 13 times increase in 72 years, while rural population quadrupled. (Table A-I). Arguably, Pakistan is on the way to rapid urbanization. Percentage share of population of Pakistan by urban/rural can be seen (Table A-V Figure A-4)

Table: A-IV   Percentage Share of Population of Pakistan by Province, 1998 & 2017

Area	1998	2017*
Punjab	55.63	52.95
Sindh	23.00	23.05
Khyber Pakhtunkhwa	13.41	14.69
Balochistan	4.96	5.94
FATA	2.40	2.41
Islamabad	0.61	0.97

* Provisional

Figure: A-3   Percentage Share of Population of Pakistan by Province, 1998 & 2017

* Provisional

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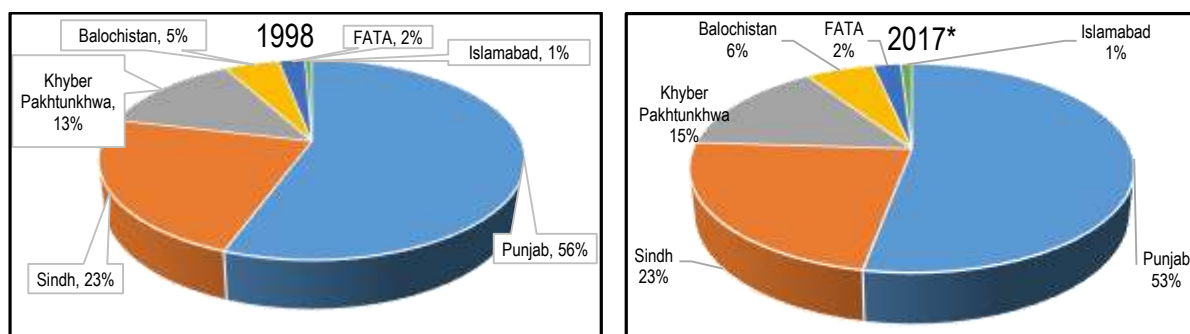
A-I-iii Province wise population distribution

As per Census 2017 Punjab has the highest share among the total population i.e 52.95% followed by Sindh 23.05%, KP 14.69% and Balochistan 5.94% (Table A-IV, Figure A-3) gives the breakdown of Population by province-wise.

Table: A-V   Percentage Share of Population of Pakistan by Urban/Rural, 1998 & 2017

Area	1988		2017*	
	Urban	Rural	Urban	Rural
Punjab	53.48	56.66	53.43	52.67
Sindh	34.48	17.47	32.96	17.38
Khyber Pakhtunkhwa	6.96	16.51	7.58	18.76
Balochistan	3.65	5.59	4.50	6.77
FATA	0.20	3.46	0.19	3.68
Islamabad	1.23	0.31	1.34	0.75

* Provisional

Figure: A-4   Percentage Share of Population of Pakistan by Urban/Rural, 1998 & 2017 *
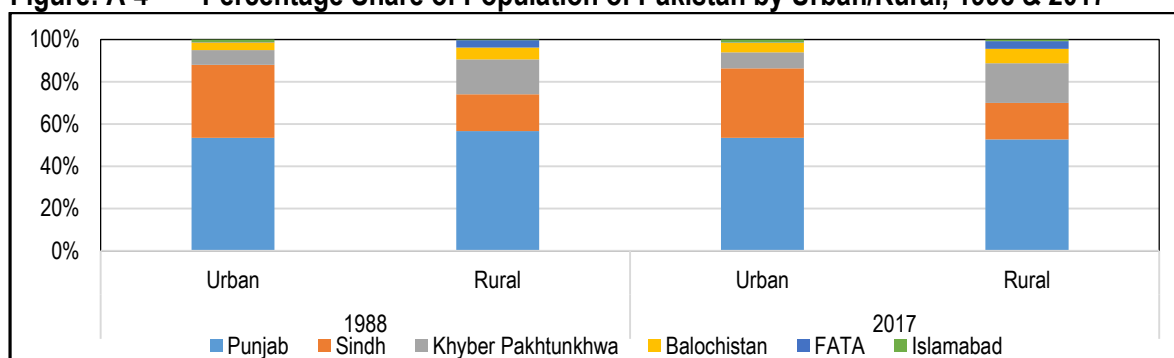
* Provisional

A-I.iv   Global Perspective

United State Population Reference Bureau (PRB) publishes tabulations on world's demographics. According to PRB's estimates-, which appear to be extrapolation of intercensal growth, rate under certain assumptions- Pakistan ranks fifth among the most populous countries of the world n 2020. Previously, Pakistan ranked 10th in 1991, seventh in 1998, and sixth in 2015. Data I can be seen in Table A-VI.

Table: A-VI   Ten Most Populous Countries, 2020 to 2050

S. No	Country	Population Mid 2020 (million)	Rate of Natural increase(%)	Population Mid 2035(millions)	Projected Population Mid-2050 (millions)
1	China	1402.4	0.3	1423.6	1366.1
2	India	1400.1	1.4	1576.3	1663.0
3	USA	329.0	0.3	361.8	385.7
4	Indonesia	271.7	1.2	307.7	328.7
5	Pakistan	220.9	2.2	287.2	347.8
6	Brazil	211.8	0.8	229.2	232.9
7	Nigeria	206.1	2.5	295.0	401.3
8	Bangladesh	169.8	1.6	196.9	215.5
9	MAXICO	127.8	1.2	141.9	148.2
10	Japan	126.0	-0.4	123.6	109.9

Sources**: -**   i. 2020 Population Reference Bureau.
                      ii. Internet World Start. 2020

A-I.v   Fertility

In the absence of vital statistics registration system and consequential inadequacy of data, it is difficult to estimate accurate fertility rates in the country. However, some direct and indirect estimates of fertility under different assumptions have been made through various surveys. One of the major source of such information is the Pakistan Demographic Survey (PDS) from 1985 to 2007 conducted by Federal Bureau of Statistics. However, the same cannot be conducted sofar, NIPS conducted PDHS survey on the basis of this survey indicates decline in total fertility rate (TFR) from 4.80 in per woman in 1998 to 3.26 in 2020 as projected population of the NIPS (Table A-VII). Antecedently, the crude birth rate (CBR) declined from 27.3 per thousand populations in 2003 to 26.1 percent per thousand populations in 2019 by the NIPS. (Table A-VIII). These trends allude to a sort of demographic transition towards sustainable population dynamics.

Table: A-VII   Total Fertility Rate (TFR) 1998 to 2020

Year	Pakistan	Punjab	Sindh	Khyber Pakhtunkhwa	Balochistan	Islamabad	FATA
1998	4.80	4.70	4.70	5.10	5.40	3.80	5.15
1999	4.73	4.64	4.65	5.02	5.32	3.75	5.10
2000	4.67	4.58	4.59	4.94	5.24	3.69	5.05
2001	4.60	4.52	4.54	4.86	5.16	3.64	5.00
2002	4.53	4.46	4.49	4.78	5.08	3.59	4.95
2003	4.47	4.40	4.43	4.70	5.00	3.53	4.90
2004	4.40	4.34	4.38	4.62	4.92	3.48	4.85
2005	4.33	4.28	4.33	4.54	4.84	3.43	4.80
2006	4.27	4.22	4.27	4.46	4.76	3.37	4.75
2007	4.20	4.16	4.22	4.38	4.68	3.32	4.70
2008	4.13	4.10	4.17	4.30	4.60	3.27	4.65
2009	4.07	4.04	4.11	4.22	4.52	3.21	4.60
2010	4.00	3.98	4.06	4.14	4.44	3.16	4.55
2011	3.93	3.92	4.01	4.06	4.36	3.11	4.50
2012	3.87	3.86	3.95	3.98	4.28	3.05	4.45
2013	3.80	3.80	3.90	3.90	4.20	3.00	4.40
2014	3.72	3.72	3.82	3.82	4.13	2.95	4.34
2015	3.65	3.64	3.74	3.75	4.06	2.90	4.28
2016	3.57	3.55	3.65	3.67	4.00	2.85	4.22
2017	3.49	3.47	3.57	3.59	3.93	2.80	4.16
2018	3.41	3.39	3.49	3.51	3.86	2.75	4.10
2019	3.34	3.31	3.41	3.44	3.79	2.70	4.04
2020	3.26	3.23	3.33	3.36	3.72	2.65	3.98

Source: National Insitute of Pakistan Studies, Islamabad

A-I.vi Mortality

Crude death rate (CDR) provides an overall picture of the level of mortality in the country. CDR declined from eleven (12) per thousand in 1985 to seven (7) in 2019 during a span of thirty (34) years (Table-VIII). Better health facilities, improved nutrition and introduction of vaccination programme are some of the prime factors to have resulted in the decline of mortality rate.

A-I.vii   Infant Mortality Rate

Infant mortality rate (IMR) is an important indicator of health situation in a country. Pakistan has been having very high infant mortality rate. IMR was 79.9 per thousand live births in 1999 declined to 60

per thousand live births in 2019. However, it is still high (Table A-V) as compared to other developing countries.

Table: A-VIII   Crude Birth, Crude Death and Infant Mortality Rates

Year	Crude Birth Rate (Per 000 population)	Crude Death Rate (Per 000 population)	Infant Mortality Rate (Per 000 population)
2003	27.3	8.0	83.0
2004	27.8	8.7	79.9
2006	26.1	7.1	76.7
2007	25.5	7.9	72.4
2008	25.0	7.7	70.2
2009	28.4	7.6	73.5
2010	28.0	7.4	72.0
2011	27.5	7.3	70.5
2012	27.2	7.2	69.0
2013	26.8	7.0	67.5
2014	26.4	6.9	66.1
2015	26.1	6.8	64.6
2016 *	27.8	7.0	62.4
2017	27.3	6.9	61.4
2018	26.7	6.8	60.5
2019	26.1	6.7	59.5

Source: -   Economic Survey of Pakistan
* Population data revised from 2016 on baisis of projections provided by NIPS.

Figure: A-5   Crude Birth Rate and Crude Death Rate
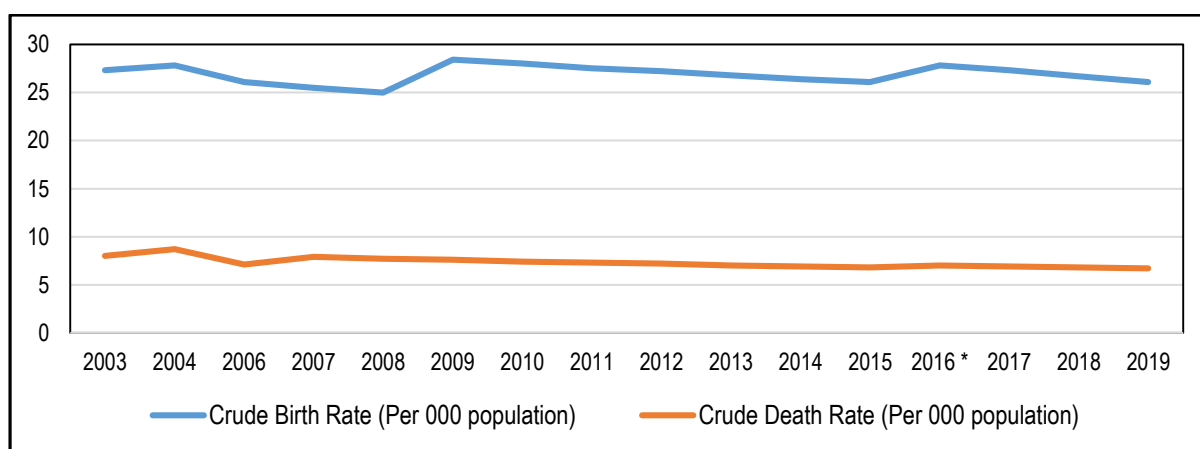
A-I.viii   Life Expectancy

Expectancy of life at birth is an important indicator of survivability. In the absence of vital statistics registration system, the adequate data on age specific deaths are not available. Table below A-IX presents life expectancy at birth by sex. It indicates that expectancy of life at birth, which was 62.50 for male and 62.40 for female in 1999 increased to 67.7 for male and 68.7 for females in 2020. Higher stride in the case of females indicates gravitation towards progressive socio-cultural practices.

Table: A-IX   Life Expectancy at Birth, 1991-2020

Years	Life Expectancy at Birth (years)	
	Male	Female
1991	59.3	60.7
1992	59.3	60.7
1993	59.3	60.7
1994	59.3	60.7
1996	60.3	61.9
1997	62.8	64.6
1998	62.3	62.1
1999	62.5	62.4
2000	62.7	62.7
2001	62.9	63.0
2002	63.1	63.3
2003	63.3	63.6
2004	63.5	64.0
2005	63.7	64.3
2006	64.0	64.6
2007	64.2	64.9
2008	64.4	65.2
2009	64.6	65.5
2010	64.8	65.8
2011	65.0	66.0
2012	65.2	66.3
2013	65.4	66.6
2014	65.6	66.9
2015	65.8	67.2
2016	66.0	67.5
2017	66.1	67.8
2018	66.3	68.1
2019	66.5	68.4
2020	67.7	68.7

Source**: -**   1.   Pakistan Bureau of Statistics.
              2.   National Insitution of Pakistan Studies (Population Projection).

A-II   Housing

As per Population Census and household based Surveys, a "household "or a" housing unit" is defined as a socio-economic unit consisting of individuals who live together whether related to each other or not but sharing the same kitchen. In the context of housing units' deficit at the time of independence due to mass migration, coupled with high population growth, the country has continuously been facing shortages of housing units.

During this period, urban areas of Balochistan and Punjab witnessed increase in the construction of housing units while pace of construction in KP and Balochistan remained almost on the same level. As for pressure on housing units, the average household size during 2012-13 to 2018-19 (Table A-X) remains same; though seem to be relieving in all provinces, except Balochistan and Punjab.

Table: A-X   Average Household Size by Provinces and Urban/Rural Areas

Area	2012-13	2013-14	2018-19
Pakistan	**6.3**	**6.3**	**6.2**
Urban	6.0	6.1	6.0
Rural	6.4	6.5	6.4
Punjab	**6.1**	**6.1**	**5.8**
Urban	6.0	6.1	5.7
Rural	6.1	6.2	5.8
Sindh	**6.2**	**6.1**	**6.2**
Urban	5.8	5.8	6.0
Rural	6.6	6.5	6.5
Khyber Pakhtunkhwa	**7.1**	**7.2**	**7.5 ***
Urban	6.9	7.0	7.5 *
Rural	7.1	7.2	7.5 *
Balochistan	**7.2**	**7.9**	**8.1**
Urban	7.2	8.3	7.9
Rural	7.2	7.8	8.2

Source**: -** Pakistan Social and Living Standard Measurement Surveys, PBS.
*   In PSLM survery 2018-19 FATA has been included in KP

Figure: A-6   Average Household Size Pakistan and Provinces 2012-13, 2013-14 & 2018-19
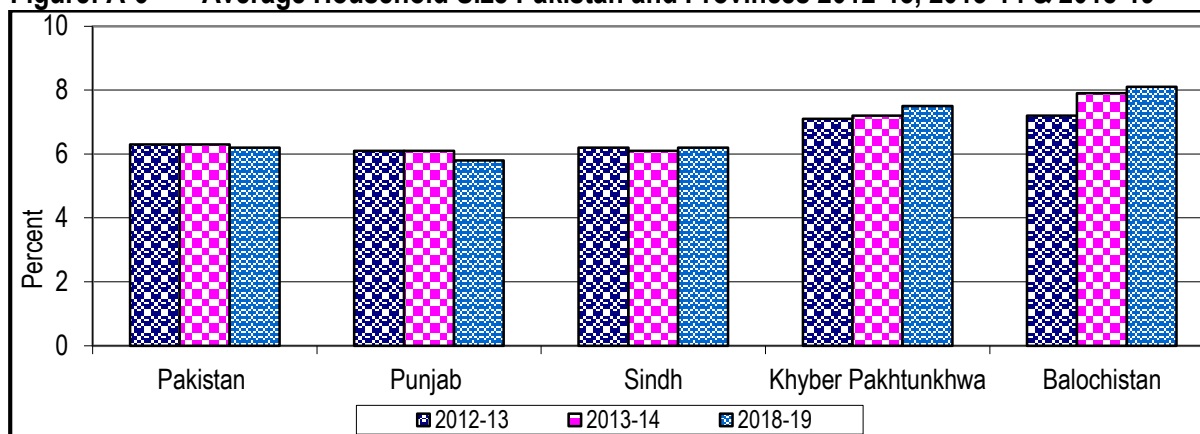
Average number of persons per room does not reflect an enviable situation. However, it seems to be decreasing, more in urban than rural area as compared to previous years 2012-13 & 2013-14. Province wise average number of person per room is in descending order are as follows Sindh 3.84, Balochistan 3.51, Khyber Pakhtunkhawa 3.24 and Punjab 2.98 in 2018-19 (Table A-XI).

Table: A-XI   Average Number of Persons per Room by Provinces and Urban/Rural Areas

Area	2012-13	2013-14	2018-19
Pakistan	**3.25**	**3.38**	**3.24**
Urban	2.93	3.06	2.95
Rural	3.42	3.57	3.41
Punjab	**3.15**	**3.22**	**2.98**
Urban	2.98	3.04	2.78
Rural	3.23	3.31	3.1
Sindh	**3.55**	**3.72**	**3.84**
Urban	2.83	3.06	3.23
Rural	4.35	4.46	4.55
Khyber Pakhtunkhwa	**3.16**	**3.35**	**3.24 ***
Urban	3.03	3.10	3.02 *
Rural	3.18	3.40	3.29 *
Balochistan	**3.22**	**3.65**	**3.51**
Urban	3.00	3.28	3.27
Rural	3.29	3.78	3.6

Source: - Pakistan Social and Living Standard Measurement Survey, PBS.
*   In PSLM survery 2018-19 FATA has been included in KP

Figure: A-7   Average Number of persons per Room 2012-13, 2013-14 & 2018-19
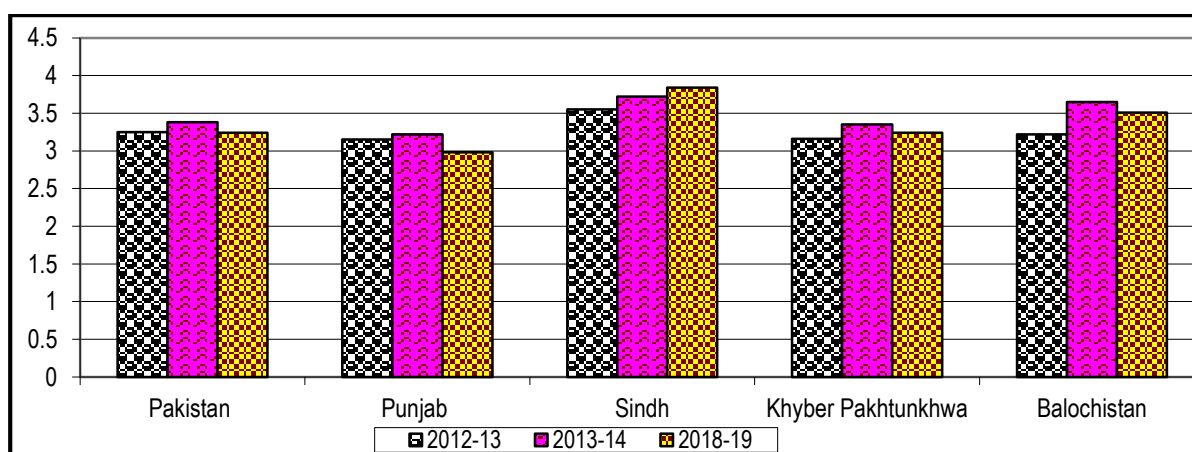
According to PSLM Survey, there were 28 percent one-roomed, 67 percent two to four rooms, 6 percent five are more room housing units in 2014-15. The share of all the foremost category are slightly decreased in 2018-19 except the percentage of one room which is reported as same as compared to 2014-15 in PSLM survey. According to the PSLM survey 2018-19, province wise share of one room household is in descending order are as follows. Sindh 40 percent, Punjab 27 Percent, Khyber Pakhtunkhawa 19 percent and Balochistan 17 percent (Table A-XII). Balochistan province shows the maximum share of 5 or more room which is reported as 11 percent as compared to other provinces In PSLM 2018-19.

Table: A-XII   Percentage Distribution of Household by number of Rooms-by Province and Region

Province/Region	2014-15			2018-19		
	Urban	Rural	Total	Urban	Rural	Total
Pakistan						
One Room	24	30	28	24	31	28
2-4 Rooms	70	65	67	69	63	65
5& More Rooms	7	5	6	7	6	6
Total	100	100	100	100	100	100
Punjab						
One Room	24	28	27	24	29	27
2-4 Rooms	68	66	67	68	65	66
5& More Rooms	8	6	6	8	6	7
Total	100	100	100	100	100	100
Sindh						
One Room	25	47	35	27	54	40
2-4 Rooms	71	52	62	70	45	58
5& More Rooms	4	1	2	3	1	2
Total	100	100	100	100	100	100
Khyber Pakhtunkhwa						
One Room	17	17	17	16 *	20 *	19 *
2-4 Rooms	69	74	73	70 *	70 *	70 *
5& More Rooms	14	9	10	14 *	10 *	10 *
Total	100	100	100	100 *	100 *	100 *
Balochistan						
One Room	13	17	16	13	19	17
2-4 Rooms	75	77	77	77	69	71
5& More Rooms	12	6	7	9	12	11
Total	100	100	100	100	100	100

Source: - Pakistan Social and Living Standard Measurement Survey, PBS.

*   In PSLM survery 2018-19 FATA has been included in KP

Figure: A-8   Percentage Distribution of Population by No. of Rooms per Housing Units Pakistan 2014-15 & 2018-19
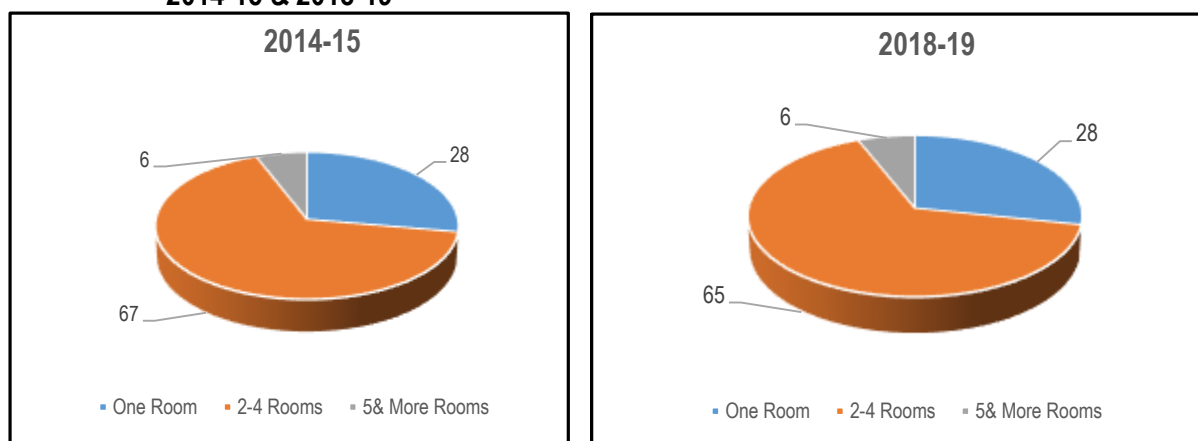
A-II.i   Housing Units by Lighting Facilities

According to Pakistan Social & Living Standards Measurement (PSLM) Survey, 93.45 percent of the housing units had electricity facilities in 2013-14 and it decreased to 91.2 percent in 2018-19, whereas about 4.00 percent of the households were using Gas and oil for lighting in 2013-14, their share decreased to about 1.0 percent in 2018-19. A comparison of data by urban-rural areas shows that 98.3 percent of the housing units in urban areas have electricity facilities in 2018-19 while 86.8 percent of rural housing units have electricity facilities in 2018-19 (Table A-12) which indicates the better standard of living.

A-II.ii   Housing Units by Type of Cooking Fuel Used

Analysis of data suggests that 51.17 percent of housing units were using wood as cooking fuel in 2014-15, which decreased to 36.1 percent in 2018-19. About 41.42 percent of the households were using Gas and oil as cooking fuel in 2014-15, which increased to 47.5 percent in 2018-19, (Table A-13).

A-II.iii   Housing Units by Water Facilities

An important basic need for the population is the access to safe drinking water. In 2013-14 only 26 percent housing units had access to tap water either available inside or outside the housing unit while, about 61 percent of the households were using ground water i.e. either hand pumps or Motor Pump, and the remaining 13 percent were using water from dug well and others (Table A-14).

Analysis by area shows that about 52 percent of the urban population had access to tap water either inside or outside of the housing units in 2013-14 while, the share of such category decreased to 31 percent in 2018-19. The situation in rural areas was worst where only 11 percent of the rural housing units had facilities of safe tap water in 2013-14, which was reported same i.e 11 percent in 2018-19. Whereas about 75 percent of rural housing units were using ground water in 2013-14 which increased to 73 percent in 2018-19 whereas, about 10 percent were using water for drinking purposes either from other sources i.e., ponds, springs, rivers and streams in 2013-14 the share of which increase to 12 percent in 2018-19 in rural areas (Table A-14).

A-II.iv   Housing Units with Latrine Facilities

According to (PSLM) survey, about 74 percent of the households had flush facility in their toilets, 9 percent were without flush and 17 percent of the households had no latrine facility in their housing units in 2013-14. The area wise analysis indicates that 98 percent of the urban household had flush system in their toilets in 2013-14, which reported same i.e 98 percent in 2018-19. While 1 percent had no flush facility in urban area, 2013-14 which is reported same i.e 1 percent in 2018-19 and 1 percent of the urban household did not have toilet facility in the housing units in 2013-14, which remain the same in 2018-19. The situation in rural areas has improved in respect of having flush facility as compared to urban areas and it increased from 61 percent in 2013-14 to 70 percent in 2018-19. The overall situation has also improved in 2018-19 and the percentage of housing units having flush facility in their toilets increased to 80 percent as compared to 2013-14 when it was reported as 74 percent (A-15).

A-III   Labour Force

The economically active population or Labour Force is the group of persons who produce goods and services to meet the requirement of the society. In Pakistan, labour force has defined as all persons ten years of age and above who are working or looking for work for cash or kind, one week prior to the date of enumeration. The labour force participation rate in Pakistan is comparatively low mainly due to low participation of female in the labour force. There may be several explanations for this however; few are stated as early age marriages, strong social and cultural influence on free movement of women and absence of an organized labour market. The main sources of labour force and employment statistics are decennial Population Census and Labour Force Survey conducted by Pakistan Bureau of Statistics on annual basis. According to the latest available Labour Force Survey, 2017-18, about 44.3 percent of the total population was in the civilian labour force. The analysis of data of last 36 years indicates that the total Civilian Labour Force that was 27.57 percent in 1981 increased to 44.3 percent in 2017-18.

According to Labour Force Survey 2017-18, about 39.7 percent of the urban population (10 years and above) was in civilian labour force as against 47.1 percent for rural areas. The percentage of total un-employed was 2.57 percent in 2017-18. The urban unemployment rate was slightly higher as compared to that of rural areas (Table A-16 to19).

A-IV   Land Utilization

Pakistan has 79.61 million hectares of land out of which 58.02 million hectares area of land (73%) have been surveyed and reported. Of the total reported area, only 40 percent was cropped area till 2018-19(R). The cropped area registered same during the last few 20 years. In the face of increasing population, it is imperative to employ all means to increase agricultural productivity including as well the expansion of area under cultivation.

The net area sown during 2018-19 was 71 percent of the total cultivated area. About 7.75 million hectares of areas was shown more than once during 2018-19 (Table A-20). The analysis of data shows that Area sown more than once is slightly increasing since 2004-05. The share of "Area sown more than once" was about 33 percent of the total cropped area during 2018-19. This is an encouraging trend, and amounts to substantial expansion in productive capacity to the benefit of attaining food security.

A-V   Agriculture

A-V.i   Area under Agriculture Crops

The largest segment of the cultivated area (8.7 million hectares) went to wheat crop during 2018-19 followed by Rice (2.8 million hectares), Cotton (2.4 million hectares), Gram (0.9 million hectares), Maize (1.4 million hectares), Sugarcane (1.1 million hectares). An analysis of data for 2008-09 to 2018-19 regarding area under agricultural crops indicates fluctuating trends for different crops, however, shows increasing trend for some of the major crops like Maize, cotton, rice and fruits like grapes and dates (Table A-21).

A-V.ii Production of Agriculture Crops

The wheat is foremost of the major crops in terms of area and production. Production of wheat during 2018-19 is 24.4 million tones as against 24.03 million tones in 2008-09. The rice production was 6.95 million tones in 2008-09, which increased to 7.2 million tons in 2018-19. Like area under cultivation, production of various important crops also indicates fluctuating trends during 2008-09 to 2018-19. This may be attributed more too natural than economic causes. However, there was significant increase in the production of major crops during 2018-19 as compared to 2008-097 (Table A-22).

A-VI   Water

Pakistan has entered into the 21st century with rising challenge to meet food and fiber requirements for its population for domestic consumption and export. Water in Pakistan is becoming scarce, while major parts of conventional resources have already been developed.

In order to meet the needs of water and sanitation, food and fiber, industry and environmental protection, concerted efforts are required to develop the requisite resources with futuristic considerations. Achieving sustainable development will, thus be a major challenge and conservation and optimum utilization of available resources will undoubtedly be one of the most critical considerations in this regard.

River flows: Pakistan is one of the very few countries in the world whose water resources entirely depend upon one river system- the Indus Basin. Although, in addition to the Indus River System, the Kharan

Closed Desert Basin and the Mekran Coastal Basin located in Balochistan have some development potential but it constitutes less than three percent of the total surface water.

Of the total available annual flow of 145MAF in the Indus Basin, 105MAF has already being used through 19 barrages with 45 canal systems above and below rim stations. Average annual escapades below the Kotri Barrage going to the sea are 35MAF. Flow below Kotri provides an indication of the available potential since it is the result of all enroute inflows, outflows, gains and losses of the system. In order to develop and utilize the surplus flows, some provision has to be made for minimum flow below Kotri to meet daily requirements of drinking, cultivation of riverine area, forests etc., and occasional needs for pallah fish, mangroves and to check the saltwater intrusion.

It would be pertinent to reiterate that the yield of our crops is lower than the world average in spite of favourable combination of land and agro-climatic environments. The primary reason for it is inadequate availability of water at critical times during the crop growth. The problem of already-restricted supplies is being compounded by the continuous silting-up of the existing reservoirs, which had initially provided some flexibility in meeting the demand-based water needs of crops.

Rainfall Harvesting Monsoon and westerly disturbances are two main weather systems that contribute to the rainfall in Pakistan. The average annual rainfall is 291mm (11.4 inches). Nearly two-third is received in the Kharif (summer), while the rest in the Rabi (winter). During the three Monsoon months (July to September), almost half of the rainfall is received.

While a substantial portion of the rainfall occurring in the cultivated areas of the Indus Plain is consumed by crops as a consumptive use, in the foothill areas of Pakistan rainfall gives rise to flashy hill torrents, and major portion of the flow goes waste, in the form of evaporation. From the development point of view the potential of flows in hill torrent, Pakistan can be divided in to 13 major regions:

The hill torrents bring in flashy floods of short durations but of high magnitudes. Due to steep gradients, flood flows move with enormous velocity which results in the erosion of banks and bed of channels. Flood flows debauching onto the plain areas are generally charged with high silt contents, which preclude their management, by dams or reservoirs. As the flood flows traverse the flatter areas, they rapidly deposit their silt load because of reduction in velocity. Silting and scouring phenomena are largely responsible for frequent changes in flow regime and shifting of flow paths of hill torrents that are typical of geological young "fans". Unpredictable and erratic nature of floods and high silt contents thus pose a serious challenge to the ingenuity of water planners and engineers for their economic management.

Presently, a major part of hill torrent runoff not only goes waste but also causes untold miseries further aggravating conditions in the areas, which are grossly underdeveloped. A rational planning of the existing water resources can ensure a systematic agriculture to lay the foundation for the socio-economic uplift. The conservation of flows of various hill torrent areas also conforms with the overall national planning for bringing additional areas under cultivation so as to produce more food, besides, improving the socio-economic conditions of the local population.

Glaciers and snow: Glacial area of the Upper Indus is around 22,500 sq. km, where on an average three to four meters of snowfall occurs every year. The Upper Indus catchments contains some of the largest glaciers in the world outside the Polar Regions. Glacier area of the Kabul River is located near Unai Pass of the Southern Hindukush, while glacial and snowmelt area of Chenab and Jhelum Rivers are located in the Occupied Jammu and Kashmir. The right bank tributaries of Jhelum River i.e., Kunhar and Neelum rivers carry major share of the snow melt, primarily, situated in Pakistan or along the Line of

Control. Glaciers and snowmelt contribution is 85 percent in the case of Indus,80 percent for Kabul,75 percent for Chenab and slightly over 50 percent for Jhelum River.

It is estimated that the total volume of water stored in the glacial area of Indus river is about 340 MAF, while the volume of water stored in glacial zed area of Kabul, Chenab and Jhelum Rivers is 300 MAF. The yearly contribution of flow at rim stations as a result of melting of snow and ice is over 110 MAF. The formation and melting of snow and ice in the glacial area, is in a state of equilibrium. It must not be disturbed to get additional water benefits during drought conditions by resorting, to otherwise, highly tempting artificial techniques. If equilibrium is upset, the sustainability will be destroyed leading to disastrous consequences. Accordingly, no additional development potential is considered available from this valuable resource.

Groundwater: The readily available groundwater resources of Pakistan have played an increasingly important role in meeting the country's food and fiber requirements. Groundwater now supplies around 45 percent of crop water requirements in the country. The reservoirs underlying the Indus Plains are an inherent offshoot of the canal system, and are of immeasurable value in poverty alleviation in Pakistan. Ground water use permits farmers to exercise a greater control over the available water and results in timely application of water for crops. This has transformed the concept of low and uncertain crop yields to more secure and predictable form of crop production. Even away from the Indus Plains in the highland areas of Balochistan and North West Frontier Province, ground water has been crucial in supporting the agricultural sector. It is therefore, imperative that long-term sustainability of groundwater, as a resource, is maintained to ensure the growing food requirements of the country.

From the point of view of availability of groundwater, the country can be divided into two major areas, the predominantly canal irrigated Indus Plain primarily located in Punjab and Sindh, and the areas of the KP and Balochistan with a limited groundwater development potential in a few localized areas.

During the last few years or so, spectacular increase in the number of private tube wells has changed the underground paradigm entirely. In several groundwater areas, there has been a complete Volta face. Where some years ago high groundwater was a major threat, water levels have now declined due to private tube wells development. However, the pace at which the groundwater exploitation has unfolded has added complexity of its management. The number of users is over 2.5 million farmers, who extract groundwater through their own tube wells or buy water from their neighbours. Their behavioral patterns are highly variable and they understand little about any adverse interaction, which is likely to result due to unsystematic and erratic nature of groundwater pumping. Their major interest is to pump ever more water to meet the rising crop water requirements. In many regions, the impact on the groundwater resources is alarming; levels are declining rapidly to infeasible pumping depths, and there is intrusion of saline water in the fresh groundwater areas through lateral or upward movement.

Existing number of private tube wells in Pakistan is over 922,146 and annual groundwater extraction through private tube wells under the normal hydro-climatic conditions is of the order of 42 MAF. The province wise sustainable development potential is:

	(MAF)
Province	Sustainable potential
Punjab	36
Sindh	8*
KP	2
Balochistan	2

* Potential can be further increased to about 14 MAF (65 per cent of annual recharge) by using latest state-of-the –art-techniques.

Development potential and requirements: Remaining development potential of water resources is approaching a stage where complex factors involved, require fine-tuning to permit sustainability. Surface-water resources have some potential for development that are not fully exploited, while groundwater sources require system controls and a regulatory body to permit private operations to enhance production. Pakistan is facing increasing water needs, by growing population, increased urbanization, higher standards of living and by an agricultural policy which has emphasized on expanded production for future.

The development potential of the three water resources of Pakistan is summarized as:

	(MAF)
Resource	Development Potential
River flows	22
Rainfall harvesting (hill torrents)	12
Ground water:	
a)	6
b)	12*

* Under ultimate conditions, with the latest state-of-the-art techniques.

It has been estimated that the population of Pakistan will be around 221 million by the year-2025. In order to meet water requirements across various sector by the year 2025 i.e., agriculture, water supply/sanitation, industry etc., the country would need additional water to the tune of 20 MAF at the farm gate for agriculture and 8 MAF for other sectors. Agriculture requirements are based on the assumption of 50 percent increase in the yields of crops with non-water uses, like better seeds, fertilizers pesticides and better agronomic practices for which potential of 300 percent exists in Pakistan, (Dawn Economic & Business Review, July 12-18, 2004 by Sabir Ali Bhatti)

Agricultural development in Pakistan is affected by two main constraints, suitable soil and water, particularly the latter one. There are two major sources of water supply in the country i.e. surface water and ground water. The main source of surface water is Indus Basin. The share of surface water is higher than the ground water towards the total availability of water. Moreover, the surface water availability during Kharif Season is higher than Rabi.

Year wise breakdown Table A-24 indicates that about 50.9% in kharif and 25.4% in Rabi requirement for 2018-19 of water availability at form gate met with surface water while remaining requirements are met with ground water by means of public and private tube wells. The total availability of water is 127.40 MAF during the year 2018-19 wherein the overall ground water is reported as 77.8 MAF was available at form gate during 2018-19. It has been observed in 2009-10 that the overall surface water was 133.7o MAF available during the year 2009-10 and out of which 50.21 MAF was overall ground water.

A-VI.i Tube wells

Tube wells are the source of ground water supply in the country and 1357036 tube well were reported in 2017-18 (P). There were about 707 thousand tube wells in the country in 2001-02, which increased to 1357 thousand in 2017-18 (p), at an average annual growth rate of about 3.9 percent. As for share by province, Punjab accounts 78.6 percent of the total tube wells installed in the country during 2017-18, followed by Balouchistan (3.1 percent), Khyber Pakhtunkhwa (1.3 percent), Sindh (17 percent) and Punjab (78.6 percnet). (Table A-23).

A-VII Livestock

A-VII.i Livestock Population

Livestock over the year has emerged as the largest sub-sector in agrciculture. It is a source of foreign exchange earnings and contributes about 3.1 percent in total exports. More than 8 million rural families are engaged in livestock production and driving more than 35-40 percent of their income from this sector (Pakistan Economic Survey, 2019-20).

Analysis of data on livestock population for the period 2012-13 to 2018-19 indicates increase in various categories of animals. The number of buffalos which were 33.5 million in 2012-13 increased to 40.0 million in 2018-19. The population of goats and sheep was higher as compared to other animals. The population of goats increased from 64858 in 2012-13 to 76143 in 2018-19 and population of sheep increased from 28755 in 2012-13 to 30141 in 2018-19(Table A-29).

A-VII.ii Livestock Products

The major livestock products are beef butter, mutton, poultry meat, milk and eggs. Beef production increase from 1830 thousand tonnes in 2012-13 to 2227 thousand tones in 2018-19. The mutton production registered increase from 643 thousand tones in 2012-13 to 732 thousand tones in 2018-19.

The milk is the major food item in Pakistan widely used for preparation of tea, sweets, butter and yogurt as well as for drinking purposes. The production of milk available for human consumption was decreased from 50.0 million tons in 2012-13 to 48.0 million tons in 2018-19 (Table A-30).

Poultry meat is also in high demand due to higher prices of beef and mutton since last few years. The poultry farming has increased considerably during the early 1991-92. The production for poultry meat increased from 907 thousand tones in 2012-13 to 1518 thousand tones in 2018-19 during last 7 years. Eggs production was increased from 13813 million in 2012-13 to 19052 million in 2018-19 (Table A-30).

A-VIII   Forestry

Pakistan is forest deficient country, mainly due to arid and semi-arid climate in large parts of the country. The Country is maintaining 4.51 million hectares to 5.01 percent area under forest cover, out of which 3.44 million hectres forests exist on state-owned lands and remaining on communal and private lands. Though the forestry having meager share of 2.1 percent in agriculture, it provides foundations of life on earth through ecological function, regulates the climate and water resources and serves as habitat for plants and animals.

To meet the domestic needs and to improve the forest cover, the federal government has launched Ten Billion Tree Sunami Programme by replicating the Billion Tree Afforestation Project (BTAP) implemented by Government of Khyber Pahktunkhwa. The project aims at, inter alia, combating the effects of global warming. This is an umbrella project covering all the provinces including AJK and GB with provincial budgetary share. All segments of society such as students, youth and farmers are strongly involved in the afforestation activities (Pakistan Economic Survey 2019-20).

A-IX   Transportation

Smoke that comes out of industrial units, houses, motor cars and other vehicular traffic contains gases like carbon dioxide, carbon monoxide, oxides of Sulphur, nitrogen and carbon particles etc. All such compound and particles are injurious to health. The gases used as coolant in air conditioners, refrigerators and similar devices cause extremely harmful changes in the upper atmosphere, where they are believe to be decreasing the thickness of the Ozone layer, which normally protects human and other living organisms from the injurious sunrays. If this process goes on unchecked, it will prove disastrous for environment and living organisms.

Transportation plays vital role in the development of the country, Railway tracks, roads and high ways are essential for economic development. However, the transport in cities and major urban Centre is threat to the environment. The air pollution due to transport in large cities like Karachi, Lahore, Faisalabad, Peshawar, Quetta and Rawalpindi has considerably increased during the recent years. The vehicular emission of hydrocarbons, baldheads, carbon monoxide, Sulphur dioxide and nitrogen oxides are dangerous pollutants to human health, causing bronchitis, irritation, asthma attacks and irritate the eyes, arise primarily through vehicles emission in the urban areas (PNCS-94).

Presently, Pakistan ranks at 22nd position worldwide for 263,775 Km length of its road network (13,000 km of National Highways and Motorways, 93,000 km of provincial highways and rest are District and Rural Roads). The country is likely to improve its ranking significantly with the construction of new economic connectivity projects, especially under the China Pakistan Economic Corridor (CPEC), the Central Asia Regional Economic Cooperation (CAREC) Programme and continuous government programme (Pakistan Economic Survey 2019-20).

The road length which was about 252 thousand km in 2002-03 increased to 271 thousand km in 2018-19. The average annual growth in length during 2002-03 to 2018-19 is 0.5 percent whereas the length of high type roads was 144652 km in 2000-01 and it increased to 201100 km in 2018-19 (Pakistan Economic Survey 2019-20).

Total registered vehicles during 1996 were 3.838 million and 29.052 million reported in 2019(P). There were about 114 thousand registered buses in 1996 and the number of buses increased to about 254 thousand in 2019. There were only 54 thousand taxis in the country in 1996 increased to 171 thousand in 2019. Despite considerable increase in the number of buses, taxis, motor rickshaws and wagons, the urban population is still facing the transport problem. The high population growth along with rapid urbanization has caused serious traffic problems in major cities. The analysis of transport data indicates increasing trends in almost all sorts of vehicles to the rising detriment of the environment (Pakistan Economic Survey 2019-20).

Table A-01: Population of Pakistan by Region/Province, Land Area and Percentage Distribution, 1951 to 2017 Censuses

Region/Province	Area Sq. km	Population (In thousand)					
		1951	1961	1972	1981	1998	2017*
Pakistan	796096	33740	42880	65309	84254	132352	207774
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Islamabad	906	96	118	238	340	805	2006
	(0.1)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	(1.0)
Balochistan	347190	1167	1353	2429	4332	6566	12344
	(43.6)	(3.5)	(3.2)	(3.7)	(5.1)	(5.0)	(6.0)
Khyber Pakhtunkhwa	74521	4557	5731	8389	11061	17744	30523
	(9.4)	(13.5)	(13.4)	(12.8)	(13.1)	(13.4)	(15.0)
Punjab	205345	20541	25464	37607	47292	73621	110012
	(25.8)	(60.9)	(59.4)	(57.6)	(56.1)	(55.6)	(53.0)
Sindh	140914	6048	8367	14156	19029	30440	47886
	(17.7)	(17.9)	(19.5)	(21.7)	(22.6)	(23.0)	(23.0)
FATA	27220	1332	1847	2491	2199	3176	5001
	(3.4)	(3.9)	(4.3)	(3.8)	(2.6)	(2.4)	(2.0)

Source: - Pakistan Bureau of Statistics
Note: -   Percentage distribution is given in parenthesis   * Provisional data of Census 2017

Table A-01-a: Population of Pakistan by Region/Province, Land Area and Percentage Distribution 2013-2018

Region/Province	Area Sq. km	Population					
		2013	2014	2015	2016	2017 *	2018
Pakistan	796096	184349	188019	191708	195390	207774	212821
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
Islamabad	906	1401	1441	1479	4730	2006	2107
	(0.11)	(0.76)	(0.77)	(0.77)	(2.42)	(1.00)	(1.00)
Punjab	205344	100174	102005	103837	105670	110012	112380
	(25.8)	(54.3)	(54. 3)	(54.2)	(54.16)	(53.0)	(52.8)
Sindh	140914	44080	45032	45988	46960	47886	49054
	(17.7)	(23.9)	(24.0)	(24.0)	(24.03)	(23.0)	(23.0)
Khyber Pakhtunkhwa	74521	24788	25308	25836	26360	30523	31418
	(9.4)	(13.4)	(13.5)	(13.5)	(13.49)	(15.0)	(14.8)
Balochistan	347190	9495	9717	9942	10160	12344	17291
	(43.6)	(5.2)	(5.2)	(5.2)	(5.19)	(6.0)	(8.1)
FATA	27220	4410	4516	4623	1510	5001	5123
	(3.4)	(2.4)	(2.4)	(2.4)	(0.77)	(2.0)	(2.4)

Source: - i.   Pakistan Bureau of Statistics ii.   National Instiutue for Populaltion Studies (NIPS)
Note:-   Percentage distribution is given in parenthesis
* Provisional data of Census 2017

Table A-02: Population Density by Region/Province, 1951 to 2017 Censuses

(Persons/Sq. Km.)

Region / Province	1951	1961	1972	1981	1998	2017 *
Pakistan	42	54	82	106	166	261
Islamabad Federal Capital Area	106	130	262	376	889	2214
Balochistan	3	4	7	12	19	536
Khyber Pakhtunkhwa	61	77	113	148	238	410
Punjab	100	124	183	230	358	536
Sindh	43	59	100	135	216	340
F.A.T.A	49	68	92	81	117	184

Source: - Pakistan Bureau of Statistics
* Provisional data of Census 2017

Table A-02-a: Population Density by Region/Province, 2013-2018

(Persons/Sq. Km.)

Region/Province	2013	2014	2015	2016	2017 *	2018
Pakistan	232	236	241	245	261	267
Islamabad	1546	1591	1632	5221	2214	2326
Punjab	488	497	506	515	536	547
Sindh	313	320	326	333	340	348
Khyber Pakhtunkhwa	333	340	347	354	410	422
Balochistan	27	28	29	29	36	50
FATA	162	166	170	55	184	188

Source: National Institute of Population Studies (NIPS) Islamabad (Projection).
* Provisional data of Census 2017

Table A-03: Percentage Distribution of Population (10 years and over) by Marital Status Pakistan and Provinces, 2017-18

Region/Province	Marital status				
	Total	Never Married	Married	Widow/Widower	Divorced
Pakistan					
Both Sexes	100	42.25	53.46	3.94	0.34
Male	100	47.38	50.19	2.17	0.26
Female	100	37.03	56.79	5.75	0.43
Balochistan					
Both Sexes	100	42.87	55.92	1.18	0.03
Male	100	48.93	50.36	0.71	0.01
Female	100	35.30	62.88	1.77	0.05
Khyber Pakhtunkhwa					
Both Sexes	100	43.81	52.44	3.63	0.12
Male	100	50.89	47.38	1.65	0.09
Female	100	37.17	57.20	5.48	0.15
Punjab					
Both Sexes	100	41.27	53.64	4.58	0.50
Male	100	45.57	51.31	2.73	0.39
Female	100	37.10	55.91	6.38	0.61
Sindh					
Both Sexes	100	43.47	53.19	3.16	0.17
Male	100	49.04	49.31	1.53	0.13
Female	100	37.07	57.66	5.05	0.22

Source**:-** Labour Force Survey, PBS

Table A-04: Population (10 years and above) by Age, Sex and Literacy 2017-18

Age group (Years)	Population			Literates		
	Both sexes	Male	Female	Both sexes	Male	Female
10 & above	147913333	74626651	73286681	92100227	54127769	37972458
10-14	25664115	13732677	11931438	19939187	11365269	8573918
15-19	22000589	11665917	10334672	16938972	9619194	7319778
20-24	17903365	8526593	9376771	12595576	6727238	5868339
25-29	15439352	7005530	8433822	9810880	5216375	4594505
30-34	12827411	6017048	6810364	7800433	4450353	3350080
35-39	12213907	5865581	6348326	6982646	4194120	2788526
40-44	9666160	4813995	4852165	5068867	3312723	1756143
45-49	8747159	4332039	4415120	4047098	2672989	1374109
50-54	6939399	3681799	3257600	3042841	2126319	916521
55-59	5394025	2799214	2594811	2170493	1533370	637124
60 & above	11117850	6186258	4931592	3703234	2909819	793415
Age group (Years)	Literacy Ratio					
	Both sexes		Male		Female	
10 & above	62.3		72.5		51.8	
10-14	77.7		82.8		71.9	
15-19	77.0		82.5		70.8	
20-24	70.4		78.9		62.6	
25-29	63.5		74.5		54.5	
30-34	60.8		74.0		49.2	
35-39	57.2		71.5		43.9	
40-44	52.4		68.8		36.2	
45-49	46.3		61.7		31.1	
50-54	43.8		57.8		28.1	
55-59	40.2		54.8		24.6	
60 & above	33.3		47.0		16.1	

Source :- Labour Force Survey, PBS

Table A-05: Percentage Distribution of Total Population and That of 10 Years Age and Over by Age, Sex, Area and Nature of Activities, 2017-18

Economic Activity	Total Population			Civilian Labour Force			Out of Labour Force		
	Both Sex	Men	Women	Both Sex	Men	Women	Both Sex	Men	Women
All Areas									
Total (All Ages)									
Total I(10 Years&above)	100.00	50.45	49.55	44.28	34.30	9.98	55.72	16.15	39.57
10-14	17.35	9.28	8.07	1.43	0.91	0.52	15.92	8.37	7.55
15-19	14.87	7.89	6.99	4.84	3.76	1.09	10.03	4.13	5.90
20-24	12.10	5.76	6.34	6.35	4.87	1.48	5.75	0.89	4.86
25-29	10.44	4.74	5.70	5.96	4.55	1.41	4.48	0.19	4.29
30-34	8.67	4.07	4.60	5.22	3.99	1.23	3.46	0.08	3.38
35-39	8.26	3.97	4.29	5.10	3.90	1.20	3.16	0.07	3.09
40-44	6.54	3.25	3.28	4.12	3.20	0.92	2.41	0.05	2.36
45-49	5.91	2.93	2.98	3.63	2.85	0.78	2.28	0.08	2.20
50-54	4.69	2.49	2.20	2.96	2.39	0.57	1.73	0.10	1.63
55-59	3.65	1.89	1.75	2.15	1.74	0.41	1.50	0.16	1.34
60-64	2.88	1.57	1.31	1.30	1.09	0.22	1.58	0.49	1.09
65 Years & Above	4.63	2.61	2.03	1.22	1.06	0.17	3.41	1.55	1.86
Rural Areas									
Total (All Ages)									
Total I(10 Years&above)	100.00	49.80	50.20	47.14	34.29	12.86	52.86	15.52	37.34
10-14	18.51	9.95	8.56	1.97	1.19	0.78	16.54	8.76	7.78
15-19	15.11	7.96	7.16	5.78	4.29	1.48	9.34	3.66	5.68
20-24	11.65	5.37	6.28	6.52	4.77	1.75	5.13	0.61	4.53
25-29	10.21	4.45	5.77	6.02	4.30	1.72	4.19	0.15	4.05
30-34	8.37	3.80	4.57	5.23	4.73	1.50	3.14	0.07	3.07
35-39	8.01	3.80	4.21	5.28	3.73	1.55	2.73	0.07	2.66
40-44	6.30	3.03	3.27	4.16	2.98	1.18	2.14	0.05	2.09
45-49	5.78	2.85	2.94	3.79	2.77	1.02	1.99	0.08	1.92
50-54	4.60	2.42	2.18	3.11	2.32	0.79	1.49	0.09	1.40
55-59	3.59	1.87	1.72	2.30	1.74	0.56	1.29	0.13	1.16
60-64	2.85	1.50	1.35	1.48	1.18	0.30	1.37	0.33	1.05
65 Years & Above	5.01	2.81	2.20	1.51	1.29	0.22	3.50	1.52	1.98
Urban Areas									
Total (All Ages)									
Total I(10 Years&above)	100.00	51.49	48.51	39.71	34.33	5.38	60.29	17.16	43.13
10-14	15.50	8.22	7.28	0.56	0.46	0.10	14.93	7.76	7.18
15-19	14.49	7.78	6.71	3.35	2.89	0.46	11.14	4.89	6.26
20-24	12.83	6.39	6.44	6.08	5.04	1.04	6.74	1.34	5.40
25-29	10.80	5.20	5.59	5.86	5.95	0.91	4.93	0.25	4.69
30-34	9.16	4.50	4.66	5.19	4.41	0.78	3.97	0.09	3.88
35-39	8.66	4.23	4.43	4.80	4.17	0.64	3.85	0.06	3.79
40-44	6.91	3.62	3.29	4.06	3.57	0.50	2.85	0.05	2.79
45-49	6.12	3.06	3.06	3.38	2.98	0.40	2.74	0.08	2.66
50-54	4.83	2.60	2.23	2.72	2.50	0.23	2.11	0.10	2.00
55-59	3.74	1.93	1.81	1.90	1.73	0.17	1.84	0.19	1.65
60-64	2.93	1.69	1.25	1.02	0.94	0.08	1.91	0.75	1.16
65 Years & Above	4.04	2.28	1.75	0.77	0.69	0.08	3.27	1.60	1.68

Source:- Labour Force Survey, PBS

Table A-06: Population (10 years and above) by Age groups, Sex and Marital Status for Urban and Rural Areas, 2017-18

Age Group (Years)	Sex	Marital Status				
		Total	Never married	Married	Widowed	Divorced
All Areas						
10 Years and Over	Both Sexes	100	42.25	53.46	3.94	0.34
	Male	100	47.38	50.19	2.17	0.26
	Female	100	37.03	56.79	5.75	0.43
10-14	Both Sexes	100	99.65	0.32	0.02	0.01
	Male	100	99.72	0.26	0.02	-
	Female	100	99.57	0.40	0.02	0.01
15-19	Both Sexes	100	92.72	7.19	0.03	0.06
	Male	100	97.45	2.53	0.02	-
	Female	100	87.39	12.46	0.04	0.12
20-24	Both Sexes	100	59.36	40.25	0.10	0.28
	Male	100	75.38	24.33	0.11	0.18
	Female	100	44.80	54.73	0.10	0.37
25-29	Both Sexes	100	24.50	74.63	0.40	0.47
	Male	100	36.14	63.19	0.35	0.32
	Female	100	14.84	84.14	0.43	0.59
30-34	Both Sexes	100	9.05	89.77	0.55	0.62
	Male	100	13.31	85.99	0.25	0.45
	Female	100	5.30	93.12	0.82	0.77
35-39	Both Sexes	100	3.41	94.44	1.43	0.72
	Male	100	4.30	94.42	0.59	0.69
	Female	100	2.59	94.46	2.20	0.75
40-44	Both Sexes	100	1.97	94.86	2.63	0.54
	Male	100	2.23	96.26	1.08	0.43
	Female	100	1.71	93.47	4.17	0.65
45-49	Both Sexes	100	1.32	92.87	5.18	0.63
	Male	100	1.39	96.34	1.63	0.65
	Female	100	1.26	89.47	8.66	0.61
50-54	Both Sexes	100	1.16	90.66	7.79	0.39
	Male	100	1.18	95.45	3.04	0.33
	Female	100	1.14	85.24	13.17	0.45
55-59	Both Sexes	100	0.71	84.92	13.83	0.53
	Male	100	0.69	93.14	5.78	0.38
	Female	100	0.73	76.05	22.52	0.70
60-64	Both Sexes	100	1.29	78.49	19.84	0.37
	Male	100	0.92	88.18	10.53	0.37
	Female	100	1.75	66.83	31.05	0.37
65 and above	Both Sexes	100	0.82	60.11	38.73	0.35
	Male	100	0.87	75.97	22.95	0.20
	Female	100	0.74	39.70	59.03	0.53

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Table A-06:   Population (10 years and above) by Age groups, Sex and Marital Status for Urban and Rural Areas, 2017-18

Age Group (Years)	Sex	Marital Status				
		Total	Never married	Married	Widowed	Divorced
Urban Area						
10 Years and Over	Both Sexes	100	43.49	52.16	4.00	0.35
	Male	100	48.17	49.54	2.00	0.29
	Female	100	38.51	54.94	6.13	0.41
10-14	Both Sexes	100	99.75	0.22	0.01	0.01
	Male	100	99.84	0.15	0.01	-
	Female	100	99.65	0.31	0.01	0.03
15-19	Both Sexes	100	95.87	4.09	0.01	0.03
	Male	100	98.94	1.05	-	-
	Female	100	92.32	7.60	0.02	0.06
20-24	Both Sexes	100	69.26	30.38	0.05	0.30
	Male	100	83.57	16.19	0.01	0.24
	Female	100	55.06	44.47	0.09	0.37
25-29	Both Sexes	100	31.29	67.93	0.33	0.45
	Male	100	44.52	54.81	0.27	0.41
	Female	100	18.98	80.14	0.39	0.49
30-34	Both Sexes	100	12.26	86.52	0.48	0.75
	Male	100	17.80	81.46	0.26	0.48
	Female	100	6.91	91.40	0.68	1.00
35-39	Both Sexes	100	3.70	94.11	1.36	0.82
	Male	100	5.07	93.49	0.66	0.79
	Female	100	2.40	94.71	2.03	0.85
40-44	Both Sexes	100	2.35	94.85	2.44	0.36
	Male	100	2.82	96.22	0.58	0.38
	Female	100	1.83	93.34	4.48	0.35
45-49	Both Sexes	100	1.60	92.30	5.64	0.46
	Male	100	1.48	96.66	1.28	0.58
	Female	100	1.73	87.94	9.99	0.34
50-54	Both Sexes	100	1.41	90.37	7.85	0.37
	Male	100	1.68	94.99	2.98	0.36
	Female	100	1.09	84.99	13.53	0.39
55-59	Both Sexes	100	0.66	83.40	15.51	0.43
	Male	100	0.65	93.24	5.80	0.30
	Female	100	0.67	72.95	25.81	0.57
60-64	Both Sexes	100	1.40	77.14	20.97	0.48
	Male	100	0.69	88.33	10.45	0.53
	Female	100	2.37	62.00	35.21	0.43
65 and above	Both Sexes	100	0.96	56.43	42.28	0.32
	Male	100	0.92	75.00	23.96	0.12
	Female	100	1.01	32.26	66.14	0.59

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Table A-06: Population (10 years and above) by Age groups, Sex and Marital Status for Urban and Rural Areas, 2017-18

Age Group (Years)	Sex	Marital Status				
		Total	Never married	Married	Widowed	Divorced
Rural Area						
10 Years and Over	Both Sexes	100	41.48	54.27	3.91	0.34
	Male	100	46.87	50.61	2.28	0.24
	Female	100	36.14	57.91	5.52	0.44
10-14	Both Sexes	100	99.60	0.38	0.02	0.07
	Male	100	99.66	0.31	0.03	-
	Female	100	99.52	0.45	0.02	-
15-19	Both Sexes	100	90.83	9.05	0.04	0.07
	Male	100	96.53	3.43	0.04	-
	Female	100	84.50	15.31	0.04	0.15
20-24	Both Sexes	100	52.55	47.04	0.14	0.27
	Male	100	69.29	30.38	0.19	0.14
	Female	100	38.22	61.31	0.10	0.37
25-29	Both Sexes	100	20.02	79.05	0.44	0.48
	Male	100	30.02	69.32	0.41	0.28
	Female	100	12.32	86.56	0.46	0.66
30-34	Both Sexes	100	6.86	92.00	0.61	0.53
	Male	100	9.98	89.35	0.25	0.42
	Female	100	4.27	94.21	0.90	0.62
35-39	Both Sexes	100	3.21	94.66	1.47	0.65
	Male	100	3.77	95.07	0.54	0.62
	Female	100	2.71	94.30	2.31	0.68
40-44	Both Sexes	100	1.71	94.86	2.76	0.66
	Male	100	1.78	96.29	1.45	0.48
	Female	100	1.64	93.55	3.98	0.84
45-49	Both Sexes	100	1.13	93.25	4.87	0.74
	Male	100	1.32	96.12	1.86	0.69
	Female	100	0.95	90.47	7.79	0.79
50-54	Both Sexes	100	1.00	90.84	7.76	0.40
	Male	100	0.84	95.77	3.08	0.32
	Female	100	1.17	85.39	12.94	0.49
55-59	Both Sexes	100	0.75	85.91	12.74	0.60
	Male	100	0.72	93.07	5.77	0.44
	Female	100	0.78	78.10	20.34	0.78
60-64	Both Sexes	100	1.22	79.36	19.12	0.29
	Male	100	1.07	88.08	10.60	0.25
	Female	100	1.39	69.63	28.64	0.34
65 and above	Both Sexes	100	0.74	61.97	36.93	0.36
	Male	100	0.85	76.46	22.44	0.25
	Female	100	0.60	43.41	55.48	0.51

Source: Labour Force Survey, PBS

Table A-07: Employed Population (10 years and above) by Major Occupation, Sex, Broad Age Group and Rural/Urban Areas 2017-18

Occupation group	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
	1	2	3	4	5	6	7
All Area							
All Occupations	61709276	14271189	4563071	18834260	30850900	8454969	39305869
Managers	1411705	103897	6437	110334	1173622	62747	1236369
Professionals	3146130	304531	401595	706126	1717490	640720	2358210
Technicians and Associate professionals	2378372	398660	44972	443632	1644945	190146	1835091
Clerical Support workers	868213	166228	8148	174376	657819	11825	669644
Service and sale workers	10039946	2883457	93135	2976592	6254916	249845	6504761
Skilled agricultural Forestry and fishery workers	19527058	3307609	1964214	5271823	7214434	5044580	12259013
Craft and related trade warders	8985325	2438810	849684	3288494	4341563	1064298	5405861
Plant and machine operator	4261882	1062516	19297	1081813	3054786	26023	3080809
Elementary occupations	11090646	3605481	1175589	4781070	4791326	1164785	5956110

Occupation group	60 Years and above		
	Male	Female	Both Sexes
	8	9	10
All Occupations	3048065	521082	3569148
Managers	64599	403	65002
Professionals	79340	2455	81795
Technicians and Associate professionals	92165	7484	99649
Clerical Support workers	24192	0	24192
Service and sale workers	537041	21553	558594
Skilled agricultural Forestry and fishery workers	1616959	379262	1996221
Craft and related trade warders	257437	33533	290969
Plant and machine operator	99260	0	99260
Elementary occupations	277073	76393	353466

Table A-07: Employed Population (10 years and above) by Major Occupation, Sex, Broad Age Group and Rural/Urban Areas 2017-18

Occupation group	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
	1	2	3	4	5	6	7
Urban Area							
All Occupations	20959585	4824521	814890	5639411	12725479	1634684	14360163
Managers	1052828	68016	2494	70510	888289	42178	930467
Professionals	1851105	170527	247881	418408	968309	413728	1382037
Technicians and Associate professionals	1485503	242792	24931	267722	1061804	94899	1156703
Clerical Support workers	589918	104894	8148	113042	450662	7985	458648
Service and sale workers	5614535	1615167	62950	1678116	3480725	134362	3615087
Skilled agricultural Forestry and fishery workers	1025117	182371	48092	230463	515223	161587	676810
Craft and related trade warders	4476458	1198768	260689	1459457	2430074	433883	2863956
Plant and machine operator	1896150	413428	10506	423934	1403256	13619	1416875
Elementary occupations	2967970	828559	149200	977759	1527137	332442	1859579

Occupation group	60 Years and above		
	Male	Female	Both Sexes
	8	9	10
All Occupations	886230	73780	960011
Managers	51448	403	51851
Professionals	48205	2455	50660
Technicians and Associate professionals	53594	7484	61077
Clerical Support workers	18229	0	18229
Service and sale workers	311668	9664	321332
Skilled agricultural Forestry and fishery workers	101518	16326	117844
Craft and related trade warders	139263	13782	153045
Plant and machine operator	55341	0	55341
Elementary occupations	106965	23667	130632

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Table A-07: Employed Population (10 years and above) by Major Occupation, Sex, Broad Age Group and Rural/Urban Areas 2017-18

Occupation group	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
	1	2	3	4	5	6	7
Rural Area							
All Occupations	40749692	9446668	3748181	13194848	18125421	6820285	24945706
Managers	358878	35881	3943	39824	285333	20569	305902
Professionals	1295025	134004	153714	287718	749181	226992	976173
Technicians and Associate professionals	892869	155869	20041	175910	583141	95246	678387
Clerical Support workers	278294	61334	0	61334	207157	3840	210996
Service and sale workers	4425411	1268290	30186	1298476	2774190	115483	2889674
Skilled agricultural Forestry and fishery workers	18501941	3125237	1916122	5041360	6699211	4882992	11582204
Craft and related trade warders	4508867	1240042	588995	1829037	1911490	630415	2541905
Plant and machine operator	2365731	649088	8791	657879	1651530	12404	1663934
Elementary occupations	8122676	2776922	1026388	3803311	3264188	832343	4096531

Occupation group	60 Years and above		
	Male	Female	Both Sexes
	8	9	10
All Occupations	2161835	447302	2609137
Managers	13151	0	13151
Professionals	31134	0	31134
Technicians and Associate professionals	38572	0	38572
Clerical Support workers	5963	0	5963
Service and sale workers	225373	11889	237262
Skilled agricultural Forestry and fishery workers	1515441	362937	1878377
Craft and related trade warders	118174	19751	137925
Plant and machine operator	43919	0	43919
Elementary occupations	170108	52726	222834

Source:- Labour Force Survey, PBS

Table A-08: Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, All Areas 2017-18

Major Industry Division	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
Total employed persons	61709276	14271189	4563071	18834260	30850900	8454969	39305869
Agriculture, forestry and fishing	37955126	4638516	2958576	7597092	8312520	5723680	14036200
Mining and quarrying	142595	36919	732	37650	101820	0	101820
Manufacturing	9905357	2673260	919805	3593065	4796976	1200420	5997396
Electricity, gas steam and air condition supply	251866	25970	0	25970	216692	3382	220073
Water supply, Sewerage, Waste management & remediation activity	196133	38927	793	39721	149686	2333	152019
Construction	4697565	1561700	17383	1579082	2954787	12665	2967452
Wholesale & retail trade, repair of motor vehicles, motorcycles	9206908	2782239	42994	2825233	5724112	140842	5864954
Transportation & Storage	3501092	865150	2848	867998	2530278	7634	2537912
Accommodation and food services activities	1218264	407073	14315	421388	718038	20879	738916
Information and Communication	319658	57346	2507	59853	245713	8129	253842
Financial and insurance activities	326277	48634	2283	50916	248073	13541	261613
Real estate activities	283099	49270	0	49270	218081	1313	219393
Professional scientific and technical activities	327161	45748	1442	47190	261193	3648	264841
Administrative and support service activities,	329751	69779	0	69779	234955	2993	237948
Pubic Administration and defence compulsory social security education	1539391	173984	16401	190386	1305349	26814	1332163
Education	2497925	202465	354733	557198	1300090	611567	1911656
Human health and social work activities	959739	135127	40988	176115	504949	240736	745785
Arts, Entertainment & recreation	111732	35550	2245	37795	64878	2699	67577
Other services activities	1294544	316344	63670	380014	743300	93587	836887
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	827224	107187	121357	228545	207283	335240	542524
Activities extraterritorial organizations and bodies	18845	-	-	-	12128	2869	14997

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Table A-08: Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, All Areas 2017-18

Major Industry Division	60 Years and above		
	Male	Female	Both Sexes
Total employed persons	3048065	521082	3569148
Agriculture, forestry and fishing	1706059	414797	2120856
Mining and quarrying	3125	0	3125
Manufacturing	272025	42871	314896
Electricity, gas steam and air condition supply	5823	0	5823
Water supply, Sewerage, Waste management & remediation activity	4394	0	4394
Construction	151031	0	151031
Wholesale & retail trade, repair of motor vehicles, motorcycles	498918	17803	516721
Transport, storage	95183	0	95183
Accommodation and food services activities	56489	1471	57960
Information and Communication	5561	403	5963
Financial and insurance activities	13747	0	13747
Real estate activities	14436	0	14436
Professional scientific and technical activities	15130	0	15130
Administrative and support service activities,	19878	2146	22023
Public Administration and Defence	16848	0	16842
Pubic Administration and defence compulsory social security education	16842	0	16842
Education	26045	3026	29071
Human health and social work activities	28989	8951	37940
Arts, Entertainment & recreation	6360	0	6360
Other services activities	76501	1141	77642
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	27681	28475	56155
Activities extraterritorial organizations and bodies	3849	0	3849

Table A-08: Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, Urban Areas 2017-18

Major Industry Division	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
Total employed persons	20959585	4824521	814890	5639411	12725479	1634684	14360163
Agriculture, forestry and fishing	1269186	262680	85958	348639	598032	194690	792721
Mining and quarrying	15850	2284	0	2284	13566	0	13566
Manufacturing	5358721	1385362	297238	1682600	2986095	507818	3493912
Electricity, gas steam and air condition supply	160175	20771	0	20771	130199	3382	133581
Water supply, Sewerage, Waste management & remediation activity	107895	23192	793	23985	80709	1299	82008
Construction	1375523	389982	2839	392821	910906	2983	913890
Wholesale & retail trade, repair of motor vehicles, motorcycles	5318129	1553987	23397	1577384	3381239	57331	3438570
Transport, storage	1533771	301645	1279	302925	1169202	1232	1170434
Accommodation and food services activities	661380	202964	8412	211376	399241	13615	412856
Information and Communication	261139	44266	2507	46773	205108	7641	212748
Financial and insurance activities	239339	33646	2283	35929	185448	8197	193645
Real estate activities	210589	35266	0	35266	163006	1313	164318
Professional scientific and technical activities	199048	23278	871	24149	163029	259	163288
Administrative and support service activities,	208176	51321	0	51321	142580	1978	144557
Pubic Administration and defence compulsory social security education	920868	87903	10534	98437	790272	21784	812056
Education	1319639	95181	222969	318149	595768	384609	980378
Human health and social work activities	556894	76697	24110	100807	297120	131740	428860
Arts, Entertainment & recreation	63605	20266	2245	22510	35525	1810	37335
Other services activities	622958	146358	40636	186994	345055	61798	406853
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	540217	67473	88820	156294	123612	228337	351949
Activities extraterritorial organizations and bodies	16485	0	0	0	9767	2869	12636

Table A-08: Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, Urban Areas 2017-18

Major Industry Division	60 Years and above		
	Male	Female	Both Sexes
Total employed persons	886230	73780	960011
Agriculture, forestry and fishing	109070	18755	127826
Mining and quarrying	0	0	0
Manufacturing	161244	20965	182209
Electricity, gas steam and air condition supply	5823	0	5823
Water supply, Sewerage, Waste management & remediation activity	1901	0	1901
Construction	68813	0	68813
Wholesale & retail trade, repair of motor vehicles, motorcycles	294372	7803	302175
Transport, storage	60412	0	60412
Accommodation and food services activities	36055	1092	37148
Information and Communication	1215	403	1617
Financial and insurance activities	9765	0	9765
Real estate activities	11005	0	11005
Professional scientific and technical activities	11611	0	11611
Administrative and support service activities,	10151	2146	12297
Public Administration and Defence Pubic Administration and defence compulsory social security education	10376	0	10376
Education	18657	2455	21112
Human health and social work activities	19786	7440	27227
Arts, Entertainment & recreation	3760	0	3760
Other services activities	29111	0	29111
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	19253	12721	31974
Activities extraterritorial organizations and bodies	3849	0	3849

Table A-08: Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, Rural Areas 2017-18

Major Industry Division	Total Employed population	Less than 25 Years			26-59 Years		
		Male	Female	Both Sexes	Male	Female	Both Sexes
Total employed persons	40749692	9446668	3748181	13194848	18125421	6820285	24945706
Agriculture, forestry and fishing	22484963	4375835	2872618	7248453	7714488	5528991	13243479
Mining and quarrying	126746	34635	732	35367	88254	0	88254
Manufacturing	4546635	1287898	622567	1910465	1810882	692602	2503484
Electricity, gas steam and air condition supply	91691	5199	0	5199	86492	0	86492
Water supply, Sewerage, Waste management & remediation activity	88239	15735	0	15735	68977	1033	70011
Construction	3322042	1171718	14544	1186262	2043880	9682	2053562
Wholesale & retail trade, repair of motor vehicles, motorcycles	3888780	1228253	19597	1247850	2342873	83511	2426384
Transport, storage	1967321	563505	1568	565073	1361076	6402	1367477
Accommodation and food services activities	446884	204109	5903	210012	318797	7264	326060
Information and Communication	58519	13080	0	13080	40605	488	41093
Financial and insurance activities	86938	14988	0	14988	62625	5344	67968
Real estate activities	72510	14004	0	14004	55075	0	55075
Professional scientific and technical activities	128114	22470	571	23041	98164	3389	101553
Administrative and support service activities,	121575	18458	0	18458	92375	1016	93391
Public Administration and Defence Pubic Administration and defence compulsory social security education	618522	86082	5868	91949	515077	5030	520107
Education	1178286	107284	131764	239049	704321	226957	931279
Human health and social work activities	402845	58430	16878	75308	207828	108996	316824
Arts, Entertainment & recreation	48128	15285	0	15285	29354	889	30242
Other services activities	671585	169986	23034	193020	398246	31788	430034
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	287007	39714	32537	72251	83671	106904	190575
Activities extraterritorial organizations and bodies	2360	0	0	0	2360	0	2360

Table A-08: **Working Population (10 years and above) by Industry Status, Sex, Broad Age Group, Rural Areas 2017-18**

Major Industry Division	60 Years and above		
	Male	Female	Both Sexes
Total employed persons	2161835	447302	2609137
Agriculture, forestry and fishing	1596989	396042	1993031
Mining and quarrying	3125	0	3125
Manufacturing	110781	21905	132687
Electricity, gas steam and air condition supply	0	0	0
Water supply, Sewerage, Waste management & remediation activity	2493	0	2493
Construction	82219	0	82219
Wholesale & retail trade, repair of motor vehicles, motorcycles	204546	10000	214546
Transport, storage	34771	0	34771
Accommodation and food services activities	20434	378	20812
Information and Communication	4346	0	4346
Financial and insurance activities	3982	0	3982
Real estate activities	3430	0	3430
Professional scientific and technical activities	3519	0	3519
Administrative and support service activities,	9726	0	9726
Public Administration and Defence Pubic Administration and defence compulsory social security education	6466	0	6466
Education	7388	571	7959
Human health and social work activities	9202	1511	10713
Arts, Entertainment & recreation	2601	0	2601
Other services activities	47390	1141	48531
Activities of households as employers & undifferentiated goods & services producing activities of household for own use	8427	15754	24181
Activities extraterritorial organizations and bodies	0	0	0

Source:- Labour Force Survey, PBS

Table A-09: Percentage Distribution of Households by Housing Tenure PSLM 2014-15 and 2018-19

Region & Province	Households by housing tenure				
	Own	Rent	Free	Subsidized Rent	Total
PSLM 2014-15					
Pakistan	**84**	**8**	**6**	**1**	**100**
Punjab	85	7	7	1	100
Sindh	81	11	6	2	100
Khyber Pakhtunkhwa	87	7	5	2	100
Balochistan	88	6	5	1	100
Urban Areas					
Punjab	75	17	6	2	100
Sindh	73	19	4	4	100
Khyber Pakhtunkhwa	71	22	3	5	100
Balochistan	77	18	2	3	100
Rural Areas					
Punjab	90	3	7	0	100
Sindh	91	1	8	0	100
Khyber Pakhtunkhwa	90	4	5	1	100
Balochistan	92	2	6	0	100
PSLM 2018-19					
Pakistan	**84**	**10**	**5**	**1**	**100**
Punjab	84	9	6	1	100
Sindh	82	12	5	1	100
Khyber Pakhtunkhwa *	86	7	6	2	100
Balochistan	87	8	4	1	100
Urban Areas					
Punjab	73	20	5	2	100
Sindh	71	21	6	2	100
Khyber Pakhtunkhwa *	69	25	3	3	100
Balochistan	75	19	4	2	100
Rural Areas					
Punjab	91	3	6	1	100
Sindh	95	1	3	0	100
Khyber Pakhtunkhwa *	89	4	6	1	100
Balochistan	92	3	4	1	100

Source:- Pakistan Social and Living Standards Measurement Survey, PBS.
Note: Households having the housing tenure indicated expressed as a percentage of the total number of households. Total may not add to 100 because of rounding.
*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-10: Percentage Distribution of Households by Material Used for Walls PSLM, 2014-15 and 2018-19

Region & Province	Households by Material Used for Walls				
	Burnt Bricks/ Blocks	Mud Bricks/ Mud	Wood/ Bamboo	Other	Total
PSLM 2014-15					
Pakistan	**79.15**	**15.85**	**1.45**	**3.54**	**100.00**
Punjab	89.85	9.23	0.16	0.76	100.00
Sindh	72.06	22.57	4.62	0.76	100.00
Khyber Pakhtunkhwa	61.18	15.61	0.56	22.64	100.00
Balochistan	30.32	63.67	1.51	4.50	100.00
Urban Areas					
Punjab	98.41	1.37	0.08	0.15	100.00
Sindh	96.49	2.84	0.57	0.10	100.00
Khyber Pakhtunkhwa	89.53	6.84	0.05	3.57	100.00
Balochistan	67.13	31.40	0.09	1.38	100.00
Rural Areas					
Punjab	85.56	13.18	0.20	1.06	100.00
Sindh	42.90	46.11	9.45	1.55	100.00
Khyber Pakhtunkhwa	54.74	17.61	0.67	26.98	100.00
Balochistan	16.56	75.73	2.04	5.67	100.00
PSLM 2018-19					
Pakistan	**81.6**	**14.5**	**0.9**	**3.0**	**100.00**
Punjab	93.3	6.0	0.2	0.5	100.00
Sindh	73.1	23.5	3.3	0.1	100.00
Khyber Pakhtunkhwa *	62.9	20.3	0.2	16.6	100.00
Balochistan	33.2	59.0	0.8	7.0	100.00
Urban Areas	**95.5**	**3.5**	**0.3**	**0.7**	**100.00**
Punjab	97.8	1.3	0.2	0.7	100.00
Sindh	95.8	3.5	0.7	0.0	100.00
Khyber Pakhtunkhwa *	88.6	7.8	0.1	3.5	100.00
Balochistan	65.6	33.0	0.1	1.2	100.00
Rural Areas	**73.1**	**21.2**	**1.3**	**4.4**	**100.00**
Punjab	90.5	8.8	0.2	0.5	100.00
Sindh	46.5	47.0	6.3	0.1	100.00
Khyber Pakhtunkhwa *	57.8	22.8	0.3	19.2	100.00
Balochistan	20.4	69.2	1.0	9.3	100.00

Source:- Pakistan Social and Living Standards Measurement Survey, PBS 2018-19
Note: Categories "Other" consists of stone and anything other than Burnt Bricks/Blocks, Mud Bricks/Mud & wood/Bamboo. Total may not add to 100 because of rounding.
*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-11: Percentage Distribution of Households by Material Used for Roof PSLM 2014-15 and 2018-19

Region & Province	Households by Material Used for Roof				
	RCC/ RBC	Wood/ Bamboo	Sheet/ Iron Cement	Other	T-Iron/Gardar
PSLM 2014-15					
Pakistan	**29.96**	**26.52**	**3.94**	**0.89**	**38.70**
Punjab	28.48	18.85	1.38	1.39	49.90
Sindh	34.46	29.55	6.67	0.09	29.23
Khyber Pakhtunkhwa	34.95	41.72	10.29	0.51	12.53
Balochistan	6.96	68.07	3.06	0.19	21.72
Urban Areas	**57.33**	**8.65**	**5.10**	**0.43**	28.49
Punjab	57.02	8.72	0.74	0.72	32.80
Sindh	59.32	5.04	10.91	0.11	24.63
Khyber Pakhtunkhwa	65.53	20.32	4.06	0.23	9.85
Balochistan	21.09	30.73	5.99	0.04	41.16
Rural Areas	**13.90**	**37.70**	**3.25**	**1.15**	44.65
Punjab	14.17	23.93	1.70	1.72	58.47
Sindh	4.80	58.79	1.62	0.07	34.72
Khyber Pakhtunkhwa	28.00	46.59	11.70	0.58	13.13
Balochistan	1.68	82.03	1.96	0.24	14.07
PSLM 2018-19					
Pakistan	**33.3**	**22.9**	**3.0**	**0.8**	**40.1**
Punjab	34.9	13.1	1.3	1.2	49.5
Sindh	32.2	31.0	3.4	0.1	33.3
Khyber Pakhtunkhwa *	36.3	36.9	9.7	0.2	17.0
Balochistan	9.1	63.2	2.0	0.3	25.4
Urban Areas	**60.2**	**7.1**	**2.7**	**0.5**	**29.5**
Punjab	64.0	5.7	1.5	0.7	28.0
Sindh	57.1	5.2	4.6	0.2	32.9
Khyber Pakhtunkhwa *	63.9	16.5	3.1	0.2	16.3
Balochistan	19.8	30.6	2.8	**0.5**	46.3
Rural Areas	**16.8**	**32.5**	**3.2**	1.0	**46.5**
Punjab	17.3	17.5	1.2	1.5	62.5
Sindh	3.1	61.2	1.9	0.1	33.7
Khyber Pakhtunkhwa *	30.7	41.0	11.0	0.3	17.1
Balochistan	4.9	75.9	1.7	0.3	17.2

Source:- Pakistan Social and Living Standards Measurement Survey, PBS
Note: Total may not add to 100 because of rounding.
*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-12: Percentage Distribution of Households by Fuel Used for Lighting PSLM 2014-15 and 2018-19

Region & Province	Fuel Used for Lighting				
	Electricity	Gas/ Oil	Wood/Candle	Other	Total
PSLM 2014-15					
Pakistan	**93.45**	**4.00**	**0.77**	**1.79**	**100.00**
Punjab	94.82	3.74	0.54	0.89	100.00
Sindh	91.28	4.09	1.21	3.43	100.00
Khyber Pakhtunkhwa	96.20	1.10	0.20	2.50	100.00
Balochistan	80.73	15.12	2.64	1.51	100.00
Urban Areas	**98.70**	**0.96**	**0.18**	**0.17**	**100.00**
Punjab	98.55	1.10	0.26	0.09	100.00
Sindh	98.90	0.73	0.10	0.27	100.00
Khyber Pakhtunkhwa	99.20	0.69	0.00	0.11	100.00
Balochistan	97.59	1.93	0.18	0.30	100.00
Rural Areas	**90.37**	**5.78**	**1.11**	**2.74**	**100.00**
Punjab	92.96	5.07	0.68	1.29	100.00
Sindh	82.18	8.10	2.52	7.20	100.00
Khyber Pakhtunkhwa	95.51	1.20	0.25	3.04	100.00
Balochistan	74.42	20.06	3.56	1.96	100.00
PSLM 2018-19					
Pakistan	**91.2**	**1.0**	**0.7**	**7.0**	**100.00**
Punjab	95.5	1.1	0.4	3.1	100.00
Sindh	86.2	0.7	1.6	11.5	100.00
Khyber Pakhtunkhwa*	87.0	0.4	0.1	12.4	100.00
Balochistan	75.0	4.1	2.7	18.2	100.00
Urban Areas	**98.3**	**0.3**	**0.1**	**1.3**	**100.00**
Punjab	99.0	0.3	0.1	0.6	100.00
Sindh	97.7	0.1	0.3	1.9	100.00
Khyber Pakhtunkhwa*	96.3	0.1	0.1	3.5	100.00
Balochistan	94.9	1.0	0.2	3.9	100.00
Rural Areas	**86.8**	**1.5**	**1.1**	**10.6**	**100.00**
Punjab	93.3	1.5	0.6	4.6	100.00
Sindh	72.7	1.4	3.1	22.8	100.00
Khyber Pakhtunkhwa*	85.1	0.5	0.1	14.2	100.00
Balochistan	67.2	5.3	3.7	23.8	100.00

Source:- Pakistan Social and Living Standards Measurement Survey, PBS
Total may not add to 100 because of rounding.
*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-13: Percentage Distribution of Households by Fuel Used for Cooking PSLM 2014-15 and 2018-19

Region & Province	Fuel Used for Cooking				
	Gas	Wood/Sticks	Oil	Other	Total
PSLM 2014-15					
Pakistan	**41.34**	**51.17**	**0.08**	**7.42**	**100.00**
Punjab	38.80	51.06	0.07	10.07	100.00
Sindh	56.34	38.29	0.05	5.33	100.00
Khyber Pakhtunkhwa	25.87	72.61	0.10	1.43	100.00
Balochistan	24.71	73.14	0.32	1.83	100.00
Urban Areas	**84.84**	**13.30**	**0.09**	**1.71**	**100.00**
Punjab	82.38	15.01	0.08	2.53	100.00
Sindh	90.74	8.29	0.03	0.95	100.00
Khyber Pakhtunkhwa	80.29	18.73	0.16	0.82	100.00
Balochistan	59.65	37.73	0.39	2.23	100.00
Rural Areas	**15.83**	**73.37**	**0.08**	**10.72**	**100.00**
Punjab	16.94	69.14	0.06	13.86	100.00
Sindh	15.30	74.08	0.07	10.55	100.00
Khyber Pakhtunkhwa	13.49	84.86	0.09	1.56	100.00
Balochistan	11.65	86.38	0.29	1.68	100.00
PSLM 2018-19					
	Electricity	Gas/Oil	Wood/Charcoal	Other	Total
Pakistan	**0.1**	**47.5**	**36.1**	**16.3**	**100.00**
Punjab	0.0	50.2	27.3	22.5	100.00
Sindh	0.1	55.0	36.1	8.8	100.00
Khyber Pakhtunkhwa	0.2	27.7	66.5	5.5	100.00
Balochistan	0.0	37.5	53.2	9.3	100.00
Urban Areas	**0.1**	**86.3**	**11.4**	**2.2**	**100.00**
Punjab	0.1	87.8	9.7	2.5	100.00
Sindh	0.1	87.5	10.7	1.7	100.00
Khyber Pakhtunkhwa	0.5	75.0	22.8	1.7	100.00
Balochistan	0.0	70.8	27.5	1.8	100.00
Rural Areas	**0.1**	**23.8**	**51.2**	**25.0**	**100.00**
Punjab	0.0	27.6	37.9	34.5	100.00
Sindh	0.0	16.9	65.9	17.2	100.00
Khyber Pakhtunkhwa	0.2	18.2	75.3	6.3	100.00
Balochistan	0.0	24.4	63.3	12.3	100.00

Source:- Pakistan Social and Living Standards Measurement Survey PBS
             Total may not add to 100 because of rounding
*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-14: Percentage Distribution of Households by Main Source of Drinking Water- Pakistan and Provinces 2013-14, 2014-15 & 2018-19

Province and water source	2013-14 PSLM			2014-15 PSLM			2018-19 PSLM		
	Urban	Rural	Overall	Urban	Rural	Overall	Urban	Rural	Overall
Pakistan									
Tap Water	52	11	26	51	13	27	31.0	10.8	18.5
Hand Pump	8	41	29	7	38	26	6.2	34.3	23.6
Motor Pump	28	34	32	27	36	33	30.1	38.2	35.1
Dug Well	1	5	3	1	5	3	0.6	4.3	2.9
Others	11	10	10	14	9	11	32.1	12.4	19.9
Total	100	100	100	100	100	100	100.0	100.0	100.0
Balochistan									
Tap Water	*68*	*19*	*32*	69	20	33	53.2	18.6	28.3
Hand Pump	*4*	*9*	*8*	3	8	7	1.7	8.0	6.2
Motor Pump	9	15	13	11	21	18	15.1	29.4	25.4
Dug Well	1	13	10	1	15	11	1.2	11.4	8.6
Others	19	44	36	17	36	30	28.8	32.6	31.5
Total	100	100	100	100	100	100	100.0	100.0	100.0
Khyber Pakhtunkhwa *									
Tap Water	49	27	31	55	30	35	46.6	18.9	23.6
Hand Pump	8	15	14	7	14	12	6.3	13.9	12.6
Motor Pump	35	19	22	32	25	26	38.4	34.8	35.4
Dug Well	4	12	11	4	9	8	5.9	11.5	10.5
Others	3	27	23	3	22	18	2.9	20.9	17.9
Total	100	100	100	100	100	100	100.0	100.0	100.0
Punjab									
Tap Water	36	7	17	35	9	18	17.0	8.4	11.6
Hand Pump	9	42	31	7	38	28	5.8	33.1	22.8
Motor Pump	41	48	46	40	47	45	37.2	48.8	44.5
Dug Well	1	1	1	1	1	1	.1	.6	.4
Others	13	2	6	18	4	9	39.8	9.1	20.7
Total	100	100	100	100	100	100	100.0	100.0	100.0
Sindh									
Tap Water	73	8	42	69	7	41	50.4	7.6	30.7
Hand Pump	8	69	37	8	63	33	7.3	69.6	36.0
Motor Pump	10	7	8	11	12	11	17.4	8.4	13.3
Dug Well	1	7	3	1	8	4	.5	6.6	3.3
Others	10	10	9	11	9	10	24.4	7.8	16.8
Total	100	100	100	100	100	100	100.0	100.0	100.0

Source**:-** Pakistan Social & Living Standards Measurement, PBS

Notes: 1.   Household obtaining water from the source indicated expressed as a percentage of the total number of households.

2.   Categories: "Tap water" consists of both tap water inside and outside house. "Hand pump" includes hand pumps both inside and outside. "Motor pump" includes motor pump and tube well outside the house; "Dug well" includes well open and well closed both inside and outside the house; and "Other" includes public standpipe (supplied by tanker), water sell, canal, river, spring, stream, pond and other.

3.   Total may not add to 100 because of rounding.

*   In PSLM survey 2018-19 FATA has been included in KP.

Table A-15: Percentage Distribution of Housing Units by Type of Toilet Used and Urban/Rural

Province and Sanitation System	2013-14 PSLM			2014-15 PSLM			2018-19 PSLM		
	Urban	Rural	Overall	Urban	Rural	Overall	Urban	Rural	Overall
Pakistan									
Flush	98	61	74	97	60	73	98	70	80
Non-Flush	1	13	9	2	20	13	1	12	8
No Toilet	1	26	17	1	21	13	1	18	12
Total	100	100	100	100	100	100	100	100	100
Balochistan									
Flush	82	25	39	78	14	31	81	25	41
Non-Flush	17	41	34	22	68	65	17	51	41
No Toilet	1	35	26	0	18	13	2	23	17
Total	100	100	100	100	100	100	100	100	100
Khyber Pakhtunkhwa *									
Flush	95	68	73	97	71	76	96	80	83
Non-Flush	4	10	9	2	15	12	3	10	9
No Toilet	1	22	18	1	14	12	1	9	8
Total	100	100	100	100	100	100	100	100	100
Punjab									
Flush	99	73	81	98	70	77	99	80	87
Non-Flush	0	1	1	1	6	5	0	1	1
No Toilet	1	26	18	1	24	16	1	18	12
Total	100	100	100	100	100	100	100	100	100
Sindh									
Flush	98	29	65	97	31	67	98	37	69
Non-Flush	2	47	23	3	53	26	2	38	18
No Toilet	1	24	12	1	16	7	1	25	12
Total	100	100	100	100	100	100	100	100	100

Source:- Pakistan Social & Living Standards Measurement Survey, 2018-19 PBS

Notes:- 1. Households having the type of toilets indicated, expressed as a percentage of the total number of households.
2. "Flush" consists of flush connected to public sewerage, flush connected to septic tank and flush to open drain while "Non-Flush" contains dry raised latrine, dry pit latrine and other.
3. Totals may not add up to 100 because of rounding.

* In PSLM survey 2018-19 FATA has been included in KP.

Table A-16: Percentage Distribution of Civilian Labour Force

Year	Total			Employed			Unemployed		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
1991-92	28.11	23.66	4.45	26.47	22.65	3.82	1.64	1.01	0.63
1992-93	27.86	23.72	4.15	26.54	22.83	3.72	1.32	0.89	0.43
1993-94	27.88	23.59	4.29	26.53	22.67	3.86	1.35	0.92	0.43
1994-95	27.46	23.80	3.66	25.98	22.82	3.16	1.48	0.98	0.50
1996-97	28.69	24.34	4.35	26.93	23.31	3.62	1.75	1.03	0.73
1997-98	29.38	24.85	4.53	27.65	23.80	3.85	1.73	1.05	0.68
1999-00	28.97	24.45	4.52	26.70	22.96	3.74	2.27	1.48	0.78
2001-02	29.61	24.84	4.76	27.16	23.18	3.98	2.45	1.66	0.79
2003-04	30.41	24.97	5.44	28.07	23.32	4.75	2.34	1.64	0.69
2006-07	31.82	25.24	6.58	30.13	24.10	6.03	1.69	1.14	0.55
2007-08	32.17	25.36	6.81	30.50	24.27	6.23	1.67	1.09	0.58
2008-09	32.81	25.59	7.22	31.02	24.45	6.57	1.79	1.14	0.65
2009-10	32.98	25.49	7.50	31.15	24.36	6.79	1.83	1.12	0.71
2010-11	32.83	25.21	7.62	30.88	23.93	6.95	1.95	1.28	0.67
2012-13	32.88	25.30	7.57	30.83	23.94	6.89	2.05	1.36	0.68
2013-14	32.28	24.32	7.76	30.35	23.27	7.08	1.92	1.25	0.68
2014-15	32.27	24.52	7.75	30.35	23.30	7.05	1.92	1.22	0.69
2017-18	31.70	24.56	7.14	29.86	23.31	6.55	1.84	1.25	0.59

Source: - Labour Force Surveys, PBS.

Table A-17: Percentage Distribution of Population by Economic Category

Economic category	2012-13	2013-14	2014-15	2017-18
All Areas				
Total population	100.00	100.00	100.00	100.00
Civilian labour force	45.70	45.45	45.22	44.28
i) Employed	42.84	42.74	42.54	41.72
ii) Un-employed	2.85	2.71	2.69	2.57
Not in civilian labour force	54.30	54.55	54.78	55.72
Urban Areas				
Total population	100.00	100.00	100.00	100.00
Civilian labour force	39.70	39.01	38.66	39.71
i) Employed	36.20	35.58	35.57	36.84
ii) Un-employed	3.51	3.13	3.08	2.87
Not in civilian labour force	60.30	60.99	61.34	60.29
Rural Areas				
Total population	100.00	100.00	100.00	100.00
Civilian labour force	49.02	49.19	49.01	47.14
i) Employed	46.53	46.73	46.55	44.77
ii) Un-employed	2.49	2.46	2.46	2.37
Not in civilian labour force	50.98	50.81	50.99	52.86

Source**: -** Labour Force Surveys, PBS.

Table A-18: Percentage Distribution of Employed Persons by Major Industry Division

Major Industry Division	2009-10	2010-11	2012-13	2013-14*	2014-15	2017-18
All Areas						
Total employed persons	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture, forestry, hunting and fishing	44.96	45.05	43.71	43.48	38.49	42.27
Mining and quarrying	0.10	0.15	0.14	0.20	0.23	0.16
Manufacturing	13.24	13.65	14.06	14.16	16.05	15.33
Electricity, gas, water and sanitary services	.80	0.48	0.75	0.78	0.73	0.79
Construction	6.74	6.95	7.44	7.33	7.61	7.31
Wholesale, retail trade, restaurants & hotels	16.28	16.15	15.94	16.15	14.92	14.64
Transport, storage and communication	5.24	5.11	5.48	5.45	8.17	7.01
Financing, insurance, real estate and business services	1.48	1.42	1.72	1.74	0.99	0.96
Community, social and personal services	11.08	11.00	9.79	9.55	9.34	8.64
Activities not adequately described	0.09	0.03	0.96	1.16	3.47	2.88
Urban						
Total employed persons	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture, forestry, hunting and fishing	6.00	6.35	6.10	5.71	6.06	5.17
Mining and quarrying	0.13	0.12	0.12	0.08	0.08	0.10
Manufacturing	23.80	25.14	26.15	24.22	25.57	26.06
Electricity, gas, water and sanitary services	1.50	0.94	1.50	1.51	1.28	1.56
Construction	6.57	6.63	6.75	7.82	6.56	7.78
Wholesale, retail trade, restaurants & hotels	31.01	30.79	29.85	30.54	25.37	26.87
Transport, storage and communication	7.94	7.74	8.07	8.07	11.72	10.86
Financing, insurance, real estate and business services	3.80	3.62	3.97	3.84	2.15	2.43
Community, social and personal services	19.09	18.60	15.69	15.65	15.59	14.62
Activities not adequately described	0.18	0.07	1.91	2.53	5.63	4.03
Rural						
Total employed persons	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture, forestry, hunting and fishing	61.64	61.40	59.93	60.34	55.18	58.62
Mining and quarrying	0.09	0.16	0.15	0.25	0.31	0.18
Manufacturing	8.72	8.80	8.84	9.67	11.16	10.60
Electricity, gas, water and sanitary services	0.51	0.28	0.44	0.45	0.44	0.46
Construction	6.81	7.09	7.74	7.11	8.15	7.10
Wholesale, retail trade, restaurants & hotels	9.96	9.97	9.95	9.73	9.54	9.25
Transport, storage and communication	4.00	4.00	4.36	4.28	6.34	5.31
Financing, insurance, real estate and business services	0.95	0.51	0.77	0.79	0.39	0.32
Community, social and personal services	7.65	7.77	7.28	6.82	6.13	6.01
Activities not adequately described	0.05	0.02	0.54	0.55	2.36	2.15

Source: - Labour Force Surveys, PBS.
  * = Adjusted according to PSCO-1994.

Table A-19: Percentage Distribution of Employed Persons by Major Occupational Group

Major Occupational Group	2010-11	2012-13*	2013-14*	2014-15	2017-18
All Areas					
Total employed persons	100.00	100.00	100.00	100.00	100.00
Legislators, Senior Officials and Managers	1.25	2.39	1.66	2.19	2.29
Professionals	1.79	4.22	4.55	4.73	5.10
Technicians and Associate Professionals	5.32	3.03	2.79	3.13	3.85
Clerks	1.25	1.37	1.52	1.51	1.41
Service Workers and Shop and Market Sale Workers	4.74	15.55	16.10	15.70	16.27
Skilled Agricultural and Fishery Workers	37.60	37.69	37.84	37.13	31.64
Craft and related Trade Workers	14.98	14.67	14.10	13.54	14.56
Plant and Machine Operators and Assemblers	3.51	4.77	5.98	6.24	6.91
Elementary (Unskilled) Occupations	19.56	16.32	15.47	15.83	17.97
Urban Areas					
Total employed persons	100.00	100.00	100.00	100.00	100.00
Legislators, Senior Officials and Managers	21.60	5.61	3.89	5.29	5.02
Professionals	3.73	7.20	8.18	8.48	8.83
Technicians and Associate Professionals	9.48	6.43	5.42	5.73	7.09
Clerks	2.77	3.09	3.47	3.35	2.81
Service Workers and Shop and Market Sale Workers	8.75	27.41	29.74	27.53	26.79
Skilled Agricultural and Fishery Workers	5.50	5.31	5.01	4.67	4.89
Craft and related Trade Workers	25.42	24.86	21.84	22.31	21.36
Plant and Machine Operators and Assemblers	4.96	7.17	9.24	9.15	9.05
Elementary (Unskilled) Occupations	17.79	12.92	13.90	13.51	14.16
Rural Areas					
Total employed persons	100.00	100.00	100.00	100.00	100.00
Legislators, Senior Officials and Managers	6.88	0.99	0.66	0.82	0.88
Professionals	0.97	2.93	2.93	3.08	3.18
Technicians and Associate Professionals	3.57	1.56	1.62	1.99	2.19
Clerks	0.61	0.63	0.64	0.71	0.68
Service Workers and Shop and Market Sale Workers	3.04	10.44	10.32	10.48	10.86
Skilled Agricultural and Fishery Workers	51.16	51.66	52.50	51.44	45.40
Craft and related Trade Workers	10.57	10.27	10.64	9.68	11.06
Plant and Machine Operators and Assemblers	2.90	3.73	4.52	4.96	5.81
Elementary (Unskilled) Occupations	20.31	17.79	11.17	16.85	19.93

Source: - Labour Force Surveys, PBS. * = Adjusted according to PSCO-1994

Table A-20:   Land   Utilization   Statistics

(Million Hectares)

Year	Total area	Total area reported col (3+4+5+6)	Forest area	Not available for cultivation	Culturable waste
	1	2	3	4	5
2004-05	79.61	57.22	4.02	24.39	8.94
2005-06	79.61	57.22	4.03	22.87	8.21
2006-07	79.61	57.05	4.19	22.70	8.30
2007-08	79.61	57.08	4.21	23.41	8.19
2008-09	79.61	57.21	4.21	23.47	8.15
2009-10	79.61	57.10	4.23	23.49	8.09
2010-11	79.61	57.64	4.26	23.37	7.98
2011-12	79.61	57.73	4.26	23.25	8.19
2012-13	79.61	57.78	4.26	23.06	8.21
2013-14	79.61	57.99	4.55	25.56	8.27
2014-15	79.61	57.99	4.54	25.54	8.30
2015-16	79.61	58.11	3.99	25.53	8.27
2016-17	79.61	58.00	4.47	25.54	8.37
2017-18 *	79.61	58.02	4.47	25.60	8.29
2018-19 P *	79.61	58.02	4.47	25.60	8.29

year	Cultivated area Col (6+7)	Current fallow	Net area sown	Area sown more than once	Total cropped Area COL(8+9)
	6	7	8	9	10
2004-05	22.13	6.86	15.27	7.51	22.78
2005-06	22.11	6.72	15.39	7.74	23.13
2006-07	21.87	5.72	16.16	7.40	23.56
2007-08	21.17	4.93	16.25	7.51	23.85
2008-09	21.21	4.93	16.28	7.52	23.80
2009-10	21.26	5.20	16.20	7.67	23.87
2010-11	22.03	6.38	15.65	7.07	22.72
2011-12	22.04	7.05	14.98	7.52	22.51
2012-13	22.26	7.04	15.22	7.34	22.56
2013-14	22.06	6.52	15.40	7.76	23.16
2014-15	23.24	6.66	15.46	7.82	23.26
2015-16	22.74	10.14	15.62	7.90	24.04
2016-17	22.11	9.51	15.59	7.46	23.01
2017-18 *	22.15	9.40	15.74	7.75	23.45
2018-19 P *	22.15	9.40	15.74	7.75	23.45

Source:-   Agricultural Statistics of Pakistan, M/o National Food Security and Research
    * =   Pakistan Economic Survey
    P = Provisional

TableA-21: Area under Agricultural Crops

(000 Hectares)

Year	Rice	Wheat	Bajra	Jowar	Maize	Barley	Gram	Masoor
2008-09	2962.6	9046.0	469.7	262.7	1052.1	86.0	1080.6	30.9
2009-10	2883.1	9131.6	475.7	248.4	935.1	84.1	1066.9	24.0
2010-11	2365.3	8900.7	548.4	228.8	974.3	77.1	1053.8	26.1
2011-12	2571.2	8649.8	458.3	213.5	1087.3	72.2	1007.5	22.8
2012-13	2308.8	8660.2	461.1	198.4	1059.5	73.1	992.0	19.3
2013-14	2789.2	9199.3	474.6	197.8	1168.5	70.9	949.6	18.2
2014-15	2890.6	9203.9	462.0	194.8	1142.5	67.7	942.7	17.7
2015-16	2739.5	9223.7	486.0	273.6	1191.2	66.1	939.5	17.9
2016-17	2724.0	8972.5	469.1	256.4	1348.4	60.9	971.1	14.7
2017-18	2900.6	8797.2	488.8	255.4	1250.8	57.6	976.6	13.4
2018-19*	2810.0	8678.0	456.0	241.0	1374.0	57.0	943.0	12.9

Year	Mash	Mung	Other Pulses	Rapeseed & mustard	Sesamum	Linseed	Groundnut	Cotton
2008-09	27.6	219.7	9.1	244.9	90.6	5.4	92.8	2819.9
2009-10	24.1	183.3	14.1	190.4	79.8	4.2	87.4	3105.7
2010-11	24.3	137.4	12.1	216.5	77.6	4.0	82.9	2689.1
2011-12	24.5	140.8	7.4	215.5	75.7	3.8	95.6	2834.5
2012-13	23.2	135.9	5.5	238.9	70.9	3.7	81.7	2878.8
2013-14	20.9	130.9	4.5	242.6	81.7	3.3	93.8	2805.7
2014-15	20.8	127.4	4.8	213.9	82.7	3.0	96.3	2961.3
2015-16	19.2	146.2	4.8	206.1	78.6	3.1	91.9	2901.9
2016-17	17.1	178.8	3.9	190.5	80.0	2.9	91.1	2488.9
2017-18	15.4	162.5	3.5	213.5	82.7	2.9	99.1	2700.3
2018-19*	14.1	163.2	3.2	237.0	83.3	2.6	98.6	2373.0

Contd…

Table A-21: Area under Agricultural Crops

(000 Hectares)

Year	Jute	Sunhemp	Sugar cane	Tobacco	Potato	Vegetables	Garlic	Chilies
2008-09	0	1.2	1,029.40	49.7	145.0	253.0	8.4	73.8
2009-10	0	1.0	943.0	55.8	138.5	249.8	6.8	74.7
2010-11	0	0.8	987.6	51.3	159.4	252.1	6.6	63.6
2011-12	0	0.7	1057.5	45.8	184.9	251.2	6.7	27.4
2012-13	0	0.5	1128.8	49.8	172.8	256.0	7.0	63.6
2013-14	0	0.2	1172.5	48.9	159.8	267.7	7.5	62.7
2014-15	0	0.08	1140.5	53.8	170.5	249.4	7.9	62.5
2015-16	0	0.06	1131.6	52.7	177.4	274.5	8.1	64.8
2016-17	0	0.02	1217.6	47.2	179.6	272.7	8.3	63.7
2017-18	0	0.008	1341.8	46.4	194.0	324.8	7.8	65.2
2018-19*	-	-	1102.0	45.0	195.6	266.7	8.1	47.3
Year	**Onion**	**Citrus Fruit**	**Banana**	**Mango**	**Apple**	**Guava**	**Grapes**	**Dates**
2008-09	129.6	199.9	36.0	170.1	113.0	62.2	15.3	90.7
2009-10	124.7	198.4	34.8	173.7	111.6	62.1	15.3	90.6
2010-11	147.6	194.5	29.6	171.9	110.6	64.0	15.3	90.1
2011-12	129.7	194.0	22.5	172.4	110.4	66.7	15.4	93.1
2012-13	126.0	194.0	27.2	170.4	103.4	67.5	15.3	89.6
2013-14	143.9	193.7	28.0	171.3	105.2	42.7	15.3	89.5
2014-15	130.5	192.8	28.2	170.8	100.2	65.5	15.3	91.2
2015-16	135.9	192.2	28.7	170.2	96.9	70.0	14.8	97.1
2016-17	137.9	186.9	29.3	169.5	95.3	67.7	14.8	97.8
2017-18	149.0	183.8	30.1	167.9	95.1	64.9	14.8	98.4
2018-19*	148.3	181.7	29.7	158.6	82	56.2	15.7	98.8

Source**:-** Agricultural Statistics of Pakistan, M/o National Food Security and Research
* = Pakistan Economic Survey

Table A-22: Production of Agricultural Crops

(000 Tones)

Year	Rice	Wheat	Bajra	Jowar	Maize	Barley	Gram	Masoor
2008-09	6,952.0	24,032.9	296.4	164.5	3,593.0	81.5	740.5	14.4
2009-10	6,882.7	23,310.8	293.0	154.1	3,261.5	71.4	561.5	10.9
2010-11	4,823.3	25,213.8	346.0	141.2	3,707.0	71.2	496.0	13.3
2011-12	6,160.4	23,473.4	304.1	137.1	4,338.3	65.7	284.4	11.1
2012-13	5,535.9	24,211.4	310.6	122.7	4,220.1	67.2	751.3	9.8
2013-14	6,798.1	25,979.4	301.0	122.9	4,944.2	66.5	399.0	8.1
2014-15	7,002.8	25,086.1	294.5	114.6	4,936.8	62.8	379.2	7.0
2015-16	6,801.3	25,633.1	299.5	160.5	5,337.0	60.6	286.2	7.8
2016-17	6,849.3	26,673.6	304.7	148.4	6,134.2	58.0	329.7	7.6
2017-18	7,449.8	25,076.1	339.0	152.7	5,901.6	55.1	323.4	6.3
2018-19 *	7,202.0	24,349.0	350.0	149.0	6,826.0	55.0	447.0	6.0

Year	Mash	Mung	Other Pulses	Rapeseed & mustard	Sesamum	Linseed	Groundnut	Cotton (000 bales)
2008-09	13.6	157.4	6.1	198.9	41.0	3.6	85.5	11,819.0
2009-10	10.7	118.7	7.6	162.2	33.4	2.7	53.2	12913.4
2010-11	11.3	76.2	6.8	191.9	31.1	2.8	67.8	11460.1
2011-12	10.9	93.1	5.0	178.8	30.3	2.6	87.9	13595.0
2012-13	10.9	90.0	4.2	220.3	29.2	2.6	81.3	13030.7
2013-14	10.2	92.9	3.8	230.7	32.5	2.4	100.8	12768.9
2014-15	9.0	98.8	3.5	215.8	34.3	2.1	86.0	13959.6
2015-16	8.5	102.1	2.8	194.0	31.7	2.2	91.7	9917.4
2016-17	7.2	130.1	3.0	180.4	34.1	2.2	74.7	10670.6
2017-18	7.2	122.1	2.7	209.3	35.2	2.3	86.1	11945.6
2018-19 *	6.9	117.8	2.6	237.0	35.7	1.9	97.3	9861.0

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Table A-22: Production of Agricultural Crops

(000 Tones)

Year	Jute	Sunhemp	Sugar cane	Tobacco	Potato	Vegetables	Garlic	Chillies
2008-09	0.0	0.8	50,045.4	104.9	2,941.3	3,213.9	67.2	187.7
2009-10	0.0	0.7	49372.9	119.3	3141.5	3044.9	57.3	188.8
2010-11	0.0	0.6	55308.5	102.8	3491.8	3132.8	55.3	171.8
2011-12	0.0	0.5	58396.4	97.9	3393.0	3108.2	57.3	54.1
2012-13	3.0	0.4	63749.9	108.3	3785.9	2922.0	60.6	147.2
2013-14	0.0	0.1	67460.1	129.9	2883.8	3127.8	64.5	146.5
2014-15	0.0	0.04	62826.4	30.7	4160.1	2932.0	73.1	139.7
2015-16	0.0	0.03	65482.4	118.8	3962.4	3255.2	70.9	140.0
2016-17	0.0	0	75482.2	113.4	3831.7	3299.6	73.0	142.8
2017-18	0.0	0	83332.8	120.9	4584.3	3314.0	74.5	148.2
2018-19 *	-	-	67174.0	104.0	4869.3	3469.0	75.3	101.6

Year	Onion	Citrus fruits	Banana	Mango	Apple	Guava	Grapes	Dates
2008-09	1,704.1	2,132.2	157.3	1,727.9	441.0	512.3	76.1	566.5
2009-10	1701.1	2150.0	154.8	1845.5	366.4	509.2	64.7	531.2
2010-11	1939.6	1982.2	141.2	1888.5	525.9	546.6	64.4	522.2
2011-12	1692.3	2147.3	98.2	1700.1	598.7	495.2	64.4	557.3
2012-13	1660.8	2001.8	141.3	1680.4	556.4	498.0	64.4	524.6
2013-14	1740.2	2167.7	120.4	1658.6	606.1	500.3	66.2	526.8
2014-15	1671.0	2396.2	118.8	1716.9	617.2	489.1	66.0	537.8
2015-16	1736.4	2344.1	132.2	1635.2	620.4	522.7	65.9	467.7
2016-17	1833.3	2180.1	134.9	1784.1	670.0	547.6	66.3	439.1
2017-18	2119.7	2351.4	135.1	1734.0	649.3	586.1	66.2	540.7
2018-19 *	2079.6	2467.0	136.0	1723.0	544.0	548.0	69.0	447.0

Source**:-**   Agricultural Statistics of Pakistan, M/o National Food Security and Research
      * =   Pakistan Economic Survey

Table A-23: Number of Tube wells by Province

Year	Total	Balochistan	Khyber Pakhtunkhwa	Punjab	Sindh *
2006-07	1025836	32,222	14,382	884,228	95004
2007-08	1016125	34,054	14,412	872,444	95215
2008-09	1069991	33039	14,553	927006	95393
2009-10	1088018	33039	14779	944649	95551
2010-11	1103391	36214	16558	954706	95913
2011-12	997746	42488	17206	841819	96233
2012-13	1220403	42817	17206	1012541	147839
2013-14	1317250	42497	15939	1028424	230390
2014-15	1332870	42497	15939	1044044	230390
2015-16	1357036	42542	17504	1066600	230390
2016-17P	1357036	42542	17504	1066600	230390
2017-18P	1357036	42542	17504	1066600	230390

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research
    * = Commulative
P =   Provisional

Table A-24: Overall Water Availability at Farm Gate

(MAF)

Year/Season	Surface Water		Ground Water				Total
	At Canal Head	At Farm Gate	Public Tube Wells	Private Tube Wells	Scarp T.well	Other Pr.T well	Water Availability
2009-10							
Kharif	69.91	58.43	0.95	20.70	3.50	0.30	83.88
Rabi	26.83	25.06	0.96	19.80	3.50	0.50	49.82
Total	96.74	83.49	1.91	40.50	7.00	0.80	133.70
2010-11							
Kharif	55.79	54.46	0.95	20.70	3.50	0.30	79.91
Rabi	36.33	32.49	.96	19.80	3.50	0.50	57.25
Total	92.12	86.95	1.91	40.50	7.00	0.80	137.16
2011-12							
Kharif	62.93	57.61	0.95	20.70	3.50	0.30	83.06
Rabi	31.53	28.04	0.96	19.80	3.50	0.50	52.80
Total	94.46	85.65	1.91	40.50	7.00	0.80	135.86
2012-13							
Kharif	60.28	56.28	0.95	20.70	3.50	0.30	81.73
Rabi	33.36	31.02	0.96	19.80	3.50	0.50	55.78
Total	93.64	87.30	1.91	40.50	7.00	0.80	137.51
2013-14							
Kharif	68.14	56.28	0.95	20.70	3.50	0.30	81.73
Rabi	34.39	31.02	0.96	19.80	3.50	0.50	55.78
Total	102.53	87.30	1.91	40.50	7.00	0.80	137.51
2014-15							
Kharif	69.27	59.64	NA	21.95	2.50	24.45	84.09
Rabi	33.10	30.95	NA	20.95	2.30	23.55	54.50
Total	102.37	90.59	NA	43.20	4.80	48.0	138.59
2015-16							
Kharif	65.47	52.85	NA	22.50	3.50	26.00	78.85
Rabi	32.90	29.15	NA	21.50	3.50	25.00	54.15
Total	98.37	90.50	NA	44.00	7.00	51.00	133.00
2016-17							
Kharif	NA	55.61	1.00	21.50	3.00	NA	81.11
Rabi	NA	27.09	1.00	20.50	3.00	NA	51.52
Total	101.01	82.70	2.00	42.00	6.00	NA	132.70
2017-18							
Kharif	69.97	56.05	1.50	23.00	3.00	NA	83.55
Rabi	24.15	25.35	1.00	20.50	3.00	NA	49.85
Total	94.12	81.40	2.50	43.50	6.00	NA	133.40
2018-19							
Kharif	59.62	50.87	26.65	22.25	2.90	1.50	77.52
Rabi	24.15	25.35	1.00	20.50	3.00	0.00	49.88
Total	83.77	76.22	27.65	42.75	5.90	1.50	127.40

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

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Table A-25: Production of Chemical Fertilizers

Year	Total	Urea	Ammonium Nitrate	Supper Phosphate	Nitro Phosphate
2008-09	6368	4922	344	178	332
2009-10	6718	5155	383	150	345
2010-11	6797	4994	576	199	298
2011-12	6643	4686	626	165	489
2012-13	5828	4216	401	101	341
2013-14	6765	4932	519	85	472
2014-15	7116	5067	570	78	579
2015-16	8015	5770	647	90	647
2016-17	8245	5915	674	78	703
2017-18	7305	5365	519	66	534
2018-19 *	6123	5958	449	78	444

Source: -   National Fertilizer Development Centre, Islamabad
     *.   Pakistan Economic Survey, 2019-20

Table A-26: Season-Wise Consumption of Fertilizers

(000 Nutrient Tones)

Year	Kharif				Rabi				Total			
	N	P	K	All	N	P	K	All	N	P	K	All
2008	1332	158	15	1505	1580	374	11	1964	2912	532	26	3469
2009	1690	504	8	2202	1722	451	13	2186	3412	955	21	4388
2010	1472	278	16	1765	1729	468	18	2215	3201	746	34	3981
2011	1620	299	12	1931	1448	319	10	1777	3068	618	22	3708
2012	1454	308	9	1771	1562	402	12	1976	3116	710	21	3747
2013	1541	338	10	1888	1729	569	12	2310	3270	907	22	4198
2014	1479	331	14	1824	1722	600	17	2339	3154	958	30	4163
2015	1312	246	11	1569	1527	775	14	2315	2839	1021	25	3884
2016	1512	402	12	1926	1807	847	24	2678	3319	1249	36	4604
2017	1849	544	24	2416	1781	735	29	2545	3630	1279	53	4961
2018	1633	476	26	2135	1727	604	30	2357	3360	1080	56	4492

Source: -   National Fertilizer Development Centre (NDFC), Islamabad
Note: -   Kharif = April to September   Rabi = October to March

Table A-27: Usage of Fertilizers by Crops

(000 Nutrient Tones)

Year	Wheat	Rice	Maize	Cotton	Sugarcane	Others	Total
2008-09	1854.5	222.5	55.6	927.3	296.8	352.4	3709.0
2009-10	2180.2	261.6	65.4	1090.1	348.8	414.2	4360.4
2010-11	1965.8	236.0	59.0	983.0	314.5	373.5	3931.6
2011-12	1930.5	231.7	57.9	965.2	308.9	366.8	3860.9
2012-13	1810.8	217.3	54.3	905.4	.289.7	344.0	3621.5
2013-14 (P)	2044.6	245.3	61.3	1022.3	327.1	388.5	4089.1
2014-15	2158.3	259.0	64.8	1079.2	345.3	410.1	4316.6
2015-16	1849.6	221.9	55.5	924.8	295.9	351.4	3699.2
2016-17	2519.9	302.4	75.6	1259.9	403.2	478.8	5039.9
2017-18	2381.3	285.8	71.4	1190.6	381.0	452.4	4762.5

Source: - National Fertilizer Development Centre (NDFC), Islamabad
(P) = Provisional

Table A-28: Consumption of Pesticides

Year	Quantity (M.T)			Value (Million Rs.)
	Imports	Production	Total	
2008	9,282	29,904	39,186	6,940
2009	5825	34818	40643	7648
2010	10899	62733	73632	13855
2011	13928	35471	49399	9395
2012	5325	1800	7125	3861
2013	15045	42706	57755	11504
2014	13048	58219	71267	14196
2015	20114	119154	139268	23020
2016	22599	154272	176871	30195
2017	18737	187993	206730	43535
2018 (upto 15-08-2018)	18243	134930	153173	37519

Source: - Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table A-29: Estimated Livestock Population

(000 Heads)

Years Cattle → ↓	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 P
Cattle							
1. Bulls 3 years & above	**5374**	**6580**	**5786**	**6004**	**6231**	**6466**	**6709**
a) For breeding	3251	3515	3777	4050	4330	4616	4910
b) For work	2123	3065	2009	1954	1901	1849	1799
2. Cows 3 years & above	**19639**	**20379**	**21147**	**21944**	**22771**	**23630**	**24520**
a) In milk	11299	11725	12167	12625	13101	13595	14108
b) Dry	5791	6009	6235	6471	6714	6968	7230
c) Not yet calved	2549	2645	2744	2848	2955	3067	3182
3. Bulls less than 3 years	6963	7226	7498	7781	8074	8379	8694
4. Cows less than 3 years	6324	6563	6810	7067	7333	7610	7897
Total Cattle	**38300**	**39744**	**41240**	**42796**	**44408**	**46084**	**47821**
Buffaloes							
1. Bulls 3 years & above	**752**	**771**	**794**	**818**	**842**	**867**	**893**
a) For breeding	405	417	430	442	455	469	483
b) For work	344	354	364	375	386	398	410
2.Buffaloes 3 years & above	**19175**	**19661**	**20256**	**20858**	**21478**	**22116**	**22774**
a) In milk	12548	12921	13305	13701	14108	14527	14959
b) Dry	4150	4274	4401	4532	4666	4805	4948
c) Not yet calved	2405	2476	2550	2626	2704	2784	2867
3. Bulls less than 3 years	5777	5949	6125	6307	6495	6688	6887
4. Cows less than 3 years	7926	8162	8405	8654	8912	9176	9450
Total Buffaloes:-	**33555**	**34553**	**35580**	**36637**	**37726**	**38847**	**40004**

Contd…

Table A-29: Estimated Livestock Population

(000 Heads)

Years→ Cattle ↓	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 P
Sheep							
1. Male 1 year & above	4739	4795	4851	4909	4967	5026	4967
2. Female 1 year & above	14932	15109	15288	15469	15652	15837	15652
3. Young stock less than 1 year	9084	9192	9301	9411	9522	9635	9522
Total Sheep:-	**28755**	**29096**	**29440**	**29789**	**30141**	**30498**	**30141**
Goats							
1. Male 1 year & above	7979	8195	8417	8645	8879	9120	9367
2. Female 1 year & above	37585	38604	39650	40724	41828	42961	44125
3. Young stock less than 1 year	19294	19816	20353	20905	21471	22053	22651
Total Goats:-	**64858**	**66615**	**68420**	**70274**	**72178**	**74134**	**76143**
Camels							
1. 3 years & above	764	774	784	794	805	815	826
2. Less than 3 years	244	247	251	254	257	260	264
Total Camels:-	**1008**	**1021**	**1035**	**1048**	**1062**	**1075**	**1090**
Asses							
1. 3 years & above	3973	4046	4121	4198	4275	4354	4435
2. Less than 3 years	880	896	913	930	947	964	982
Total Asses:-	**4853**	**4942**	**5034**	**5128**	**5222**	**5318**	**5417**
Horses							
1. 3 years & above	301	303	304	306	308	310	311
2. Less than 3 years	57	58	58	58	59	59	59
Total Horses:-	**358**	**361**	**362**	**364**	**367**	**369**	**371**
Mules							
1. 3 years & above	158	161	164	167	170	173	176
2. Less than 3 years	18	18	19	19	19	20	20
Total Mules:-	**176**	**179**	**183**	**186**	**189**	**193**	**196**
Poultry							
Total Poultry (Million)	785	855	932	1016	1108	1210	1321

Source: - Agricultural Statistics of Pakistan, M/O National Food Security and Research
P =   Provisional

Table A-30: Estimated Livestock Products

Products	Unit	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 P
Milk production	000 tones	39945	41133	52632	54328	56080	57890	59759
Milk available for human consumption	000 tones	49512	50990	42454	43818	45228	46682	48185
Meat Production								
Beef	000 tones	1830	1888	1951	2017	2085	2155	2227
Mutton	000 tones	643	657	671	686	701	717	732
Poultry meat	000 tones	907	987	1074	1170	1276	1391	1518
Other Product								
Wool (Sheep)	000 tones	43.6	44.1	44.6	45.1	45.5	46.2	46.8
Hair (Goat)	000 tones	24.4	25.1	25.8	26.5	27.2	27.9	28.6
Bones	000 tones	780.5	802.9	827.2	852.3	878.2	904.9	932.5
Fat	000 tones	248.8	255.8	263.3	271.0	279.0	287.3	295.8
Blood	000 tones	61.3	62.2	64.4	66.1	67.8	69.5	71.3
Eggs	Million Nos.	13813	14556	15346	16188	17083	18037	19052
Hides	Million Nos.	14.5	14.8	15.2	15.9	16.4	16.9	17.5
Skins	Million Nos.	50.8	51.9	53.1	54.3	55.5	56.8	58.1
Casings	Million Nos.	15.3	15.8	16.3	16.9	17.5	18.0	18.7
Guts	Million Nos.	51.2	52.4	53.6	54.8	56.1	57.2	58.7

Source: - Agricultural Statistics of Pakistan, M/O National Food Security and Research
P =   Provisional

Table A-31: Estimated Milk Production

(000 Tones)

Years	Cows	Buffaloes	Sheep	Goats	She Camel	Total
2007-08						
Gross Production	14435	26214	35	701	786	42171
Human Consumption	11548	20971	35	701	786	34041
2008-09						
Gross Production	14982	27028	36	719	798	43563
Human Consumption	11985	21622	36	719	798	35160
2009-10						
Gross Production	15546	27848	36	739	808	44977
Human Consumption	12437	22279	36	739	808	36299
2010-11						
Gross Production	16133	28694	36	759	818	45622
Human Consumption	12906	22955	36	759	818	36656
2011-12						
Gross Production	16741	29565	37	779	829	47951
Human Consumption	13393	23652	37	779	829	38690
2012-13						
Gross Production	13897	24370	37	801	840	39945
Human Consumption	17372	30462	37	801	840	49512
2013-14						
Gross Production	14421	25001	38	822	851	41133
Human Consumption	18027	31252	38	822	851	50990
2014-15						
Gross Production	18706	32180	38	845	862	52631
Human Consumption	14965	25744	38	845	862	42454
2015-16						
Gross Production	19412	33137	39	867	873	54328
Human Consumption	15529	26510	39	867	873	43818
2016-17						
Gross Production	20143	34122	39	891	885	56080
Human Consumption	16115	27298	39	891	885	45228
2017-18						
Gross Production	20903	35136	40	915	896	57890
Human Consumption	16722	28109	40	915	896	46682
2018-19						
Gross Production	21691	36180	40	940	908	59759
Human Consumption	17353	28944	40	940	908	48185

Source: - Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table A-32: Estimated Meat and Eggs Production

Years	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
BEEF								
Cattle	877(88)	910(88)	944(94)	980(98)	1017(102)	1055(105)	1095(109)	1132(112)
Buffaloes	887(89)	914(89)	937(89)	966(90)	994(99)	1024(102)	1054(05)	1089(98)
Camels	-	-	6(1)	6(1)	6(1)	6(1)	6(1)	6(1)
Total Beef	1770(178)	1830(178)	1887(184)	1951(189)	2017(202)	2085(208)	2155(215)	2227(211)
Mutton								
Sheep	222(62)	225(62)	228(64)	230(64)	233(65)	236(66)	239(67)	244(69)
Goats	407(114)	418(114)	429(125)	441(130)	453(127)	465(130)	478(134)	488(148)
Total Mutton	629(176)	643(176)	657(189)	671(194)	686(200)	701(196)	717(201)	732(217)
Poultry Meat	834	907	987	1074	1170	1276	1391	1518
Total Meat	3232(353)	3379(363)	3531(373)	3696(383)	3873(402)	4062(404)	4263(416)	4477(428)
EGGS (Million No)	13114	13813	14556	15346	16188	17083	18037	19052

Source**: -** Agricultural Statistics of Pakistan, M/O National Food Security and Research
Note**: -** Figures in parentheses are of edible offal's.

Table A-33: Fish Production

(000 Tones)

Year	Category	Pakistan	Balochistan	Khyber Pakhtunkhwa(a)	Punjab (b)	Sindh
2009	**Inland**	214.5	-	4.0	85.5	125.0
	Marine	480.0	140.0	-	-	340.0
	Total	694.5	140.0	4.0	85.5	465.0
2010	**Inland**	219.2	-	5.0	86.2	128.0
	Marine	485.0	143.0	-	-	342.0
	Total	704.2	143.0	5.0	86.2	470.0
2011	**Inland**	225.4	-	6.0	88.4	131.0
	Marine	487.0	144.0	-	-	343.0
	Total	712.4	144.0	6.0	88.4	474.0
2012	**Inland**	235.0	-	9.0	90.0	136.0
	Marine	490.0	145.0	-	-	345.0
	Total	725.0	145.0	9.0	90.0	481.0
2013	**Inland**	238.0	-	10.0	91.0	137.0
	Marine	491.0	145.5	-	-	345.0
	Total	729.0	145.5	10.0	91.0	483.0
2014	**Inland**	242.0	-	11.0	93.0	138.0
	Marine	493.0	147.0	-	-	346.0
	Total	735.0	147.0	11.0	93.0	484.0
2015	**Inland**	249.0	-	13.0	95.0	141.0
	Marine	498.0	149.0	-	-	349.0
	Total	747.0	149.0	13.0	95.0	490.0
2016	**Inland**	277.0	-	18.0	110.0	149.0
	Marine	511.0	156.0	-	-	355.0
	Total	788.0	156.0	18.0	110.0	504.0
2017	**Inland**	282.0	-	21.0	111.0	150.0
	Marine	515.0	157.0	-	-	358.0
	Total	797.0	157.0	21.0	111.0	508.0
2018	**Inland**	287.0	-	23.0	112.0	152.0
	Marine	520.0	160.0	-	-	360.0
	Total	807.0	160.0	23.0	112.0	512.0
2019	**Inland**	235.3	-	3.3	95.6	136.4
	Marine	384.3	152.2	-	-	232.1
	Total	619.6	152.2	3.3	95.6	368.5

Source**:** - Directorate of Marine Fisheries Karachi

Note: -   (a) & (b) Included Dams

Table A-34: Total Catch of Fish and their Indices

Year	Total Catch of Fish (000 Metric Tons)			Index (Base: 2004 = 100)		
	Total	Inland	Marine	Total	Inland	Marine
2009	531.5	192.8	338.8	96.3	116.5	87.6
2010	533.4	195.5	337.9	96.6	118.1	87.4
2011	533.3	198.6	334.8	96.6	120.0	86.6
2012	550.9	201.9	349.1	99.8	122.0	90.3
2013	556.5	204.8	351.7	100.8	123.7	91.0
2014	563.2	207.6	355.6	102.0	125.4	91.98
2015	568.1	208.6	359.5	102.9	126.0	92.99
2016	573.8	212.3	361.5	103.9	128.3	93.51
2017	618.7	234.9	383.8	112.1	141.9	99.28
2018	619.0	235.0	384.0	112.1	142.0	99.33
2019	619.6	235.3	384.3	112.2	142.2	99.41

Source**:-** Directorate of Marine Fisheries, Karachi

Table A-35: Fishermen Engaged in Marine and Inland Fisheries

Number

Year	Marine			Inland	Grand total
	Karachi and Sindh coasts	Balochistan coast	Total		
2009	106,552	46,335	152,887	173,593	326,480
2010	116,133	48,779	164,912	186,271	351,183
2011	118,437	52,812	171,249	190,261	361,510
2012	120,180	56,887	177,067	192,717	369,784
2013	123,531	56,912	180,443	198,537	378,980
2014	123,856	57,200	181,056	199,326	380,382
2015	124,469	57,411	181,880	202,720	384,600
2016	126,010	57,694	183,704	207,866	391,570
2017	137,171	58,895	196,066	208,102	404,168
2018	139,286	60,322	199,608	209,212	408,820
2019	140,599	61,104	201,703	210,445	412,148

Source: Marine Fisheries Department, Karachi

Table A-36: Number of Fishing Crafts in Pakistan

(Number)

	Punjab	Sindh	KP	Balochistan	Pakistan
2013-14 (E)					
Inland					
Soil boats	6612	2936	-	-	9548
Row boats	524	1784	238	-	2546
Mech.cum-Sail	602	-	98	-	700
Marine					
Soil boats	-	6580	-	62	6642
Trawler	-	3058	-	-	3058
Gilnetter	-	1796	-	1.726	3522
Mech.cum-Sail Boat	-	4689	-	4.752	9441
2014-15					
Inland					
Soil boats	6633	2970	-	-	9603
Row boats	536	1796	245	-	2577
Mech.cum-Sail	612	-	102	-	714
Marine					
Soil boats	-	6589	-	65	6654
Trawler	-	3102	-	-	3102
Gilnetter	-	1801	-	1745	3546
Mech.cum-Sail Boat	-	6695	-	4782	9477
2015-16					
Inland					
Soil boats	6695	2999	-	-	9694
Row boats	556	1804	256	-	2616
Mech.cum-Sail	644	-	113	-	757
Marine					
Soil boats	-	6596	-	69	6665
Trawler	-	3126	-	-	3126
Gilnetter	-	1812	-	1756	3568
Mech.cum-Sail Boat	-	4705	-	4798	9503
2016-17					
Inland					
Soil boats	6702	3010	-	-	9712
Row boats	559	1815	261	-	2635
Mech.cum-Sail	649	-	119	-	768
Marine					
Soil boats	-	6599	-	78	6677
Trawler	-	3130	-	-	3130
Gilnetter	-	1822	-	1786	3608
Mech.cum-Sail Boat	-	4716	-	4812	9528
2017-18					
Inland					
Soil boats	6714	3020	-	-	9734
Row boats	562	1824	267	-	2653
Mech.cum-Sail	653	-	125	-	778
Marine					
Soil boats	-	6605	-	82	6687
Trawler	-	3142	-	-	3142
Gilnetter	-	1828	-	1789	3617
Mech.cum-Sail Boat	-	4721	-	4823	9544

Source:- Mariene Fishereis Department Karachi E=Estimated

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Table A-37: Forest Products of Pakistan

Year	Quantity (000 cub. Meters)			Value (Million Rupees)		
	Timber	Firewood	Total	Timber	Firewood	Total
2008-09	63.92	244.73	308.65	837.11	417.91	1255.02
2009-10	74.20	287.66	361.86	1045.97	170.30	1216.27
2010-11	61.97	423.40	485.37	918.37	186.31	1104.68
2011-12	63.31	252.55	315.86	943.96	25.94	969.90
2012-13	73.74	207.52	281.26	894.88	174.60	1069.48
2013-14	70.81	244.72	315.53	1631.78	377.73	2009.51
2014-15	24.27	99.48	123.75	642.73	285.89	928.62
2015-16	53.25	336.89	390.14	2041.06	422.02	2463.08
2016-17	36.78	293.53	330.31	559.28	347.35	906.63
2017-18	34.63	221.05	255.68	1068.48	582.15	1650.63

Source:- Chief Conservator of Forests, Punjab, Sindh and Khyber Pakhtunkhwa

Table A-38: Uses of Forest Resources (Estimated Wood Consumption in Various End-uses)

(000 Cub. Meters)

Year	Total	Pulp and Paper Industries (a)	Construction (b)	Furniture (b)	Fuel wood (b)	Others (b)
2006	31,762	347	1,657	676	26,459	2,623
2007	34,980	360	1,721	702	29,520	2,677
2008	66,826	898	1,574	804	62,521	1,029
2009	68,280	925	1,625	845	63,822	1,063
2010	69,739	953	1,677	887	65,124	1,098
2011	71,196	980	1,729	929	66,425	1,133
2012	72,652	1,008	1,781	970	67,726	1,167
2013	74,112	1,036	1,834	1,012	69,028	1,202
2014	75,736	1,068	1,894	1,064	70,465	1,245
2015	77,362	1,100	1,955	1,116	71,902	1,289

Source: - Pakistan Forest Institute, Peshawar.
Note: -   (a) The local paper-industry is based on non-woody raw materials, whereas it uses
           Imported wood pulp. The figures are the round wood equivalent of the wood pulp imports.
           (b) Estimated wood consumption in various uses.

Table A-39: Production of Manufacturing Items

Year Production	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
(i) Vegetable Products (a)								
No. of Reporting Factories	87	87	87	87	87	87	75	75
Production (000 Tones)	1103	1139	1185	1185	1241	1280	1417	1386
(ii) Sugar (b)								
No. of Reporting Factories	76	84	84	84	84	84	84	84
Production (000 Tones)	4634	5074	5582	5150	5115	7049	6566	5260
(iii) Tea Blended (c)								
No. of Reporting Factories	5	5	5	5	5	5	5	5
Production (000 Tones)	76	90	102	117	138	149	158	148
(iv) Beverages (c)								
No. of Reporting Factories	53	53	53	48	48	48	48	48
Production (Million Liters)	1813	2079	2552	2956	3137	3565	3605	3439
v) Cigarettes (d)								
No. of Reporting Factories	14	14	14	7	7	7	7	7
Production (Million No.)	61954	67377	64482	62667	53522	34341	59058	60729
(vi) Cotton Textiles (Mills Sector)								
No. of Reporting Mills	433	447	411	411	408	408	408	408
Production of Cotton Cloth (Million sq. meter)	1024	1029	1036	1037	1039	1043	1044	1046
(vii) Jute Textiles								
No. of Reporting Mills	10	10	10	10	10	10	10	10
Total Production (000 Tones)	94	103	102	94	60	74	64	67
(viii) Paper and Board								
No. of Factories of Papers	54	57	57	57	57	57	57	57
Production Paper (000 Tones)	246	232	219	204	233	264	274	261
Production Board (000 Tones)	283	382	466	416	377	405	457	452
(ix) Chemicals								
No. of Reporting Factories	12	2	2	2	2	2	2	2
Soda Ash (a) (Metric Tones)	370743	366238	409148	437106	468507	479718	509753	572066
Caustic Soda (a) (Metric Tones)	179097	182869	167465	183952	225250	223855	270126	246613
Sulphuric Acid (b)(Metric Tones)	100403	89431	85348	70229	75139	55979	48065	49362
Chlorine Gas (b) (Metric Tones)	15770	15495	14960	17355	16397	16316	17156	17528
(x) Chemicals Fertilizers (a)								
No. of Reporting Factories	14	14	14	14	14	14	14	14
Urea (000 Tones)	4470	4215	4930	5073	5847	5913	5405	5958
Super phosphate (000 Tones)	115	79	88	64	89	82	65	78
Ammonium Sulphate	-	-	-	-	-	-	-	-
Ammonium Nitrate(000 Tones)	432	401	519	569	647	665	519	449
Nitro Phosphate(000 Tones)	338	292	447	502	595	630	471	444
Dai Ammonium phosphate(000 Tones)	623	730	693	755	788	802	758	785
(xi) Paints & Varnishes (By weight)								
No. of Reporting Factories	22	22	22	22	22	22	22	22
Production (000 Tones)	23	28	37	49	54	49	55	52

Table A-39: Production of Manufacturing Items

Year → Production ↓	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
(xii) Paints & Varnishes (By Volume)								
No. of Reporting Factories	20	20	20	20	20	20	20	20-
Production (Million Liters)	38	41	43	54	57	49	43	43
(xiii) Cycle Tyres (a)								
No. of Reporting Factories	7	10	10	10	10	10	10	10
Production (000 Nos.)	3431	3429	4038	4633	4205	3930	3942	4584
(xiv) Cycle Tubes (a)								
No. of Reporting Factories	7	10	10	10	10	10	10	10
Production (000 Nos.)	6846	7746	8061	8391	7285	7577	8263	9907
(xv) Motor Tires (a)								
No. of Reporting Factories	5	8	8	8	8	8	8	8
Production (000 Nos.)	7011	7864	8802	9058	9735	9710	10421	10807
(xvi) Motor Tubes (a)								
No. of Reporting Factories	5	8	8	8	8	8	8	8
Production (000 Nos.)	20338	20269	20825	22001	24467	24635	24678	25514
(xvii) Cement (b)								
No. of Reporting Factories	31	23	23	23	23	23	23	23
Production (000 Tonnes)	29557	31055	31418	32185	35432	37022	41148	39922
(xviii) Steel Products (000 Tonnes)								
Coke	193	203	32	276	57	0	0	0
Pig Iron	249	201	89	265	2	0	0	0
Billets	1616	1639	2128	2731	3183	4099	5186	3874
H.R Sheets/Strips/ Plates/Coils	180	137	57	127	0	0	0	0
C.R Sheets/Strips/ Plates/Coils (000 numbers)	26	15	4	3	0	0	0	0
Galvanize Sheets (000 numbers)	0	0	0	0	0	0	0	0
(xix) Sewing Machines (a)								
No. of Reporting Factories	8	8	8	8	8	8	8	8
Production (Nos.)	39603	32876	19834	19272	13465	18290	23481	35658
(xx) Electric Motors (a)								
No. of Reporting Factories	18	19	19	19	19	19	19	19
Production (Nos.)	9126	7539	9906	9013	7319	9206	41793	56819
(xxi) Transformers (a)								
No. of Reporting Factories	10	7	7	7	7	7	7	7
Production (Nos.)	23683	26411	12175	24993	32758	36995	42460	31288

Contd..

Table A-39: Production of Manufacturing Items

Year → Production ↓	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
(xxii) Television								
No. of Reporting Factories	9	9	9	9	9	9	9	9
Production (Nos.)	268801	462938	426600	428164	453205	438869	366838	380690
(xxiii) Electric Bulbs (a)								
No. of Reporting Factories	6	6	6	-	-	-	-	-
Production (000 Nos.)	78981	79743	75106	64623	73915	72394	76440	64301
(xxiv) Electric Tubes (a)								
No. of Reporting Factories	2	2	2	–	-	-	-	-
Production (000 Meters)	1,266	0	0	0	0	0	0	0
(xxv) Manufacture/Assembly of Automobiles(Nos.)								
Cars (a)	154,255	120,332	116,281	152524	179944	186936	217774	209255
Jeeps (4x4) (a)	451	1,475	1,217	1109	773	3530	13364	7525
Light Commercial Vehicles (a)	20,929	14,517	17,477	28189	35836	24265	29055	24453
Trucks (a)	2,597	1,923	2674	4039	5666	7712	9187	6035
Buses (a)	568	522	559	575	1070	1118	784	913
Motorcycles (a)	1,649,532	1,675,071	1,728,137	1777251	2071123	2500650	2825071	2459849
(xxvi) Tractors (a)								
No. of Reporting Factories	-	-	-	-	-	-	-	-
Production (Nos.)	48,152	50,871	34,524	48883	34914	53975	71894	49902
(xxvii) Bicycles (b)								
No. of Reporting Factories	5	5	3	3	3	3	3	3
Production (Nos.)	262096	232979	203669	210931	198966	200218	202168	173515

Source:- 1.   Pakistan Economic Survey
          2.   Monthly Statistical Bulletin, PBS

Table A-40: Mineral Production in Pakistan

<div align="right">（Tones）</div>

Year	Aragonite/ marble	Barytes	Bauxite	Iron Ore	China clay
2008-09	1,144,818	62,997	13,618	320,214	17,169
2009-10	1,064,905	57,166	9,031	447,541	22,769
2010-11	1,132,900	31,836	9,033	329,100	16,055
2011-12	1,750,578	48,510	30,223	384,893	21,555
2012-13	2,360,114	118,471	25,288	412,108	22,917
2013-14	2,919,783	133,658	31,156	197,074	16,191
2014-15	2,815,601	118,773	24,689	328,915	18,951
2015-16	4,746,638	157,858	57,024	432,156	20,726
2016-17	4,906,233	91,711	75,375	501,664	28,710
2017-18	8,813,025	88,847	145,189	677,206	19,483
Year	Chromite	Ebry	Fire clay	Flourite	Fuller's Earth
2008-09	89,739	2,150	389,493	1,261	10,213
2009-10	257,148	-	329,055	290	11,219
2010-11	148,034	-	274,042	3,156	4,180
2011-12	179,203	-	408,187	6,859	6,906
2012-13	136,443	-	454,645	13,344	4,259
2013-14	85,585	-	4,652,451	7,500	6,397
2014-15	101,762	-	404,945	5,962	8,005
2015-16	69,333	-	550,977	9,494	13,601
2016-17	105,238	-	584,478	2,263	18,417
2017-18	97,420	-	841,680	2,777	9,188

<div align="right">Contd.</div>

Table A-40: Mineral Production in Pakistan

(Tones)

Year	Dolomite	Gypsum	Lime stone	Magnesite	Manganese
2008-09	249,918	800,084	33,186,359	2,639	1,254
2009-10	130,408	853,590	37,136,803	5,159	1,655
2010-11	240,111	885,368	32,020,996	4,908	785
2011-12	198,392	1,260,021	35,016,411	5,444	705
2012-13	335,819	1,249,967	38,932,472	6,705	290
2013-14	5,912,918	1,326,437	38,786,733	3,770	5,712
2014-15	-	1,417,007	40, 470,356	4,581	4,890
2015-16	-	1,871,716	46,123,367	35,228	70
2016-17	-	2,079,629	52,149,137	19,656	1,220
2017-18	-	2,475,893	70,818,725	23,596	153

Year	Ochres	Rock Salt	Silica sand	Soap stone	Sulphur
2008-09	56,617	1,917,486	369,773	13,923	25,784
2009-10	55,352	1,943,527	411,262	53,991	26,641
2010-11	36,078	1,953,711	300,501	47,561	27,645
2011-12	42,107	2,135,760	269,545	55,515	25,560
2012-13	37,769	2,159,939	355,771	93,214	20,610
2013-14	32,634	2,223,047	297,988	89,022	35,672
2014-15	33,909	2,136,361	267,911	116,223	19,730
2015-16	68,352	3,552,948	387,044	125,985	14,869
2016-17	86,080	3,534,075	338,457	152,279	23,740
2017-18	75,939	3,653,746	376,168	141,504	22,040

Source:- Pakistan Statistical Year Book-2018

Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Punjab							
Rodho	61,141	49,541	39,145	30,867	27,157	20,136	16,826
Dharian	-	-	-	-	-	-	4,542
Guauri	-	2,145	303,146	251,744	157,443	144,788	69,610
Halini	242,042	182,387	404,578	425,148	282,361	226,435	1,73,195
Halini Deep	-	-	-	70,428	398,062	310,080	2,43,599
Khost	4,064	1,531	-	-	-	-	-
Balkassar	157,339	149,029	138,840	114,310	154,457	126,005	1,11,943
Bela	1,163	1,528	1,096	-	2,369	-	-
Chakral	-	-	-	-	-	-	-
Dhulian	55,927	55,841	54,036	56,132	50,447	45,199	40,923
Domial	31,917	15,295	-	-	-	-	-
Jhandial	-	-	-	-	-	223,804	2,28,481
Joyamair	9,980	4,537	5,238	9,375	8,712	9,316	15,077
Khaur	2,043	1,965	1,958	2,324	6,590	2,442	17,947
Meyal	122,941	114,960	114,124	109,270	106,611	101,630	1,00,297
Minwal	23,784	32,258	15,163	415	28,697	32,376	34,494
Pariwali	231,443	221,405	178,770	141,492	129,090	112,326	99,423
Pindori	133,297	101,484	102,177	88,882	73,854	66,838	65,573
Turkwal	16,033	11,057	9,754	9,071	8,961	8,936	8,252
Baloch	47,124	150,108	41,777	44,585	41,696	-	-
Bhal Syedan	604	3,446	26,758	5,079	2,781	4,353	4,970
Chak Naurang	121,910	114,700	84,749	143,559	124,098	123,406	1,22,804
Dakhni	424,281	393,888	276,379	260,585	255,295	228,457	1,77,000
Dhodak	39,775	24,940	14,948	16,023	12,176	11,177	10,710
Fimkassar	46,285	44,157	38,555	45,241	63,399	56,925	53,185
Kal	145,655	123,332	59,106	161,332	156,670	140,116	1,27,108
MissaKeswal	61,597	27,545	16,488	19,721	33,237	21,008	17,017
Rajian	559,721	598,426	628,310	579,741	945,094	706,878	6,31,378
Sadkal	22,585	17,186	17,630	14,902	17,339	18,395	15,059
Toot	133,251	130,952	121,025	112,939	99,655	90,740	83,486
Bhangali	-	-	-	1,222	1,804	1,704	1,630
Dhurnal	47,306	45,520	34,914	138,834	84,884	64,903	34,401
Ratana	183,653	179,423	167,110	219,125	93,714	79,052	48,073
Adhi	2,336,211	2,260,047	2,262,802	2,409,329	2,710,864	2,820,612	3,332,261
Punjab Total	**5,263,072**	**5,058,633**	**5,158,576**	**5,481,675**	**6,077,518**	**5,798,037**	**5,889,264**
Sindh							
Zamzama	713,370	508,424	305,181	203,233	183,939	112,855	63,887
Kadanwari	11,990	13,280	9,240	8,742	5,368	4,350	8,752
Lundali	-	542	-	-	-	-	-
Bhit & Badhra	104,690	114,945	122,628	129,233	107,602	95,251	89,877
Haqeeq	-	-	-	-	-	6,003	5,515
Mari	29,218	24,269	23,398	18,614	16,828	16,361	17,616
Kalabagh	-	-	-	-	7,268	68,795	37,395

Contd..

Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Sujawal	8,035	23,859	27,362	23,486	18,663	9,061	4,161
Sujjal			3,724	40,043	48,326	47,096	45,784
Bobi	517,375	463,240	356,690	156,535	138,645	129,955	1,85,492
Bitrism	-	-	-	-	-	-	31,542
Chak-2	39,726	110,963	73,664	169,613	326,133	337,151	2,49,029
Chak-7A	134,215	50,050	16,462	12,170	15,330	15,620	13,728
Chak-63	-	-	27,137	355,886	288,988	49,364	353
Chak-66 NE	-	-	39,915	2,225	12,912	-	-
Chak-63 SE	-	-	-	132,844	167,463	118,001	80,232
Chandio	-	-	-	-	-	1,176	424
Chhutto	-	-	-	-	-	3,460	82,120
Daru	-	-	-	-	-	10,170	-
Dars	-	-	-	-	33,199	151,449	1,18,636
Dars West	-	-	-	-	45,288	201,348	1,99,639
Dars Deep	-	-	-	-	11,678	48,754	53,415
Gopang	-	-	-	-	-	-	-
Hakeem Daho			62,461	212,415	113,587	139,757	1,47,393
Jakhro	-	61,807	72,467	67,579	14,762	7,741	4,400
Jarwar	-	-	23,865	76,800	37,215	37,385	29,160
Kunnar	2,040,940	1,509,226	1,207,062	1,188,124	1,480,896	1,173,463	1,154,652
Kunnar West					12,315	47,574	48,279
Kunnar Pasakhi Deep	-	162,897	377,241	329,231	380,280	443,556	5,00,450
Kunnar South	-	-	-	-	-	46,103	65,750
Lashari Centre	233,335	173,405	245,195	205,950	182,675	156,745	1,23,035
Lala Jamali	-	-	-	-	14,679	101,601	1,96,478
Missan	56,184	53,455	51,695	41,410	40,975	35,975	33,200
Moolan	-	-	-	-	-	20,521	16,498
Moolan North	21,166	24,285	28,830	19,785	-	1,720	-
Nim			18,570	15,225	7,373	5,570	5,735
Noorai Jagir	820	10,109	-	56,900	11,700	5,935	1,350
Nur/Bagla	18,656	43,666	30,013	18,545	11,124	7,932	16,991

Contd..

Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Palli	-	-	-	-	150,474	52,355	36,444
Palli Deep	-	-	23,660	82,175	9,267	-	17,425
Pasakhi	1,313,920	1,271,420	1,196,375	1,247,560	1,143,735	916,705	9,00,920
Pasakhi North	260,916	284,440	164,875	147,940	174,790	128,640	2,31,070
Pasakhi North East	140,967	122,270	106,145	106,700	84,584	66,140	1,00,255
Pasakhi East	-	-	-	-	11,533	43,358	59,962
Pasakhi Deep West	-	-	-	-	1,934	-	-
Qadirpur	300,925	292,425	242,935	208,561	160,718	146,483	1,13,502
Resham	-	-	-	-	2,280	108,267	18,260
Soghri	-	-	-	27,925	37,200	35,952	30,584
Sono	485,881	411,860	293,815	217,460	220,375	255,830	2,37,290
Shah	-	-	-	-	14,596	45,417	47,849
Shekhan	142	-	-	-	-	-	-
Tando Alam	298,116	235,730	226,475	228,960	192,465	196,400	1,39,565
Tando Allah Yar	-	-	-	-	73,487	183,077	77,150
Thora	263,636	218,295	200,335	133,405	108,000	102,420	96,910
Thora East	-	-	-	-	-	-	-
Thora Deep	-	-	-	-	23,040	41,816	32,859
Umar	-	-	-	-	11,643	39,958	39,127
Latif	-	6,291	17,003	23,806	17,803	9,533	13,534
Miano	14,494	10,341	9,221	17,016	15,231	9,382	8,772
Bilal	-	-	-	546	-	-	-
Bilal North	-	-	-	-	-	-	-
Kamal North	306,273	105,457	165,704	137,050	90,895	73,331	57,731
Korai	-	-	141,647	135,475	19,831	18,885	1,126
Kumbh	-	-	-	8,909	4,979	51,017	34,000
Naimat Basal	813	4,293	7,376	712	183	-	-
Naimat Basal 2X			37,433	17,045	12,746	4,385	3,658
Naimat West	17,121	111,935	129,085	211,622	315,078	256,238	2,55,609

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Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Nando	-	9	76	-	-	-	-
Rahim	-	-	251,042	113,266	102,106	61,136	6,14,288
Rahim North	237,606	269,241	13,671	1,693	-	1,155	1,003
Rahim 2X	-	-	18,528	85,450	49,885	81,568	24,024
Umer	278	-	52,923	61,920	2,652	8,115	917
Mehar	-	452,152	837,662	385,492	291,125	178,500	1,23,839
Rehmat	-	-	-	-	-	-	-
Saqib	14,604	7,376	4,226	-	-	-	-
Sofiya	-	-	-	-	-	213,914	1,54,390
Adam	31,572	54,661	58,241	20,635	19,728	18,968	28,049
Adam West	-	-	-	9,634	9,258	12,770	10,606
Kabir	-	-	-	-	-	16,442	45,400
Kandhkot	6,420	5,461	5,738	4,551	3,251	5,484	4,763
Kinza	-	-	392	620	-	-	-
Mazarani	8,256	5,587	5,285	3,748	4,126	4,341	3,582
Shahdad	-	-	-	25,385	28,828	36,032	64,090
Sharf	-	-	-	-	176,646	208,155	2,38,676
Akri North	57,241	33,567	25,862	10,252	6,384	13,011	15,021
Ali	9,861	5,354	3,944	2,912	977	4,162	35
Ali Zaur	129	-	-	-	-	-	-
Aassu	-	349,168	1,837,627	672,978	168,314	86,295	49,726
Babarki	-	-	-	-	-	4,531	-
Bachal	-	107,260	16,909	1,226	-	-	-
Bago	-	-	-	-	-	537	-
Bakhsh Deep	-	18,197	30,532	16,860	174	-	-
Bari	-	-	-	-	-	395,472	7,19,012
Bhanoki	-	-	-	-	6,642	-	-
Baqar Deep	658		-	-	-	-	-
Bhatti/Nakurji	3,855	186	165	-	72	-	-
Bijoro	70,830	138,346	61,800	17,207	9,738	12,572	46,750
Bukhari	-	-	-	-	-	-	-
Bukhari Deep	3,319	878	175	15,283	17,569	38,627	24,488
Buzdar	-	-	-	-	-	-	3,733
Buzdar South	-	6,141	2,992	-	-	2,970	-
Buzdar South Deep	231,891	191,073	186,796	124,566	84,325	59,850	34,896
Chaman					11,860	42	-

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Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Dhabi, Dhabi N.&S.	31,188	108,284	60,610	48,249	34,115	243,196	1,18,802
Dang	-	-	-	-	7,748		-
Dhani	-	-	24,144	755	-	-	-
Duphri	5,923	325	4,643	118	-	-	-
Gagani	-	1,687	-	-	-	-	-
Gharo	85,089	39,479	55,014	28,876	20,579	11,120	9,894
Ghungro	57,679	45,984	39,107	30,902	11,090	16,420	12,082
Golarchi	76	57	3	-	101	-	-
Gormani	-	-	-	-	-	-	1,406
Guni	-	-	-	-	-	-	572
Gulsher	-	-	-	-	-	-	25,2,779
Harkro	-	-	-	-	-	29,779	19
Halipota	34,849	58,585	47,706	50,680	69,959	133,895	91,733
Hayat	-	-	-	-	-	-	65,053
Jan	-	-	924	19,611	27,615	20,539	19,751
Jabo	269,557	142,917	71,732	51,268	45,815	27,510	22,328
Jagir	58,391	45,434	21,552	11,908	6,816	11,814	5,916
Jalal	14,902	703	-	-	-	-	-
Jarar Deep	-	127,671	73,068	1,097	50	24	-
Jogwani	8,623	5,016	4,998	3,147	-	-	-
Jhaberi, Jhaberi South	-	28,343	17,316	220	-	59	-
Junathi South	-	-	-	-	-	-	-
Kakejani	-	-	-	-	-	-	-
Kato	-	-		734	2,794	60	-
Keyhole-G	-	-	-	-	-	-	-
Khaskheli	54,722	69,041	72,214	61,720	52,874	45,590	42,563
Khaskheli Downthrown	24,415	18,234	8,557	7,234	5,915	7,154	7,889
Khaskheli North	7,764	13	-	-	-	-	-
Khorewah& K. Deep	39,814	30,182	34,257	25,870	14,455	17,264	17,003
Koli	6,611	76,468	25,646	2,441	-	-	-
Laghari	34,707	35,521	30,459	3,633	1,313	1,659	2,615
Liari	-	-	-	-	-	-	-
Liari Deep	13,298	64	294	100	-	-	-
Limu	-	-	673	17,210	-	-	-
Limu North	-	-	-	9,717	2,180	-	-
Lodano	5,265	1,93,364	41,575	48,751	20,641	6,008	3,937
Lodano Deep	-	2,23,301	130,756	51,979	32,553	16,820	11,326
Mahi	-	-	-	12	182		-
Makhdumpur	553	14,898	17,304	16,371	15,288	1,048	1,288
Makrani	-	-	-	-	13,036	-	-
Malah	14,389	7,918	238	-	-	-	-

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Table A-41: Crude Oil Production by Field

US Barrels

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Mansoora Deep	-	-	77	-	-	-	-
Matli	3,700	5,113		-	-	-	-
Mazari	54,774	59,158	109,566	84,628	73,767	493,369	3,83,034
Mazari South	153,570	1,43,669	116,559	98,733	106,026	104,723	96,132
Mazari South Deep	214,379	2,20,791	184,535	188,132	145,244	156,363	1,54,738
Mewa	192	132	-	-	-	-	-
Mohano	26,660	26,386	25,442	15,702	13,273	11,305	907
Mohib	-	-	-	-	79,608	5,644	-
Mohri	-	-	-	-	-	41,047	31
Moroja	-	-	-	-	-	-	4,850
M.Ismail& M. Ismail Deep	42,663	13,985	13,226	13,433	11,761	12,348	12,186
Missri	57,422	33,754	20,154	17,891	9,678	6,568	339
Muban	48,603	97,143	93,908	56,183	42,221	55,083	49,463
Mulaki	744	-	-	-	-	-	-
Murid	-	79,254	431,187	142,415	59,089	30,849	25,952
Oderolal	-	-	-	-	-	135,655	-
Piaro Deep	16,610	4,779	4,107	6,858	2,703	1,525	2,036
Piaro Deep Basal				5,479	900	-	-
Paniro	85,187	79,426	35,640	16,980	16,108	16,434	11,518
Pir Apan	67,135	-	-	-	-	-	-
Qabul	2,812	2,062		10	-	-	-
Raj	-	-	-	-	-	-	-
Rajani	-	-	-	255	55,260	178,682	1,99,172
Rajo	5,744	-	-	-	-	-	-
Ramdiani	-	-	-	-	-	-	4,657
Rawal	-	-	-	-	-	-	3,769
Rawat	-	-	-	-	37,069	9,254	6,487
Rawat North	-	-	-	-	-	8,742	10,221
Rind	12,603	149	-	-	-	-	-
Roshnai	-	-	-	-	-	20,057	51,529
Sahu	-	-	-	397	64	45	51
Sajan	-	-	-	5,783	663	2,738	6,541
Sakhi, & S Deep	28,918	52,103	45,199	22,917	124	5,573	20,837
Saman	-	-	5,786	737	79	-	-
Salamat	-	-	259	72	8,303	37,714	52,846
Saleh	-	-	310,380	308,533	10,314	189,889	99,890
Shah Dino	-	-	-	-	-	-	-
Shekhano	95,954	53,311	53,987	29,751	24,851	40,062	33,983
Shekhano Deep	103,794	96,901	32,129	4,004	-	-	-
Shorab Deep	-	7,005	136,698	77,525	45,842	12,489	14,645

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Table A-41: Crude Oil Production by Field

<div align="right">US Barrels</div>

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Sutiari Deep	-	12,449	35,266	66,838	86,418	77,901	97,545
Sumar Deep	-	181,912	233,564	161,562	33,626	15,210	8,340
Suhrat	-	-	1,023	288	-	-	-
Sukhi	-	-	-	-	-	2,114	88
Sukhi South	-	-	-	-	-	-	1,98,368
Sonro	1,247,739	819,102	595,630	231,227	108,427	73,635	71,244
Tajedi	45,024	43,943	21,376	26,585	18,736	7,513	-
Tangri	46,159	43,283	27,711	21,662	11,530	19,005	14,381
Tangri Deep	11,572	9,588	4,064	4,109	3,187	3,708	3,950
Tando Ghulam Ali	10,323	10,826	6,523	4,283	650	627	140
Tharo	-	-	2,518	13,241	3,563	60	-
Tharo West	-	-	-	-	-	12,318	-
Thebo	-	66,565	71,282	31,660	18,843	12,115	10,528
Turk&Turk deep	33,157	48,367	48,537	32,712	23,761	33,686	34,927
Warar	-	-	-	-	-	-	7
Wasayo	-	-	-	18	-	-	-
Zaur	115,091	88,390	65,079	86,384	79,694	53,567	74,517
Zaur Deep	3,589	282	-	-	-	-	-
Sindh Total	**11,311,377**	**11,641,150**	**13,013,672**	**10,280,724**	**9,142,239**	**10,385,592**	**10,833,662**
Balochistan							
Sui	14,599	17,490	19,608	20,157	19,912	13,342	12,878
Uch	5,555	10,493	14,709	14,625	12,825	13,855	11,049
Zarghun South	-	-	4,468	3,368	2,606	2,195	1,915
Balochistan Total	**20,154**	**27,983**	**38,785**	**38,150**	**35,343**	**29,392**	**25,842**
Khyber Pakhtunkhwa							
Chanda	1,199,736	965,494	662,565	562,475	445,530	595,618	7,97,945
Mela	1,333,192	1,281,383	744,680	919,822	615,405	449,342	5,49,708
Nashpa	4,843,059	6,297,992	7,567,170	6,983,074	8,010,646	7,068,581	6,596,471
Makori	144,132	52,893	25,410	11,492	18,620	14,780	12,912
Makori Deep	-	-	-	-	-	789,957	5,15,258
Makori East	1,560,855	3,703,935	5,228,930	5,242,618	5,245,874	4,269,266	3,831,808
Mamikel	555,827	816,820	422,413	228,736	219,262	230,417	1,87,746
Manzalai	917,454	432,906	301,320	215,739	163,991	142,780	1,18,876
Maramzai	682,117	1,305,536	1,326,533	1,687,678	1,561,772	1,656,101	1,696,951
Mardankhel	-	-	-	-	733,217	1,113,869	1,425,437
Tolanj	-	-	-	-	-	9,564	6,820
Tolanj West	-	-	-	-	-	3,756	7,328
KP Total	**11,246,372**	**14,856,959**	**16,279,020**	**15,851,634**	**17,014,317**	**16,344,032**	**15,747,260**
Grand Total	**27,840,975**	**31,584,725**	**34,490,053**	**31,652,183**	**32,269,416**	**32,557,052**	**32496,028**
TOE	**3,735,038**	**4,237,285**	**4,627,053**	**4,246,335**	**4,329,141**	**4,367,729**	**43,595,42**
Barrels Per Day	**76,277**	**86,533**	**94,493**	**86,481**	**88,409**	**89,197**	**89,030**

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Table A-42: Petroleum Energy Products Consumption by Sector

(Tones)
(TOE)

Sector/Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Domestic	97,847	100,679	89,017	74,357	77,169	66,075	60,557
	100,937	103,859	91,829	76,706	79,607	68,162	62,470
Industrial *	1,379,096	1,297,035	1,300,190	2,023,377	1,990,398	1,784,781	1,299,437
	1,384,433	1,305,675	1,309,459	2,013,945	1,992,437	1,785,880	1,307,193
Agriculture **	31,828	46,655	37,235	14,512	12,671	14,527	15,021
	33,158	48,605	38,791	15,119	13,201	15,134	15,649
Transport	9,817,546	10,299,718	11,372,924	13,022,573	14,582,925	16,047,392	14,673,564
	10,367,969	10,883,469	12,028,165	13,779,086	15,434,433	16,988,579	15,549,796
Power	7,749,007	9,006,085	8,995,231	7,765,629	8,531,825	6,377,388	2,759,465
	7,561,343	8,791,738	8,800,431	7,583,155	8,328,980	6,223,984	2,688,911
Other Government	317,805	358,512	365,471	386,232	366,958	387,801	409,132
	333,444	376,403	-	405,220	385,300	407,198	429,790
Total:	**19,393,129**	**21,108,684**	**22,160,068**	**23,286,680**	**25,561,946**	**24,677,964**	**19,217,176**
	19,781,283	**21,509,748**	**22,268,676**	**23,873,230**	**26,233,957**	**25,488,939**	**20,053,809**
Annual Growth Rate	3.83%	8.85%	4.98%	5.08%	9.77%	-3.46%	-22.13%

Source: - Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Note: - * Include consumption in cement manufacturing industry.

   ** HSD consumption for tractors in agriculture sector is not separately available and is included in the transport sector. Agriculture sector represents LDO only.

Table A-43: Petroleum Energy Products Consumption by Province

<div align="right">(TOE)</div>

Province	Year						
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	201819
Balochistan	2,145,291	1,986,648	1,959,569	2,109,761	1,983,878	1,579,515	397,351
Khyber Pakhtunkhwa	1,165,213	1,112,208	1,070,840	1,310,307	1,481,364	1,651,608	1,554,369
Punjab	11,979,554	13,272,086	14,002,943	14,858,810	15,946,286	15,257,440	12,166,560
Sindh	4,155,522	4,801,705	5,250,428	5,203,784	6,407,575	6,579,200	5,509,257
A.J. Kashmir	193,615	193,478	211,906	219,869	224,110	223,464	225,495
Gilgit Baltistan	56,290	57,582	68,782	81,377	92,694	109,849	116,728
FATA	85,799	86,041	87,431	89,323	98,050	87,864	84,049
Total:	19,781,283	21,509,748	22,651,899	23,873,230	26,233,957	25,488,939	20,053,809
Annual Growth Rate	3.96%	8.74%	5.31%	5.39%	9.89%	-2.84%	-21.32%

Source: - Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Table A-44: Consumption of Petroleum (Energy) Products by Fuel

<div align="right">Unit : Tones
(TOE)</div>

Product	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Aviation Fuels	620,059	648,802	574,175	621,266	639,545	632,293	555,437
	642,660	672,453	595,425	643,916	662,728	655,576	577,090
Motor Spirit 87RON	3,340,537	3,865,113	4,732,381	5,759,763	6,646,965	7,386,362	7,599,364
	3,569,030	4,129,487	5,056,076	6,153,731	7,101,617	7,891,589	8,119,160
HOBC	12,597	12,871	21,914	40,587	90,595	124,918	86,621
	13,393	13,684	23,299	43,152	96,321	132,813	92,095
HSD	6,820,149	6,888,980	7,411,475	7,745,864	8,484,280	9,038,298	7,354,409
	7,170,023	7,242,385	7,791,684	8,143,227	8,919,524	9,501,963	7,731,690
E-10	9,141	2,644	0	0	0	0	0
	9,402	2,720	0	0	0	0	0
LDO	35,742	49,767	43,096	24,106	19,490	20,986	25,179
	37,236	51,847	44,897	25,114	20,305	21,863	26,231
Furnace Oil	8,388,598	9,464,150	9,202,472	8,953,515	9,560,113	7,360,721	3,493,336
	8,167,978	9,215,243	8,960,447	8,718,038	9,308,682	7,167,134	3,401,461
Kerosene	166,306	176,357	174,555	141,579	120,958	114,386	102,830
	171,561	181,930	180,071	146,053	124,780	118,001	106,079
Total	19,393,129	21,108,684	22,160,068	23,286,680	25,561,946	24,677,964	19,217,176
	19,781,283	21,509,748	22,651,899	23,873,230	26,233,957	25,488,939	20,053,809
Annual Growth Rate	3.83%	8.85%	4.98%	5.08%	9.77%	-3.46%	-22.13%

Source: - Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Table A-45: Consumption of Indigenous Coal by Sector

(Tones)

Sector	Power (WAPDA)	Brick-Kiln Industry*	Domestic	Cement/ Other Industry**	Pak Steel***	Total
2004-05	179,887	3,906,738	-	2,535,168	1,272,000	7,893,793
2005-06	149,334	4,221,825	-	2,778,379	564,450	7,713,988
2006-07	164,397	3,277,472	994	4,140,986	310,209	7,894,058
2007-08	162,200	3,760,707	1,000	5,720,972	465,968	10,110,847
2008-09	112,520	3,274,789	813	3,801,751	1,200,000	8,389,873
2009-10	125,482	3,005,192	-	4,577,007	430,822	8,138,503
2010-11	96,488	3,003,603	-	4,187,935	429,123	7,717,149
2011-12	104,604	3,108,199	-	4,181,897	275,000	7,669,700
2012-13	63,039	2,696,022	-	3,865,942	263,998	6,889,001
2013-14	160,710	2,727,587	-	3,559,178	109,977	6,557,452
2014-15	151,180	3,010,381	-	5,168,806	385,000	8,715,367
2015-16	204,432	3,337,102	-	5,485,260	0	9,026,794
2016-17	859,600	2,855,326	-	7,470,844	0	11,185,770
2017-18	4,436,125	3,941,689	-	9,603,276	0	17,981,090
2018-19	5,901,536	5,391,194	-	10,234,338	0	21,527,068

Source: -   Hydrocarbon Development Institute of Pakistan (Energy Year Book)
Note: -   *   Estimated by deducting other uses of indigenous coal from the total production.
           **   Include indigenous as well as imported coal.
          ***   Imported coal/cock used as cock in Pak Steel.

Table A-46: Associated Gas Production by Field

(Million cubic feet)

Field/Province	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Chanda (KP)	2,604	2,048	1,361	1,092	964	1,174	2,158
Bhalsyedian (Punjab)	-	-			7	27	24
Filmkassar (Punjab)	48	44	39	40	43	38	38
Jakhro (Sindh)	-	1,285	1,644	1,563	464	559	465
Kal (Punjab)	28	26	9	25	20	17	11
Kunar (Sindh)	3,077	4,292	6,352	5,104	4,331	3,223	3,014
Lala Jamali (Sindh)	-	-	-	89	1,098	2,539	2,902
Missa Keswal (Punjab)	139	80	53	42	55	44	42
Pasakhi (Sindh)	243	243	243	243	243	243	243
Rajian (Punjab)	254	265	261	245	414	357	280
Toot (Punjab)	371	292	295	331	372	372	378
Bhangali (Punjab)	-	-	-	8	10	4	4
Dhurnal (Punjab)	214	168	148	401	286	222	191
Balkassar (Punjab)	22	21	23	21	26	13	12
Dhulian (Punjab)	849	858	841	843	782	682	641
Khaur (Punjab)	-	-	-	-	-	-	59
Meyal (Punjab)	966	1,047	966	927	777	737	719
Pariwali (Punjab)	2,709	2,786	2,206	2,003	1,556	1,299	1,264
Pindori (Punjab)	356	278	291	272	235	224	221
Turkwal (Punjab)	18	18	18	18	18	18	18
Aassu (Sindh)	-	36	202	128	50	42	30
Akri North (Sindh)	18	16	7	2	2	2	3
Ali Zaur (Sindh)	10	-	-	-	-	-	
Bachal (Sindh)	-	231	59	6	-	-	-
Bari (Sindh)	-	-	-	-	-	236	421
Bijoro (Sindh)	23	22	15	8	12	13	21
Dabhi, Dabhi N (Sindh)	17	206	16	21	11	9	9
Dabhi S (Sindh)	115	367	175	122	65	221	54
Duphuri (Sindh)	561	455	500	92	2		-
Gulsher (Sindh)	-	-	-	-	-	-	32
Halipota (Sindh)	228	375	169	128	111	302	221

Table A-46: Associated Gas Production by Field

(Million cubic feet)

Field/Province	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Jagir (Sindh)	23	16	14	8	6	2	3
Jan	-	-	-	3	3	4	3
Jhaberi South (Sindh)	136	24	14	1			-
Khaskeli &Downthrown (Sindh)	58	110	83	87	94	186	214
Laghari (Sindh)	49	57	43	4	1	4	6
Liari (Sindh)	6	-	-	-	-	-	-
Mazari (Sindh)	172	115	69	61	58	872	337
Mazari S & S Deep (Sindh)	1,833	2,822	498	374	298	200	178
Meyun Ismail Deep	1,329	449	246	354	316	188	132
Nari (Sindh)	-	-	-	-	-	-	
Murid (Sindh)	-	27	145	52	23	17	16
Qabul (Sindh)	3	1	-	-	-	-	-
Rajo (Sindh)	2	0	-	-	-	-	
Sakhi (Sindh)	-	-	-	-	2	46	78
Sakhi Deep & S Deep(Sindh)	744	578	449	358	310	211	219
Saleh (Sindh)	-	-	354	935	39	227	227
Sukhi (Sindh)	-	-	-	-		209	100
Rawat (Sindh)	-	-	-	-	58	17	27
Rawat North (Sindh)							25
Shekhano Deep (Sindh)	16	58	13	5			-
Tangri (Sindh)	47	40	24	28	25	24	19
Zaur (Sindh)	540	303	174	142	95	97	106
Zaur Deep (Sindh)	374	88	50	18	38	47	47
Others (Sindh)**	96	93	85	56	44	56	92
Total: Million CFt	**18,296**	**20,239**	**18,154**	**16,259**	**13,365**	**15,030**	**15,341**
TOE	490,732	532,382	532,383	532,384	363,863	387,055	439,225

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book)
Note: -   ** Includes Ghungro, Gharo, Mohano, Muban & Tajedi.

Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Zamzama (Sindh)	147,726	104,570	64,657	45,164	39,039	24,203	14,216
	2,821,567	1,997,287	1,234,956	862,631	741,750	462,287	272,953
Kadanwari (Sindh)	44,939	52,472	38,838	23,775	15,344	12,684	22,856
	948,213	1,107,159	819,481	501,652	323,755	266,364	482,260
Bhit & Badhra (Sindh)	137,259	124,958	119,522	111,222	82,390	72,448	60,374
	2,758,906	2,511,656	2,402,392	2,235,554	1,656,030	1,434,466	1,213,511
Lundali (Sindh)	-	1,182	45	-	-	-	-
	-	21,863	833	-	-	-	-
Haseeb (Sindh)	3,765	4,063	1,298	-	-	-	-
	71,150	76,786	24,527	-	-	-	-
Aqeeq (Sindh)	-	-	-	-	-	957	903
	-	-	-	-	-	23,629	22,293
Halini (Punjab)	-	100	331	299	251	230	157
	-	2,336	7,739	6,988	5,881	5,375	3,679
Halini Deep (Punjab)	-	-	-	65	541	543	438
	-	-	-	1,517	12,668	12,701	10,260
Kalabagh (Punjab)		-	-	-	98	1,920	1,411
	-	-	-	-	2,283	44,935	33,023
Mari (Sindh)	209,302	212,259	216,685	221,386	231,143	243,403	245,668
	3,662,791	3,714,530	3,791,986	3,874,253	4,045,005	4,259,559	4,299,184
Koonj (Sindh)	747	628	518	396	336	268	187
	15,465	13,063	10,769	8,235	6,993	5,564	3,893
Sujawal (Sindh)	1,306	3,462	3,747	2,895	2,736	1,528	635
	31,734	84,119	91,056	70,351	66,474	37,134	15,420
Sujjal (Sindh)	-	-	391	4,149	6,054	5,726	5,205
	-	-	9,663	102,470	149,533	141,438	128,572
Zarghun South (Balochistan)	-	-	3,423	4,279	4,547	6,020	5,403
	-	-	71,194	89,012	94,584	125,206	118,861
Makori (KP)	3,036	1,206	735	322	288	298	177
	78,938	31,359	19,110	8,585	7,643	7,898	4,698
Makori Deep (KP)	-	-	-	-	-	2,259	1,992
	-	-	-	-	-	60,544	53,379
Makori East (KP)	5,528	14,255	23,317	28,329	30,654	29,347	28,397
	129,365	333,559	545,627	662,890	858,326	821,726	795,121
Mardankhel (KP)	-	-	-	-	8,709	13,377	15,896
	-	-	-	-	229,927	353,155	419,661
Manzalai (KP)	61,493	36,480	25,816	17,038	13,149	10,710	8,206
	1,512,726	897,411	635,080	425,941	319,516	260,256	199,403
Mamikhel (KP)	11,563	17,844	12,286	11,010	9,350	8,148	7,590
	296,018	456,808	314,516	286,252	243,087	211,859	197,335
Maramzai (KP)	18,227	35,053	34,525	46,182	45,563	49,003	50,036
	468,422	900,862	887,288	1,196,110	1,180,072	1,269,180	1,295,924
Tolanj (KP)	-	-	-	-	-	1,861	2,146
	-	-	-	-	-	43,544	50,225
Tolanj West (KP)	-	-	-	-	-	2,307	3,426
	-	-	-	-	-	53,990	80,161
Bahu (Punjab)	7,923	9,916	4,812	2,126	591	278	106
	100,621	125,936	49,564	23,602	6,556	3,087	1,174

Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Baloch (Sindh)	191	619	234	471	495		-
	5,233	16,947	6,409	12,908	13,568	-	-
Bhullan Shah (Sindh)	-	-	-	-	-	-	223
	-	-	-	-	-	-	6,568
Bobi (Sindh)	5,832	5,895	5,066	2,117	1,970	2,043	2,113
	181,369	183,329	157,555	59,698	55,548	57,617	65,713
Chak 2 (Sindh)	1,333	2,835	1,874	3,035	6,980	6,970	6,247
	35,845	76,275	50,423	81,635	187,757	187,484	168,057
Chak 7A (Sindh)	794	418	288	205	220	156	106
	22,310	11,758	8,089	5,758	6,194	4,387	2,990
Chak 63 (Sindh)	-	-	353	1,749	2,257	487	7
	-	-	10,206	50,534	65,219	14,075	203
Chak 63 SE (Sindh)	-	-	-	1,078	1,235	810	801
	-	-	-	20,374	23,340	15,300	24,109
Chak 66NE (Sindh)	-	-	555	26	289		-
	-	-	16,978	490	5,551	-	-
Chandio (Sindh)	-	-	-	-	-	164	77
	-	-	-	-	-	3,568	2,157
Chhutto (Sindh)	-	-	-	-	-	117	2,817
	-	-	-	-	-	2,943	73,811
Dakhni (Punjab)	16,978	17,076	11,833	9,180	8,802	8,083	6,852
	431,243	433,730	298,204	233,179	223,561	205,311	174,029
Daru (Sindh)	-	-	-	-	-	497	-
	-	-	-	-	-	13,856	-
Dachrapur (Sindh)	-	1,349	3,820	3,100	1,817	2,069	1,000
	-	29,950	84,814	68,821	40,342	45,936	22,201
Dhodak (Punjab)	1,971	1,716	1,346	1,198	1,205	1,206	1,096
	53,795	46,858	27,189	32,711	32,883	32,924	29,932
Dars (Sindh)	-	-	-	-	429	2,534	1,795
	-	-	-	-	8,630	50,934	46,128
Dars West (Sindh)	-	-	-	-	727	3,201	3,060
	-	-	-	-	14,615	64,343	76,206
Dars Deep (Sindh)	-	-	-	-	971	2,796	2,250
	-	-	-	-	19,808	57,032	58,725
Gopang (Sindh)	-	2	38				-
	-	60	1,149				-
Hakeem Daho (Sindh)	-	-	1,234	4,472	1,483	2,526	3,200
	-	-	30,979	112,259	37,218	63,410	80,318
Jand (Punjab)							474
							10,866
Kunar South (Sindh)	-	-	-	-	-	3,331	4,666
	-	-	-	-	-	84,604	118,509
Loti (Balochistan)	8,729	8,187	7,752	8,709	9,972	9,379	9,150
	174,578	163,741	155,818	175,055	199,442	187,583	183,008

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Maru-Reti (Sindh)	-	1,781	4,208	4,923	3,740	3,638	4,051
	-	41,670	98,471	115,205	70,308	68,389	76,151
Kunar West (Sindh)	-	-	-	-	1,217	3,711	3,322
	-	-	-	-	29,946	91,302	81,732
Mela (KP)	6,561	4,038	3,772	4,706	2,877	2,377	3,054
	183,058	112,662	105,232	131,287	80,266	66,311	85,218
Moolan (Sindh)	-	-	-	-	-	509	51
	-	-	-	-	-	16,399	1,399
Nashpa (KP)	17,222	24,205	29,395	30,578	32,562	30,316	34,013
	464,984	653,546	808,376	825,609	879,186	818,520	918,345
Nandpur/Panjpir (Punjab)	6,665	4,181	3,179	3,887	3,425	3,045	2,728
	35,989	15,471	17,167	14,381	18,493	16,442	14,734
Nim (Sindh)	-	-	314	422	171	96	170
	-	-	9,237	12,396	5,033	2,814	5,007
Noorai Jagir (Sindh)	172	357	-	1,369	645	217	108
	4,939	10,255	-	36,974	17,402	5,848	3,095
Nur/Bagla (Sindh)	1,204	2,842	1,976	1,422	964	785	1,946
	29,130	68,787	47,814	41,801	28,331	23,067	57,203
Pakhro (Sindh)	203	240	41	-	-	21	-
	4,828	5,721	953	-	-	491	-
Pasakhi Deep/ Kunar (Sindh)	41,390	41,357	41,503	37,781	38,927	38,237	49,910
	885,748	885,030	888,171	808,508	833,037	818,277	1,068,066
Pirkoh (Balochistan)	5,780	5,426	5,299	4,367	3,486	2,568	1,574
	117,919	110,700	110,210	138,885	110,853	53,421	32,729
Pasakhi East (Sindh)	-	-	-	-	947	3,320	2,970
	-	-	-	-	22,928	80,344	71,868
Pasakhi WD (Sindh)	-	-	-	-	228		-
	-	-	-	-	6,220		-
Qadirpur (Sindh)	185,907	180,792	155,453	134,180	122,798	110,259	99,083
	3,941,225	3,832,786	3,295,599	2,844,611	2,603,313	2,337,489	2,100,566
Resham (Sindh)	-	-	-	-	-	573	111
	-	-	-	-	-	15,642	3,213
Sadkal (Punjab)	680	519	622	502	597	643	533
	19,442	14,844	17,220	14,348	17,086	18,394	14,761
Sari/Hundi (Sindh)	525	766	607	449	466	525	477
	11,029	16,089	12,445	9,419	9,792	11,029	9,789
Shekhan (Sindh)	98	-	-	-	-	-	-
	2,299	-	-	-	-	-	-
Soghri (Sindh)	-	-	861	3,251	3,092	2,647	2,350
	-	-	21,607	81,600	77,611	66,429	58,978
Shah (Sindh)	-	-	-	-	1,268	3,823	3,734
	-	-	-	-	38,792	116,990	114,268
Tando Allah Yar (Sindh)	-	-	-	-	957	4,657	3,170
	-	-	-	-	20,295	98,734	67,195

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Thal West (Sindh)	-	-	-	-	-	-	48
	-	-	-	-	-	-	1,068
Thora Deep (Sindh)	-	-	-	-	2,564	3,415	1,823
	-	-	-	-	62,810	83,656	44,654
Unar (Sindh)	-	-	-	-	1,052	3,640	2,549
	-	-	-	-	25,993	89,917	62,960
Uch (Balochistan)	80,713	104,485	129,778	134,648	145,966	144,553	145,996
	903,987	1170,226	1,310,761	1,508,056	1,634,823	1,618,991	1,474,561
Miano (Sindh)	25,087	23,121	25,606	35,811	28,261	17,526	15,644
	559,440	547,968	611,972	780,680	624,567	387,328	372,320
Latif (Sindh	15,877	36,192	37,134	31,559	19,879	13,114	13,348
	374,697	854,131	876,367	744,792	433,363	285,887	320,348
Tajjal (Sindh)	11,486	4,272	2,239	1,411	1,066	730	398
	271,070	100,819	52,831	33,300	23,348	15,995	9,542
Sawan (Sindh)	63,986	49,395	37,660	30,633	23,748	19,605	15,507
	1,394,895	1165,722	900,076	661,673	512,948	423,473	372,158
Ahmad (Sindh)	-	-	-	0	-	-	-
	-	-	-	3	-	-	-
Ali (Sindh)	1,595	1,153	999	1,181	802	3,588	794
	40,022	28,701	24,864	29,401	20,381	9 1,136	20,159
Rahim (Sindh)	-	-	886	594	378	239	2,629
	-	-	29,768	19,947	12,697	8,015	63,098
Rahim 2X (Sindh)	-	-	98	148	225	107	12
	-	-	2,292	3,467	4,752	2,261	246
Rajani (Sindh)	-	-	4,666	50,421	68,752	61,760	52,039
	-	-	105,443	1,139,522	1,629,413	1 ,463,709	1,233,326
Ratana (Punjab)	4,689	3,263	2,585	4,643	2,089	1,962	1,309
	119,095	84,507	64,890	116,541	54,320	51,791	34,559
Block-22 (Sindh)	3,027	2,422	2,617	3,390	3,800	3,532	2,489
	46,307	37,049	53,135	68,817	77,139	71,703	50,523
Badar (Sindh)	4,821	4,712	4,225	4,497	6,316	6,556	6,279
	66,047	64,552	57,878	61,611	86,533	89,817	86,021
Rehman (Sindh)	-	3,726	3,554	3,198	3,364	6,491	6,037
	-	75,256	70,726	63,644	66,936	129,180	134,635
Rezq (Sindh)	-	-	-	-	2,741	4,626	5,575
	-	-	-	-	60,030	102,242	123,218
Bela (Punjan)	83	134	63		53	-	-
	2,024	3,266	1,521		1,294	-	-
Domial (Punjab)	395	216	-	-	-	-	-
	9,242	5,049	-	-	-	-	-
Jhandial (Punjab)	-	-	-	-	-	2,085	2,445
	-	-	-	-	-	55,875	64,548
Mehar (Sindh)	-	4,216	11,042	5,709	4,842	3,567	2,998
	-	108,782	289,305	146,720	124,441	91,667	77,346
Mitha (Sindh)	-	-	-	-	-	-	2,136
	-	-	-	-	-	-	50,848

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Saqib (Sindh)	3,369	2,298	1,439	-	-	-	-
	78,844	53,784	33,665		-	-	-
Sofiya (Sindh)	-	-	-	-	-	2,889	2,976
	-	-	-	-	-	75,415	76,772
Adhi (Punjab)	12,081	13,562	15,080	17,760	23,379	26,465	25,335
	360,017	404,139	449,385	516,806	680,329	770,122	724,581
Adam (Sindh)	754	3,778	4,158	1,355	1,332	1,352	1,706
	20,886	104,652	87,312	28,456	27,972	28,400	35,826
Adam West (Sindh)	-	-	-	5,060	5,207	5,223	4,880
	-	-	-	118,902	122,365	122,729	114,680
Chachar (Sindh)	1,541	1,186	731	1,106	1,077	941	917
	28,817	22,180	13,605	20,674	20,140	17,598	17,148
Kabir (Sindh)	-	-	-	-	-	215	545
	-	-	-	-	-	6,096	15,478
Kandhkot (Sindh)	60,086	56,802	58,363	52,709	68,227	75,611	75,584
	1,195,711	1,130,362	1,155,582	1,033,091	1,337,249	1,481,970	1,481,446
Kinza (Sindh)	-	-	120	175	-	-	10
	-	-	2,544	3,706	-	-	212
Mazarani (Sindh)	2,474	2,088	1,737	1,512	1,542	1,641	1,435
	59,623	50,311	41,863	36,434	37,162	39,542	34,584
Shahdad (Sindh)	-	-	-	2,141	2,661	3,473	5,524
	-	-	-	53,106	65,993	86,122	136,995
Sui (Balochistan)	181,371	159,030	152,548	160,241	161,724	148,015	140,407
	4,225,944	3,705,395	3,371,304	3,653,485	3,687,307	3,374,735	3,201,280
Sharf (Sindh)	-	-	-	-	14,987	17,810	21,077
	-	-	-	-	232,299	297,423	326,694
Rodho (Punjab)	8,462	6,684	5,491	4,517	3,837	3,068	2,644
	202,243	159,754	131,231	107,950	91,701	73,329	63,192
Amdani (Sindh)	-	3	-	-	-	-	-
	-	49	-	-	-	-	-
Babarki (Sindh)	-	-	-	-	-	758	33
	-	-	-	-	-	18,720	807
Bago (Sindh)	-	-	-	-	-	148	1
	-	-	-	-	-	3,071	12
Bakhsh Deep (Sindh)	-	2,943	5,144	2,286	29	139	-
	-	63,283	110,598	49,156	618	2,979	-
Baudero (Sindh)	-	-	-	-	-	-	875
	-	-	-	-	-	-	20,029
Bhatti (Sindh)	338	322	284	184	87	143	61
	8,893	8,458	7,417	4,815	2,277	3,723	1,586
Baqar Deep (Sindh)	235	-	0	-	-	-	-
	5,745	-	8	-	-	-	-
Bhanoki (Sindh)	-	-	-	157	1,584	-	-
	-	-	-	3,496	41,032	-	-
Bilal (Sindh)**	-	-	-	13	5	-	-
	-	-	-	276	120	-	-

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Bukari Deep (Sindh)	830	713	441	236	1,182	2,743	881
	21,245	18,333	11,321	6,076	29,787	69,121	22,202
Bukari North (Sindh)	-	-	-	-	-	-	960
	-	-	-	-	-	-	23,906
Buzdar South (Sindh)	0	67	52			424	42
	5	1,516	1,178			9,542	945
Buzdar South Deep (Sindh)	4,245	5,776	3,835	1,902	850	998	329
	95,516	135,730	90,131	44,694	22,024	25,856	8,516
Chaman (Sindh)	-	-	-	-	1,639	453	95
	-	-	-	-	39,657	10,968	2,302
Dhani (Sindh)	-	-	56	3	-	-	-
	-	-	1,393	82	-	-	-
Dang (Sindh)	-	-	-	-	6	-	-
	-	-	-	-	143	-	-
Fateh Shah North (Sindh)	192	230	249	32	98	-	7
	4,832	5,790	6,272	817	2,517	-	179
Gagani (Sindh)	-	91	-	-	-	-	-
	-	1,962	-	-	-	-	-
Golarchi (Sindh)	337	295	123	79	217	31	32
	8,216	7,174	2,984	1,919	5,377	779	785
Gormani (Sindh)	-	-	-	-	-	-	259
	-	-	-	-	-	-	5,079
Guni (Sindh)	-	-	-	-	-	-	59
	-	-	-	-	-	-	1,545
Haider Deep (Sindh)	98	54	41	21	10	22	16
	2,284	1,268	971	493	229	510	382
Hakro (Sindh)	-	-	-	-	-	633	8
	-	-	-	-	-	16,702	214
Hayat(Sindh)	-	-	-	-	-	-	1,577
	-	-	-	-	-	-	43,359
Khaskeli North (Sindh)	490	25	-	-	-	-	-
	13,660	705	-	-	-	-	-
Liari Deep (Sindh)	520	68	42	10	2	28	-
	14,660	1,851	1,159	275	44	755	-
Lodano (Sindh)	489	1,879	1,015	470	514	98	62
	12,367	47,735	25,789	12,465	12,965	2,460	1,565
Lodano Deep(Sindh)	-	2,330	267	210	136	116	68
	-	56,614	6,476	5,469	3,447	2,927	1,714
Limu (Sindh)	-	-	309	24	-	-	-
	-	-	7,692	608	-	-	-
Limu North (Sindh)	-	-	-	2,467	1,535	25	-
	-	-	-	67,114	37,914	625	-
Limu East (Sindh)	-	-	-	5	4	0	-
	-	-	-	141	90	2	-
Jabo(Sindh)	523	182	112	70	57	36	28
	11,916	3,977	2,437	1,532	1,242	791	615

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Jalal (Sindh)	2,227	614	0	-	-	-	-
	55,674	15,106	1	-	-	-	-
Jarar Deep (Sindh)	-	4,345	3,261	190	79	19	-
	-	104,277	78,260	4,854	2,018	479	-
Jhok (Sindh)	-	67	0	-	-	-	-
	-	1,752	1	-	-	-	-
Kamal North (Sindh)	811	499	637	561	387	313	269
	25,289	15,454	19,746	17,404	11,658	9,412	8,101
Kausar (Sindh)	1,413	1,006	832	574	550	478	528
	32,082	22,845	18,896	13,032	12,484	10,847	11,989
Malah (Sindh)	447	52	0	-	-	-	-
	11,970	1,436	9	-	-	-	-
Mewa (Sindh)	322	189	46	-	-	-	-
	7,877	4,674	1,137	-	-	-	-
Mohri (Sindh)	-	-	-	-	-	1,370	18
	-	-	-	-	-	36,724	483
Moroja (Sindh)	-	-	-	-	-	-	2,488
	-	-	-	-	-	-	64,433
Naimat Basal (Sindh)**	1,782	2,040	1,308	989	791	588	543
	38,491	48,968	31,396	23,746	18,993	14,109	13,030
Naimat Basal 2X (Sindh)			254	147	157	76	61
			7,964	4,597	4,916	2,373	1,907
Naimat West (Sindh)	1,004	13,253	15,255	41,754	44,088	36,251	39,795
	17,773	238,560	274,598	751,577	780,355	641,649	704,371
Nando (Sindh)	-	7	169	36	23	-	-
	-	194	4,476	954	628	-	-
Jogwani (Sindh)	3,395	836	311	78	7	-	-
	80,461	19,567	7,286	1,828	173	-	-
Kato (Sindh)	33	30	13	55	75	70	54
	953	883	364	1,596	2,257	2,134	1,633
Khorewah (Sindh)	2,516	2,055	2,269	1,399	979	977	681
	66,914	53,835	59,441	36,657	26,438	26,384	18,399
Khorewah Deep (Sindh)	398	477	171	53	48	33	25
	10,068	11,914	4,275	1,333	1,237	863	634
Koli (Sindh)	20	145	72	50			-
	489	3,514	1,747	1,221			-
Korai (Sindh)	-	-	5,887	4,549	1,168	2,237	364
	-	-	143,061	115,996	30,591	58,603	9,526
Korai North (Sindh)	-	-	-	1	-	-	-
	-	-	-	35	-	-	-
Kumbh (Sindh)	-	-	-	660	402	124	43
	-	-	-	15,771	8,879	2,729	942
Mahi (Sindh)	-	-	-	4	45	10	-
	-	-	-	95	1,114	251	-
Makhpur&Deep (Sindh)	797	377	404	424	355	19	768
	16,408	8,858	9,497	9,963	9,335	491	20,203
Makrani (Sindh)	-	-	-	-	179	0	-
	-	-	-	-	4,932	5	-
Malkani (Sindh)	-	-	-	-	11	23	-
	-	-	-	-	314	620	-

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Matli (Sindh)	73	40	20	9	-	-	20
	1,771	983	476	218	-	-	490
Missri (Sindh)	914	53	42	29	17	10	1
	16,460	962	755	517	310	174	13
Mohib (Sindh)	-	-	-	-	1,049	181	-
	-	-	-	-	24,538	4,232	-
Mor (Sindh)	-	-	-	-	94		-
	-	-	-	-	2,092		-
Mulaki (Sindh)	639	212	-	-	-	-	-
	16,795	5,549	-	-	-	-	-
Nurpur Deep (Sindh)	1,109	558	379	297	137	6	4
	25,957	13,064	8,790	6,883	3,156	148	82
Oderolal (Sindh)	-	-	-	-	-	1,222	-
	-	-	-	-	-	33,120	-
Pir (Sindh)	12	3	0	-	-	-	-
	287	63	9	-	-	-	-
Pir Apan (Sindh)	3,060	-	-	-	-	-	
	61,816	-	-	-	-	-	
Piaro Deep (Sindh)	1,442	401	244	231	100	71	53
	33,740	9,381	6,427	6,083	2,751	1,956	1,463
Piaro Deep Bisal (Sindh)	-	-	-	1,097	263	494	374
	-	-	-	26,559	6,611	12,410	9,377
Qasim Deep (Sindh)	-	3,187	1,545	1,084	539	342	156
	-	71,391	36,614	24,291	12,067	7,652	3,502
Ragni Deep (Sindh)	-	30	224	168	117	36	-
	-	666	4,905	3,674	2,569	791	-
Rehim North (Sindh)	2,646	1,758	367	39	10	57	37
	57,144	37,095	7,750	828	207	1,196	779
Raj (Sindh)	0	-	-	-	-	-	-
	2	-	-	-	-	-	
Rajpari (Sindh)	-	1	-	-	-	-	
	-	42	-	-	-	-	
Ramdiani (Sindh)	-	-	-	-	-	-	158
	-	-	-	-	-	-	3,781
Rawal (Sindh)							232
							6,197
Rind (Sindh)	21	-	-	-	-	-	
	547	-	-	-	-	-	
Roshnai (Sindh)	-	-	-	-	-	639	1,448
	-	-	-	-	-	18,208	41,281

Contd..

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Table A-47: Non-Associated Gas Production by Field

(Million cubic feet)
(TOE)

Field/Province	2012-13	2103-14	2014-15	2015-16	2016-17	2017-18	2018-19
Sahu (Sindh)	-	-	-	26	6	8	1
	-	-	-	635	158	197	19
Saman (Sindh)	-	-	19	16	0	-	-
	-	-	442	382	10	-	-
Sajan (Sindh)	-	-	-	863	291	1,007	1,391
	-	-	-	21,222	7,440	25,772	35,597
Salamat (Sindh)	-	-	1,978	11,690	10,667	10,275	9,930
	-	-	46,493	274,722	256,004	246,606	238,313
Shekhano (Sindh)	7,099	40	125	42	27	42	39
	170,382	949	3,007	1,015	715	1,090	1,022
Siraj South (Sindh)	-	-	-	-	9	0	-
	-	-	-	-	214	11	-
Sonro (Sindh)	1,420	586	528	880	247	207	151
	32,806	13,350	12,037	20,055	6,590	5,535	4,030
Sohrab Deep (Sindh)	-	3,583	41,408	23,220	14,432	8,258	6,874
	-	87,437	1,010,363	566,572	378,114	216,369	180,089
Suhrat (Sindh)	-	-	339	379	217	-	-
	-	-	8,227	9,211	5,545	-	-
Sumar Deep (Sindh)	-	5,434	4,241	1,641	1,189	1,036	824
	-	142,904	111,529	43,161	32,925	28,697	22,829
Sutiari Deep (Sindh)	-	2,543	9,186	17,629	18,847	36,714	47,936
	-	43,223	156,155	299,685	326,047	635,152	829,285
Tangri Deep (Sindh)	1,430	834	453	326	100	73	71
	36,189	21,107	11,228	8,093	2,661	1,938	1,879
Tharo (Sindh)	-	-	377	2,573	1,637	881	535
	-	-	9,472	64,588	40,593	21,840	13,262
Tharo West (Sindh)	-	-	-	-	-	609	45
	-	-	-	-	-	15,968	1,171
Thebo (Sindh)	-	576	1,102	696	340	250	269
	-	15,270	29,193	18,439	8,748	6,429	6,926
Turk (Sindh)	981	700	610	726	564	527	492
	26,083	18,607	16,223	19,388	15,341	14,332	13,374
Turk Deep (Sindh)	3,246	3,627	3,446	2,082	1,114	1,010	972
	85,368	94,671	89,945	54,960	29,523	26,774	25,760
Umar (Sindh)	-	-	700	1,616	626	527	102
	-	-	19,035	43,964	17,024	14,335	2,773
Usman (Sindh)	1,947	1,469	1,293	955	340	-	-
	44,195	33,347	29,347	21,669	7,708	-	-
Wasayo (Sindh)	-	-	-	465	-	-	-
	-	-	-	12,894	-	-	-
Zaur West (Sindh)	-	-	-	18	3	-	-
	-	-	-	481	87	-	-
Others * (Sindh)	1,104	876	731	568	334	389	200
	27,596	21,902	18,266	14,191	8,361	9,717	4,994
Total	1,487,544	1,473,269	1,447,606	1,465,292	1,458,490	1,443,907	1,421,205
	30,660,717	30,419,795	29,507,084	29,999,740	29,824,872	29,485,519	28,894,911

Source:- Hydrocarbon Development Institute of Pakistan   (Energy Year Book)
   *   Others Include Paniro, Shah Dino, Tando Ghulam Ali.

Table A-48: Natural Gas Consumption by Sector

(Million cubic feet)
(TOE)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Domestic	291,917	269,135	278,069	271,302	290,868	284,428	311,887
	6,830,868	6,297,770	6,506,824	6,348,456	6,806,322	6,655,612	7,298,154
Commercial	40,689	38,117	35,187	33,633	32,858	32,096	31,205
	952,115	891,927	823,381	787,005	768,884	751,052	730,188
General Industries	274,450	250,490	239,591	230,436	261,267	273,339	245,958
	6,422,139	5,861,460	5,606,436	5,392,202	6,113,656	6,396,131	5,755,407
Pakistan Steel Mills	9,827	8,542	7,623	1,081	739	735	748
	229,952	199,883	178,378	25,295	17,293	17,199	17,503
Cement	586	522	831	497	583	886	387
	13,720	12,215	19,449	11,633	13,651	20,737	9,061
Fertilizer (as Feedstock)	148,782	164,378	166,903	182,076	182,241	181,662	196,576
	2,754,794	3,024,845	3,088,834	3,559,855	3,622,881	3,500,893	3,842,384
Fertilizer (as fuel use)	39,237	52,139	58,609	80,847	94,564	66,442	37,258
	727,491	963,123	1,064,643	1,471,520	1,737,760	1,204,500	695,246
Power	362,262	349,535	371,562	440,593	446,941	544,654	511,140
	7,084,177	6,602,422	6,847,894	8,577,146	8,643,403	10,831,662	10,050,101
Transport (CNG)	100,228	87,634	66,517	64,455	67,245	70,455	65,099
	2,345,331	2,050,646	1,556,505	1,508,246	1,573,536	1,648,649	1,523,315
SSGC	-	-	-	-	-	-	53,261
Total	**1,267,980**	**1,220,493**	**1,224,893**	**1,304,919**	**1,377,307**	**1,454,697**	**1,453,517**
	27,360,587	**25,904,290**	**25,692,343**	**27,681,360**	**29,297,384**	**31,026,434**	**31,167,665**
Annual Growth Rate	-1.57%	-3.75%	0.36%	6.53%	5.55%	5.62%	-0.08%

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Table A-49: Natural Gas Consumption 2018-19 by Province

Sector	Punjab	Khyber Pakhtunkhwa	Sindh	Balochistan	Total
Domestic	179,886	36,286	80,734	14,981	311,887
	4,209,331	849,092	1,889,176	350,555	7,298,154
Commercial	18,544	2,454	9,222	984	31,205
	433,940	57,428	215,795	23,026	730,188
Gen-Industry*	98,250	14,101	133,190	416	245,958
	2,299,055	329,972	3,116,646	9,734	5,755,407
Pakistan Steel Mills	-	-	748	-	748
	-	-	17,503	-	17,503
Cement	10	136	242	0	387
	224	3,174	5,663	0	9,061
Fertilizer (as Feedstock)	124,441	0	72,135	-	196,576
	2,266,940	0	1,575,444	-	3,842,384
Fertilizer (as Fuel use)	25,370	41	11,846	-	37,258
	464,205	968	230,073	-	695,246
Power	204,001	-	188,621	118,518	511,140
	4,744,794	-	4,022,075	1,283,232	10,050,101
Transport	16,623	25,759	21,909	808	65,099
	388,980	602,758	512,671	18,907	1,523,315
Total	53,261	-	-	-	53,261
	1,246,306	-	-	-	1,246,306

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-50: Gas Supplies to Fertilizer and Power Sectors by Source

(Million cubic feet)
(TOE)

Sector/Source	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Fertilizer Sector							
SNGPL	13,748	16,764	17,825	49,720	65,898	41,759	56,918
	321,702	392,278	417,094	1,163,449	1,544,134	977,163	1,131,884
SSGCL	18,785	16,950	17,264	23,199	21,564	19,863	18,599
	439,569	396,630	403,978	542,857	504,598	464,794	435,217
Mari Gas Field	155,487	182,803	190,423	190,004	189,252	186,482	158,316
	2,721,014	3,199,060	3,332,405	3,325,070	3,311,910	3,263,435	2,770,530
Total Fertilizer Sector	**188,019**	**216,517**	**225,512**	**262,923**	**276,805**	**248,104**	**233,833**
	3,482,285	**3,987,968**	**4,153,476**	**5,031,375**	**5,360,641**	**4,705,392**	**4,537,630**
Power Sector							
SNGPL	118,587	108,080	95,997	138,670	154,915	237,138	256,828
	2,774,939	2,529,082	2,246,328	3,244,879	3,625,011	5,549,019	6,009,764
SSGCL	73,063	66,598	79,222	107,057	81,039	71,876	56,567
	1,709,674	1,558,393	1,853,795	2,505,134	1,896,313	1,681,898	1,323,668
Kandhkot Gas Field	25,483	30,183	32,194	27,247	34,995	54,135	49,798
	507,119	600,647	637,441	534,045	685,900	1,061,047	976,037
Mari Gas Field	40,884	20,604	19,123	26,492	22,944	35,870	34,309
	715,478	360,574	334,658	463,605	401,520	627,725	600,408
Nandpur/Panjpir Gas Field	13,923	13,531	7,729	5,897	3,781	2,935	1,601
	75,184	50,064	41,739	21,819	20,419	15,851	8,648
Uch Gas Field	61,303	83,975	106,013	105,921	115,022	112,911	112,037
	686,599	940,514	1,070,733	1,186,315	1,288.246	1,264,606	1,131,577
Qadirpur Gas Field	29,018	26,564	31,283	29,309	34,245	29,788	-
	615,185	563,147	663,200	621,350	725,994	631,516	-
Total Power Sector	**362,262**	**349,535**	**371,562**	**440,593**	**446,941**	**544,654**	**511,140**
	7,084,177	**6,602,422**	**6,847,894**	**8,577,146**	**8,643,403**	**10,831,662**	**10,050,101**

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-51: Installed Capacity of Electricity Generation

Unit:MW

Type/Power Station	2013	2014	2015	2016	2017	2018	2019
A- Hydel (WAPDA)							
Tarbela	3478	3478	3478	3478	3478	3478	3478
T-4th	-	-	-	-	-		1410
Ghazi Barotha	1450	1450	1450	1450	1450	1450	1450
Mangla	1000	1000	1000	1000	1000	1000	1000
Warsak	243	243	243	243	243	243	243
Chashma	184	184	184	184	184	184	184
DKHP	-	-	130	130	130	130	130
Jinah	96	96	96	96	96	96	108
AKHP	121	121	121	121	121	121	96
Dargai	20	20	20	20	20	20	121
New Jabban	-	22	22	22	22	22	20
Gomal Zam	-	17	17	17	17	17	22
Rasul	22	22	22	22	22	22	17
Shadiwal	14	14	14	14	14	14	22
Chichoki Malian	13	13	13	13	13	13	14
Nandipur	14	14	14	14	14	14	13
Kurram Garhi	4	4	4	4	4	4	14
Renala	1	1	1	1	1	1	4
Chitral	1	1	1	1	1	1	1
KKHP	72	72	72	72	72	72	1
A. 2 Hydel (AJKHEB)							
Jagran	30	30	30	30	30	30	30
Others	10	7	14	7	14	21	6
A. 3 Hydel (Pravate sector)							
New Bong Escape Hydro	-	84	84	84	84	84	84
Pehur	-	-	-	18	18	18	18
Malakand	-	-	-	81	81	81	81
Pehur	-	-	-	-	-	3	-
Hydel Sub-Total	**6773**	**6893**	**7030**	**7122**	**7129**	**7139**	**8639**
B. 1 Thermal (WAPDA)							
GTPS Shahdra	44	59	59	44	-	-	-
SPS Faisalabad	132	132	132	132	132	132	132
GTPS Faisalabad	244	244	244	244	244	244	244
NGPS Multan	130	195	195	195	-	-	-
TPS Muzaffar Garh	1350	1350	1350	1350	1350	1350	1350
TPS Guddu	1655	1655	1655	2402	2402	2402	2402
GTPS Kotri	174	174	174	144	144	174	174
TPS Jamshoro	850	850	850	850	850	880	880
FBC Lakhra	50	150	150	150	50	50	50
TPS Quetta	35	35	35	35	35	35	35
GTPS Panjgur	39	39	39	39	39	39	39
TPS Pasni	17	17	17	17	17	17	17
CCPP Nandipur	-	-	-	425	425	425	425
Thermal WAPDA Sub-Total	**4720**	**4900**	**4900**	**6027**	**5688**	**5748**	**5748**

Table A-51: Installed Capacity of Electricity Generation as on 30th June

Unit:MW

Type/Power Station	2013	2014	2015	2016	2017	2018	2019
B.2. Thermal (KESC)							
TPS Korangi	88	-	-	-	-	-	-
GTPS Korangi Town	0	88	107	107	107	107	107
GTPS Site	88	88	107	107	107	107	107
TPS Bin Qasim	1260	1260	840	1260	1260	1260	1260
Korangi CCP	220	220	248	248	248	248	248
TPS Bin Qasim-II	560	560	573	573	573	573	573
Thermal (KESC) Sub-Total	**2216**	**2216**	**1875**	**2295**	**2295**	**2295**	**2295**
B.3. Thermal (IPPs)							
AES Lalpir	362	362	362	362	362	362	362
AES Pak Gen	365	365	365	365	365	365	365
Altern Energy	31	31	31	31	31	31	31
Attock Gen.	165	165	165	165	165	165	165
Atlas Power	225	214	214	214	219	219	219
Baloki	-	-	-	-	-	1320	1320
Devis Energen	-	-	-	11	11	11	11
Engro Energy	221.0	217	217	217	217	217	217
Fauji Kabirwala	157	157	157	157	157	157	157
Foundation Power	185	185	185	185	185	185	185
Gul Ahmed	136	136	136	136	136	136	136
Gulf Power Gen	-	-	-	-	-	62	62
Habibullah	129	140	140	140	140	140	140
Haveli Bahdur Shah PP	-	-	-	-	1230	1230	1230
Halmore Power	207	225	225	225	225	225	225
HUBCO	1292	1292	1292	1292	1292	1292	1292
Hub Power, Narowal	225	225	219	214	214	214	214
Japan Power	135	135	135	135	135	135	135
KAPCO	1466	1466	1466	1466	1466	1466	1466
Kohinoor Energy	131	131	131	131	131	131	131
Liberty Tech Power	200	200	200	202	202	202	202
Nishat Chunian	200	200	200	200	200	200	200
Nishat Power	200	200	200	200	200	200	200
Orient Power	213	213	213	213	213	213	213
Port Qasim	-	-	-	-	-	1320	1320
Quaid-e-Azam Thermal PP	-	-	-	-	1180	1180	1180
Reshman	-	-	-	-	-	97	97
Rousch Power	450	450	450	450	450	450	450
Saba Power	134	134	134	134	134	134	134
Sahiwal Coal Fire Plant	-	-	-	-	1320	1320	1320
Saif Power	229	229	229	225	225	225	225
Southern Electric	135	135	135	136	136	136	136
Sapphire Electric	212	212	212	235	212	212	212
Tapal Energy	126	126	126	126	126	126	126
TNB Liberty Power	235	235	235	235	235	235	235
Uch Power	586	586	586	586	586	586	586
Uch-II Power	-	404	404	404	404	404	404
Thermal Private Sub-Total	**8353**	**8771**	**8766**	**8793**	**12505**	**15304**	**15304**
C. NUCLEAR							
KANUPP	100	100	100	100	100	100	100
CHASNUPP-I	325	325	325	325	325	325	325
CHASNUPP-II	325	325	325	325	325	325	325
CHASNUPP-III	-	-	-	-	340	340	340
CHASNUPP-IV	-	-	-	-	-	340	340
Nuclear Sub-Total	750	750	750	750	1090	1430	**1430**
Grand Total	22812	23531	23759	25889	29944	33554	**35114**
Of which: Thermal- Total	**15289**	**15887**	**15541**	**17115**	**20488**	**23347**	**23347**

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-52: Gross Generation of Electricity by Source

Unit: GWh

Source	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Hydel (WAPDA) **	29687	31254	31824	33433	31091	26995	26414
Thermal (WAPDA)	14148	14236	12133	13917	19571	16193	13378
KESC	8567	8709	9318	10323	10147	10338	10727
IPPs	38996	43761	46435	46272	51550	63082	62496
Thermal-Total	**61711**	**66707**	**67886**	**70512**	**81268**	**89614**	**86602**
Nuclear (KANUPP)	606	328	404	430	491	419	175
CHASNUPP-I	2295	2376	2656	1616	2293	2627	2294
CHASNUPP-II	1652	2386	2744	2560	2501	2484	2448
CHASNUPP-III	-	-	-	-	1714	2432	2694
CHASNUPP-IV	-	-	-	-	-	1918	2298
Nuclear-Total	**4553**	**5090**	**5804**	**4605**	**6999**	**9880**	**9909**
Total Generation	**96122**	**103670**	**106966**	**111300**	**123118**	**131275**	**128532**
Imported *	375	419	443	463	496	556	487
Total Electricity Supply	**96497**	**104089**	**107408**	**111763**	**123614**	**131831**	**129019**
Of which WAPDA	43835	45490	44607	47350	51754	43188	39793
Annual Growth Rate	1.08%	7.85%	3.18%	4.05%	10.62%	6.63%	-2.09 %

Source**:-** Hydrocarbon Development Institute of Pakistan (Energy Year Book).

* WAPDA imported electricity from Iran since October, 2002.

** AJKHEB generation data is for nine months (July 2011 to Februray 2012)

Table A-53: Electricity Consumption by Sector (Public Utilities Only)

Unit (GWh)
(TOE)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Domestic	36116	39549	41450	44486	48698	54028	53685
	2941308	3220860	3375647	3622967	3965972	4400021	4372102
Commercial	6007	6375	6512	7181	7856	8606	8513
	489207	519195	530331	584855	639808	700907	693306
Industrial	22313	24356	24979	25035	24010	27468	28760
	1817171	1983592	2034309	2038889	1955361	2236985	2342205
Agriculture	7697	8290	8033	8526	9221	10128	9809
	626827	675099	654221	694395	750993	824859	798870
Street Light	457	458	441	459	484	475	451
	37231	37274	35925	37410	39430	38647	36769
Bulk Supplies	4137	4313	4334	4666	5018	5515	5622
	336931	351271	352929	379990	408662	449104	457891
General Services*	-	-	-	-	-	-	1
	-	-	-	-	-	-	112
Other Govt. **	61	68	69	76	242	708	2618
	4999	5503	5648	6197	19714	57628	213235
Total: GWh	**76789**	**83409**	**85818**	**90431**	**95530**	**106927**	**109461**
TOE	**6253675**	**6792794**	**6989011**	**7364702**	**7779939**	**8708151**	**8914489**
Annual Growth Rate	0.04%	8.62%	2.89%	5.38%	5.64%	11.93%	2.37%

Source**:-** Hydrocarbon Development Institute of Pakistan (Energy Year Book).

*   = Introduction of Gernal Services Category post notification of K-Electric's MYT on May 22, 2019

** = Other Government includes Railways Traction & Co-genderation

Table A-54: Electricity Consumption by Province (Public Utilities Only)

(GWh)
(TOE)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Punjab	46467	52088	53249	57245	60940	69718	71735
	3784272	4242047	4336599	4662033	4962954	5677834	5842098
Sindh	17193	17839	18997	19213	19479	20850	21016
	1400184	1452812	1547082	1564714	1586372	1698051	1711553
Khyber Pakhtunkhwa	8455	8837	8700	8812	9660	10278	10677
	688575	719685	708528	717649	786710	837040	869535
Balochistan	3812	3744	3994	4220	4452	4915	4778
	310449	304911	325271	343677	362571	400278	389120
AJK	862	901	878	941	999	1166	1255
	70194	73338	71531	76629	81333	94949	102183
Total:	**76789**	**83409**	**85818**	**90431**	**95530**	**106927**	**109461**
	6253675	**6792794**	**6989011**	**7364702**	**7779939**	**8708151**	**8914489**

Source Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-55: Fuel Consumption for Thermal Power Generation

(TOE)

Fuel	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Coal	28204	71902	67638	91463	384585	1984722	2640347
Furnace Oil	7342755	8486744	8234479	7288400	8037139	6029947	2661528
Diesel Oil	218584	304994	565953	294755	291841	194033	27383
Gas	7084177	6602422	6847894	8577146	8643403	10831662	10050101
Total:	**14673721**	**15466061**	**15715963**	**16251764**	**17356967**	**19040365**	**15379360**
Annual Growth Rate	3.41%	5.40%	1.62%	3.41%	6.80%	9.70%	-19.23%

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-56: Thermal Electricity Generation by Fuel

(TOE)

Fuel	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Coal	61	157	145	148	279	10911	15774
Oil	34534	39880	39390	35362	39563	29501	13392
RLNG	-	-	-	-	-	9768	22590
Gas	27116	26670	28352	35001	41426	39435	34846
Total:	**61711**	**66707**	**67886**	**70512**	**81268**	**89614**	**86602**
Annual Growth Rate	0.66%	8.09%	1.77%	3.87%	15.25%	10.27%	-3.36%

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-57: Field-wise Production of Coal in Pakistan

(Tones)

Province\Field	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Balochistan							
Sor Range	74726	151509	162901	179270	193372	168907	0
Degari	21868	22750	648	38777	39498	56838	0
Sharigh	170336	240577	90358	344769	229746	157235	0
Sinjidi	44240	34138	113207	87606	70920	84299	0
Mach	75635	112684	76302	144244	143856	122201	0
Harnai-Khost Nasaka-Zardalu	152291	161346	60042	190258	192974	197122	583810
Duki	242358	273230	824837	683605	556861	530255	1555302
Pir Ismail Ziarat	139933	170005	139636	194033	105808	74972	613195
Pir Ismail Ziarat Sibi	-	-	-	-	49,386	39,915	0
Abegum	7425	10633	12910	48207	21851	10548	0
Barkhan/ Chamalang	221420	173372	181339	153204	147066	81198	0
Bolan	-	-	-	-	-	-	144692
Sub Total	**1150232**	**1350244**	**1662180**	**2063973**	**1751338**	**1523490**	**2896999**
Khyber Pakhtunkhwa							
Makerwal/ Gula Khel	68209	84186	86528	87868	80072	56599	80924
Kohat, FATA	197957	156828	183903	302550	279565	403305	343200
Sub Total	**266166**	**241014**	**270431**	**390418**	**359637**	**459904**	**424124**
Punjab							
Makerwal/Salt Range	604875	683689	656637	935019	985313	1003182	1028843
Sub Total	**604875**	**683689**	**656637**	**935019**	**985313**	**1003182**	**1028843**
Sindh							
Lakhra	1152898	1158575	1116699	745493	1061854	1280957	1100058
Jhimpir	4890	4775	5614	6631	6784	29662	12626
Sub Total	**1157788**	**1163350**	**1122313**	**752124**	**1068638**	**1310619**	**1112684**

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book)

Table A-58: Energy Consumption by Sector

(TOE)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Domestic							
Oil	100937	103859	91829	76706	79607	68162	62,470
Gas	6830868	6297770	6506824	6348456	6806322	6655612	7,298,154
LPG	245902	259494	312629	465446	491857	536415	4,81,982
Electricity *	2941308	3220860	3375647	3622967	3965972	4400021	4,372,102
Sub-Total	**10119014**	**9881983**	**10286929**	**10513575**	**11343757**	**11660210**	**12,214,708**
Annual Growth Rate	**8.10%**	**-2.34%**	**4.10%**	**2.20%**	**7.90%**	**2.79%**	**4.76%**
* @ 3412 Btu/k Wh.							
Commercial							
LPG	203523	244393	311330	447286	466537	558022	4,49,387
Gas	952115	891927	823381	787005	768884	751052	7,30,188
Electricity *	489207	519195	530331	584855	639808	700907	6,93,306
Sub-Total	**1644845**	**1655515**	**1665042**	**1819146**	**1875228**	**2009982**	**1,872,881**
Annual Growth Rate	**3.74%**	**0.65%**	**0.58%**	**9.26%**	**3.08%**	**7.19%**	**-6.82%**
* @ 3412 Btu/k Wh.							
Industrial							
Oil	1384433	1305675	1309459	2013945	1992437	1785880	1,307,193
Gas*	7393301	7036680	6868906	6900651	7882359	7638566	6,477,217
Electricity**	1817171	1983592	2034309	2038889	1955361	2236985	2,342,205
Coal	3661193	3446131	4631627	4975472	6097816	8940477	10,292,739
Sub-Total	**14256099**	**13772078**	**14844302**	**15928956**	**17927974**	**20601909**	**20,419,355**
Annual Growth Rate	**-5.18%**	**-3.40%**	**7.79%**	**7.31%**	**12.55%**	**14.91%**	**-0.89%**
*Includes energy consumption in fertilizer production. ** @ 3412 Btu/k Wh.							
Agricultural							
Oil*	33158	48605	38,791	15119	13201	15134	15,649
Electricity**	626827	675099	654221	694395	750993	824859	7,98,870
Sub-Total	**659986**	**723704**	**693012**	**709513**	**764194**	**839993**	**8,14,519**
Annual Growth Rate	**-8.39%**	**9.65%**	**-4.24%**	**2.38%**	**7.71%**	**9.92%**	**-3.03%**
*HSD consumption for tractors in agriculture sector is not separately available and is included in the transport sector. Agriculture sector represents LDO only. ** @ 3412 Btu/k Wh.							

Table A-58: Energy Consumption by Sector

(TOE)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Transport							
Aviation Fuel	481,611	501,906	427,344	477,992	499,677	473,929	3,61,405
Motor Spirit	3,505,959	4,057,635	4,984,851	6,076,351	7,004,423	7,847,016	8,084,795
HOBC	9,632	11,641	21,618	40,878	93,157	129,380	89,970
E-10	9,402	2,720	0	0	0	0	0
Kerosene	185	78	74	59	38	41	25
HSD	6,360,708	6,308,838	6,593,609	7,181,583	7,834,580	8,537,787	7,013,274
LOD	96	0	0	715	0	0	0
Furnace Oil	377	651	669	1,509	2,558	426	327
Electricity*	0	0	0	0	0	0	0
Natural Gas**	2,345,331	2,050,646	1,556,505	1,508,246	1,573,536	1,648,649	1,523,315
Sub-Total	**12,713,300**	**12,934,115**	**13,584,670**	**15,287,332**	**17,007,968**	**18,637,229**	**17,073,111**
Annual Growth Rate	1.20%	1.74%	5.03%	12.53%	11.26%	9.58%	-8.39%

* @ 3412 Btu/k Wh. Includes railway traction. ** Compressed Natural Gas (CNG)

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Other Government Sector							
Oil	333,444	376,403	383,222	405,220	385,300	407,198	4,29,790
Electricity*	379,161	394,047	394,502	423,597	467,805	545,379	7,08,007
LPG	78,993	81,674	132,455	297,687	350,078	290,989	2,17,011
Gas	-	-	-	-	-	-	1,246,306
Sub-Total	**791,598**	**852,124**	**910,179**	**1,126,504**	**1,203,183**	**1,243,567**	**2,601,113**
Annual Growth Rate	3.72%	7.65%	6.81%	23.77%	6.81%	3.36%	109.17%

* @ 3412 Btu/kWh

Sector	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Sector-wise detail							
Domestic	10,119,014	9,881,983	10,286,929	10,513,575	11,343,757	11,660,210	12,214,708
Commercial	1,644,845	1,655,515	1,665,042	1,819,146	1,875,228	2,009,982	1,872,881
Industrial	14,256,099	13,772,078	14,844,302	15,928,956	17,927,974	20,601,909	20,419,355
Agricultural	659,986	723,704	693,012	709,513	764,194	839,993	8,14,519
Transport	12,713,300	12,934,115	13,584,670	15,287,332	17,007,968	18,637,229	17,073,111
Other Govt.	791,598	852,124	910,179	1,126,504	1,203,183	1,243,567	2,601,113
Total	**40,184,842**	**39,819,518**	**41,984,134**	**45,385,026**	**50,122,304**	**54,992,890**	**54,181,168**

Source:- Hydrocarbon Development Institute of Pakistan (Energy Year Book).

Table A-59: International Shipping-Entered and Cleared at Karachi Port/Port Qasim

Port/Year	Vessels Entered			Vessels Cleared		
	Number	Net registered tonnage		Number	Net registered tonnage	
		In ballast	With cargo		In ballast	With cargo
Karachi Port						
2008-09	2,487	2,930	19,791	1,693	4,168	11,346
2009-10	2,376	2,395	21,939	1,595	3,613	12,390
2010-11	2,142	1,873	24,527	1,506	2,636	14,791
2011-12	1,635	1,483	20,199	1,194	2,505	21,383
2012-13	1,671	1,907	21,140	1,478	3,473	14,396
2013-14	1,657	1,563	24,343	1,277	3,722	14,839
2014-15	1,663	2,251	23,677	1,148	3,890	47,283
2015-16	1,683	5,349	31,325	1,007	4,089	51,673
2016-17	1,699	6,865	26,887	967	4,318	61,574
2017-18	1,739	2,437	29,610	892	3,368	13,688
2018-19	1205	1387	21957	536	1197	9736
PORT QASIM						
2008-09	1,196	1,062	33,028	1,222	14,342	20,670
2009-10	1,173	909	32,974	1,201	12,793	20,437
2010-11	1,184	890	34,420	1,228	12,283	22,021
2011-12	1,050	828	31,202	1,089	12,127	18,474
2012-13	1,045	791	31,977	1,079	12,025	19,352
2013-14	1,053	845	30,683	1,076	10,579	19,430
2014-15	1,259	996	37,128	1,278	13,301	22,901
2015-16	1,315	1,055	29,792	1,372	8,511	21,834
2016-17	1,361	1,112	32,691	1,409	6,480	25,578
2017-18	1,522	975	38,880	1,557	10,631	27,490
2018-19	1,471	976	33,059	1,490	7,941	24,835

Source:- i. Karachi Port Trust and Port Qasim Authority   ii. Pakistan Statistical Year Book-2018

Table A-60: Number and Registered Tonnage of Native Crafts by Nationalities, which Entered/Cleared in Coastal Shipping with Cargo into/From Karachi Port

Year	Pakistani (Entered &Cleared)		Arabian(Entered)		Arabian (Cleared)	
	No.of Country Crafts	Net Tonnage of Country Crafts	No.of Country Crafts	Net Tonnage of Country Crafts	No.of Country Crafts	Net Tonnage of Country Crafts
2008-09	301,683	773	391	152,697	382	148,986
2009-10	388,876	958	479	194,732	479	194,144
2010-11	373,186	711	360	218,705	351	154,481
2011-12	193,401	517	262	97,080	255	96,321
2012-13	309,905	969	486	151,680	483	158,225
2013-14	168,070	494	242	81,687	252	86,463
2014-15	115,677	353	176	57,960	177	57,717
2015-16	-	-	128	495,09	129	87,436
2016-17	-	-	121	62,480	120	88,779
2017-18	-	-	161	74,863	157	161,085
2018-19	-	-	154	55657	153	138,290

Source:- Karachi Port Trust.

Table A-61: Total Passengers Handled at Civil Airports in Pakistan (Scheduled and Non-scheduled)

(Numbers)

Year	Domestic				International			
	Embarked	Disembark	Transit	Total	Embarked	Disembark	Transit	Total
2008-09	3,086,871	3,086,871	96,233	6,269,975	6,254,908	5,837,371	216,246	12,308,525
2009-10	3,355,041	3,355,041	70,501	6,780,583	4,165,886	3,945,034	193,779	8,304,699
2010-11	3,522,167	3,522,167	108,908	7,153,242	4,363,214	3,837,627	2,59,357	8,460,198
2011-12	3,248,362	3,248,362	98,241	6,594,965	4,826,746	4,330,294	2,55,232	9,412,272
2012-13	3,356,523	3,356,523	78,231	6,791,277	5,008,689	4,568,306	2,09,128	9,786,123
2013-14	3,590,213	3,590,213	44,515	7,224,941	5,544,067	5,224,333	122,497	10,890,897
2014-15	3,160,402	3,160,402	31,954	6,352,758	6,053,727	5,590,406	80,069	11,724,202
2015-16	3,466,052	3,466,052	33,214	6,965,318	7,131,447	6,620,011	93,802	13,845,060
2016-17	3,573,915	3,573,915	34,179	7,182,009	7,307,476	7,425,543	106,747	14,839,766
2017-18	3,646,802	3,646,802	23,965	7,317,569	7,594,337	7,948,202	67,174	15,609,713
2018-19	3,002,554	3,002,554	14,845	6,019,953	7,254,799	7,373,146	38,945	14,666,890

Year	Total (Domestic + International)			
	Embarked	Disembarked	Transit	Total
2008-09	9,341,779	8,924,242	312,479	18,578,500
2009-10	7,520,927	7,300,075	264,280	15,085,282
2010-11	7,885,381	7,359,794	368,265	15,613,440
2011-12	8,075,108	7,578,656	353,473	16,007,237
2012-13	8,365,212	7,924,829	287,359	16,577,400
2013-14	9,134,280	8,814,546	167,012	18,115,838
2014-15	9,214,129	8,750,808	112,023	18,076,960
2015-16	10,597,499	10,086,063	126,816	20,810,378
2016-17	10,881,391	10,999,458	140,926	22,021,775
2017-18	11,241,139	11,595,004	91,139	22,927,282
2018-19	10,257,353	10,375,700	53,790	20,686,843

Source:- Civil Aviation Authority, Karachi.

Table A-62: Air Traffic of Passengers, Freight and Mail of Pakistan International Airlines

Year	Kilometers Flown	Passenger Kilometers performed	Tone kilometers performed			
			Passengers	Freight	Mail	Total
Domestic Scheduled						
2007-08	16,687	1,808,827	162,923	37,833	379	201,135
2008-09	16,839	1,769,896	159294	28,935	278	188,507
2009-10	16,801	1,786,435	160831	27862	178	1,88,871
2010-11	16,974	1,984,827	178913	27510	242	2,06,665
2011-12	16,226	1,883,788	169695	23856	183	1,93,734
2012-13	11,651	1,422,018	128214	18569	69	1,46,852
2013-14	104,47	1,212,607	110399	11042	49	1,21,490
2014-15	13,176	1,400,814	127464	7999	54	1,35,517
2015-16	16,431	1,920,266	173120	8211	92	1,81,423
2016-17	14,258	1,825,369	164304	8282	104	1,72,689
2017-18	13,623	1,641,562	147,851	11,453	96	159,400
International Scheduled						
2007-08	60,031	11,278,558	1,020,288	296,049	2,607	1,318,944
2008-09	62,833	12,456,115	1,121,655	252,542	2,132	1,376,329
2009-10	64,438	1,2761,471	1,151,127	2,79,271	2372	1,432,770
2010-11	69,820	14,224,616	1,287,337	3,00,572	2409	1,590,318
2011-12	68,711	13,779,858	1,250,849	2,64,641	1952	1,517,442
2012-13	51,493	10,815,132	9,83,591	2,17,036	2649	1,203,276
2013-14	51,074	10,690,710	9,73,657	1,46,583	1544	1,121,784
2014-15	54,453	10,310,539	9,37,382	1,17,591	870	1,055,843
2015-16	63,411	11,830,403	1,068,649	1,24,683	669	1,194,001
2016-17	60,949	12,163,435	1,097,077	1,98,413	681	1,296,172
2017-18	56,466	12,333,862	1,114,094	197,475	554	1,312,123

Source:- Civil Aviation Authority, Karachi.

Table A-63: Major Traffic Flows by Airlines during the Year 2019 (Location All)

Airline	Passenger (Number)					Cargo (M. Tones				
	Embarked	Dis-Embarked	Terminal	Transit	Total	Loaded	Un-loaded	Terminal	Transit	Total
DOMESTIC										
Air Blue Ltd (ABQ)	314,485	314,485	628,970	0	628,970	2,070	2,070	4,140	0	4140
Serene Air (SEP)	875,536	875,536	1,751,072	0	1,751,072	7,996	7,996	15,992	0	15,992
Pakistan Int' Airlines (PIA)	1,795,877	1,795,877	3,591,754	14,845	3,606,599	8,498	8,498	16,995	0	16,995
Shaheen Air International (SAI)	16,656	16,656	33,312	0	33,312	161	161	321	0	321
Sub Totals	**3,002,554**	**3,002,554**	**6,005,108**	**14,845**	**6,019,953**	**18,724**	**18,724**	**37,449**	**0**	**37,449**
INTERNATIONAL										
Air Arabia (ABY)	392,449	396,397	788,846	0	788,846	6,500	7	6,506	0	6,506
Air Blue Ltd (ABQ)	618,110	596,263	1,214,373	0	1,214,373	2,167	13	2,180	0	2,180
Air China (CCA)	43,724	62,413	106,137	0	106,137	1,620	7,329	8,949	0	8,949
Srilankan Airlines LTd (ALK)	36,894	36,668	73,562	0	73,562	735	468	1,203	0	1,203
British Airways (BAW)	2,240	2,720	4,960	0	4,960	15	21	36	0	36
China Southern Airlines (CSN)	44,777	50,647	95,424	0	95,424	70	268	399	0	399
Emirates Airlines (UAE)	1,140,336	1,180,292	2,320,628	0	2,320,628	135,050	15,771	150,821	0	150,821
Etihad Airways (ETD)	227,009	250,148	477,157	0	477,157	4,719	1,375	6,093	0	6,093
Fly Dubai (FDB)	453,014	426,872	879,886	0	879,886	5,918	223	6,141	0	6,141
Gulf Air (GFA)	272,168	278,702	550,870	0	550,870	7,621	1,533	9,154	0	9,154
Iraqi Airways (IAW)	8,396	9,747	18,143	0	18,143	0	0	1	0	1
Iran Air (IRA)	8,384	8,927	17,311	0	17,311	2	21	24	0	24
Kuwait Airways (KAC)	43,558	42,532	86,090	0	86,090	2,457	42	2,499	0	2,499
Kam Air (KMF)	5,052	5,770	10,822	0	10,822	4	0	4	0	4
Fly Nas (KNE)	70,851	75,373	146,224	0	146,224	906	5	911	0	911
Malindo Air (MXD)	25,806	24,536	50,342	0	50,342	0	14	14	0	14
Oman Air (OMA)	235,765	237,071	472,836	0	472,836	5,006	1,210	6,217	0	6,217
Salam Air (OMS)	72,158	68,366	1,40,524	0	1,40,524	448	3	450	0	450
Pakistan Int' Airlines (PIA)	1,692,977	1,603,729	3,296,706	24,098	3,320,804	16,505	6,015	22,521	0	22,521
Qatar Airways Company (QTR)	463,134	462,247	925,381	0	925,381	25,552	14,447	39,999	0	39,999
Saudi Arabian Airlines (SVA)	962,519	1,103,839	2,066,358	0	2,066,358	19,155	756	19,911	0	19,911
Shaheen Air International (SAI)	14,761	28,787	43,548	0	43,548	116	21	137	0	137
Saudi Gulf (SGQ)	62,106	60,856	122,962	0	122,962	0	0	0	0	0
Taban	1774	1834	3608	0	3608	0	0	0	0	0
Thai Airways International Ltd. (THA)	168,686	176,625	345,311	14,847	360,158	8,589	8,312	16,900	592	17,492
Turkish Airlines (THY)	182,401	176,080	358,481	0	358,481	9,831	43,092	52,923	0	52,923
Uzbekistan Airways (UZB)	5,750	5,705	11,455	0	11,455	81	2	83	0	83
Sub Totals	**7,254,799**	**7,373,146**	**14,627,945**	**38,945**	**14,666,890**	**253,067**	**100,950**	**354,017**	**592**	**354,609**
Grand Totals	**10,257,353**	**10,375,700**	**20,633,053**	**53,790**	**20,686,843**	**271,791**	**119,674**	**391,466**	**592**	**392,058**

Contd**..**

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Table A-63: Major Traffic Flows by Airlines during the July, 2015 to June, 2019 (Location All)

Airline	Mail (Tons)				
	Loaded	Un-loaded	Terminal	Transit	Total
DOMESTIC					
Air Blue Ltd (ABQ)	0	0	0	0	0
Serene Air (SEP)	0	0	0	0	0
Pakistan Int' Airlines (PIA)	67	67	133	0	133
Shaheen Air International (SAI)	0	0	0	0	0
Sub Totals	**67**	**67**	**133**	**0**	**133**
INTERNATIONAL					
Air Arabia (ABY)	0	0	0	0	0
Air Blue Ltd (ABQ)	0	0	0	0	0
Air China (CCA)	0	30	30	0	30
Srilankan Airlines LTd (ALK)	0	0	0	0	0
British Airways (BAW)	0	0	0	0	0
China Southern Airlines (CSN)	0	0	0	0	0
Emirates Airlines (UAE)	44	411	455	0	455
Etihad Airways (ETD)	113	112	225	0	225
Fly Dubai (FDB)	0	0	0	0	0
Gulf Air (GFA)	51	55	107	0	107
Iraqi Airways (IAW)	0	0	0	0	0
Iran Air (IRA)	170	0	170	0	170
Kuwait Airways (KAC)	0	7	7	0	7
Kam Air (KMF)	0	0	0	0	0
Fly Nas (KNE)	0	0	0	0	0
Malindo Air (MXD)	0	0	0	0	0
Oman Air (OMA)	0	0	0	0	0
Salam Air (OMS)	0	0	0	0	0
Pakistan Int' Airlines (PIA)	96	23	119	0	119
Qatar Airways Company (QTR)	1	111	113	0	113
Saudi Arabian Airlines (SVA)	2,429	19,835	22,265	0	22,265
Shaheen Air International (SAI)	0	0	0	0	0
Saudi Gulf (SGQ)	0	0	0	0	0
Taban	0	0	0	0	0
Thai Airways International Ltd. (THA)	291	135	426	96	522
Turkish Airlines (THY)	0	67	67	0	67
Uzbekistan Airways (UZB)	0	0	0	0	0
Sub Totals	**3,196**	**20,787**	**23,983**	**96**	**24,080**
Grand Totals	**3,263**	**20,854**	**24,116**	**96**	**24,213**

Source: Civil Aviation Authority   Note: Provisional data.

Table A-64: Major Traffic Flows by Airports during the July, 2018 to June, 2019(Location All)

Airline	No of Passenger (Commercial)		
	Domestic	International	Total
Bahawalpur	23,882	0	23,882
Chitral	5,498	0	5,498
D.G Khan	7,205	0	7,205
D.I.Khan	621	0	621
Dalbandin	4,399	0	4,399
Faisalabad	102,049	375,796	477,845
Gilgit	45,137	0	45,137
Gwader	19,039	7,039	26,078
Islamabad BBIAP	1,366,759	3,837,407	5,204,166
Islamkot	258	0	258
Kadanwari Khairpur	1,276	0	1,276
Karachi Jiap	2,526,702	4,060,435	6,587,137
Lahore Aiiap	996,266	3,547,418	4,543,684
Mohenjodaro	8,403	0	8,403
Multan	120,647	903,349	1,023,996
Panjgur	5,570	0	5,570
Peshawar Bkia	191,304	1,210,919	1,402,223
Quetta	335,380	30,829	366,209
Rahim Yar Khan	53,970	0	53,970
Sawan	1,218	0	1,218
Sialkot	32,304	676,248	708,552
Skardu	49,180	0	49,180
SUI	282	0	282
Sukkur	93,592	0	93,592
Turbat	27,177	17,450	44,627
Zhob	1,835	0	1,835
Grand Total	**6,019,953**	**14,666,890**	**20,686,843**

Source: Civil Aviation Authority
Note: Provisional data.

Table A-65: Cargo and Mail Handled at Civil Airports

Year	Cargo Handled at Civil Airports					
	Domestic				International	
	Loaded	Un-loaded	Transit	Total	Loaded	Un-Loaded
2010-11	38119	38119	-	76238	160102	59041
2011-12	34298	34298	-	68596	167219	56112
2012-13	35629	35629	-	71258	196681	57003
2013-14	28597	28597	-	57194	188948	53045
2014-15	19332	19332	-	38664	59608	232417
2015-16	18771	18771	-	37542	180523	131250
2016-17	33435	33435	-	66870	161875	81795
2017-18	38119	38119	-	76238	166845	71233

Year	International		Domestic & International			
	Transit	Total	Loaded	Un-loaded	Transit	Total
2010-11	560	219704	198221	97160	560	295941
2011-12	498	223830	201518	90410	498	292426
2012-13	474	254160	232310	92633	475	325418
2013-14	504	242498	217546	81642	504	299692
2014-15	538	232955	192141	78939	538	271618
2015-16	526	312299	199295	150021	526	349842
2016-17	647	244319	195311	115230	647	311188
2017-18	881	238960	204964	109352	881	315197

Year	Mail Handled at Civil Airports					
	Domestic				International	
	Loaded	Un-loaded	Transit	Total	Loaded	Un-Loaded
2010-11	1456	1456	-	2912	593	898
2011-12	1538	1538	-	3076	646	926
2012-13	993	993	-	1986	762	835
2013-14	1255	1255	-	2510	659	777
2014-15	82	82	-	164	755	2527
2015-16	93	93	-	186	573	13120
2016-17	97	97	-	194	540	13561
2017-18	204	204	-	408	688	1232

Year	International		Domestic & International			
	Transit	Total	Loaded	Un-loaded	Transit	Total
2010-11	17	1508	2048	2354	17	4419
2011-12	10	1582	2184	2465	10	4659
2012-13	12	1609	1755	1827	12	3594
2013-14	15	1451	1914	2032	15	3961
2014-15	18	3300	837	2608	18	3463
2015-16	8	13700	666	13213	8	13887
2016-17	8	14109	636	13658	8	14302
2017-18	53	1974	892	1436	53	2381

Source: Civil Aviation Authority

Table A-66: Transport Statistics

Year	Railways						Length of Roads (Km.)		
	Route kilometers	Number of Passengers Carried (Million)	Freight Carried (M.Tons)	Freight Tone kilometers (Million)	Locom- otives (Nos.)	Freight Wagons (Nos.)	Total	High Type	Low Type
2008-09	7,791	82.54	6.94	5,896	551	17,259	260200	177060	83140
2009-10	7791	74.93	5.83	4847	528	16499	260040	18090	79850
2010-11	7791	64.90	2.61	1757	528	18468	259463	180866	78597
2011-12	7791	41.90	1.30	403	522	17611	261595	181940	79655
2012-13	7791	42.00	1.00	419	493	16635	263415	182900	80515
2013-14	7791	48.00	1.00	1090	421	16179	263755	184120	79635
2014-15	7791	52.90	3.60	3301	458	15452	265404	188430	76974
2015-16	7791	52.19	5.00	4774	460	15164	265905	190355	75550
2016-17	7791	52.39	5.63	5031	455	16085	267002	193871	73131
2017-18	7791	54.91	8.35	8080	472	16159	268935	197452	71483
2018-19	7791	60.40	8.30	8304	472	16142	270971	201100	69872

Source:- Pakistan Economic Survey

Table A-67: Number of Motor Vehicles Registered

(000 Numbers)

Year	Motor Cars Jeeps & Station Wagons	Motor Cabs/ Taxis	Buses/ Mini Buses	Trucks	Motor Cycle (2 wheels)	Motor Cycle/ Motor Rickshaws (3 Wheels)	Others	Total
2001	1198.9	90.1	161.5	155.8	2283.4	107.6	786.9	4784.1
2002	1279.4	90.1	155.6	169.3	2341.1	120.6	814.2	4970.1
2003	1289.9	90.4	165.8	177.5	2379.3	127.4	834.4	5064.6
2004	1298.4	90.5	166.1	179.7	2609.4	138.2	848.7	5331.0
2005	1318.5	91.9	168.7	182.5	2649.9	101.1	861.9	5374.4
2006	1372.2	105.4	175.6	190.0	2757.8	136.4	896.0	5633.4
2007	1440.8	103.4	184.4	199.4	2895.7	143.2	940.9	5907.8
2008	1549.9	104.4	187.4	202.6	3039.8	156.1	961.6	6201.8
2009	1657.9	106.5	195.2	210.9	3215.6	167.9	1005.4	6559.4
2010	1726.3	122.9	198.8	216.1	4305.1	201.8	1081.9	7853.0
2011	1881.6	124.7	202.5	225.1	5782.0	266.4	1178.9	9661.0
2012	2094.3	143.9	215.3	240.9	7500.2	323.2	1270.8	11788.6
2013	2281.1	145.2	220.3	247.2	9169.5	380.6	1341.0	13784.9
2014	2437.7	145.4	224.4	253.6	11006.4	466.2	1406.8	15940.6
2015	2715.3	167.7	229.3	261.8	13081.4	559.1	1487.5	18502.1
2016	2932.6	170.8	235.5	269.3	15223.9	670.5	1555.3	21057.9
2017 (R)	3195.4	170.9	242.1	277.9	17507.7	761.4	1642.7	23798.2
2018 (R)	3494.0	171.1	249..0	284.7	19783.9	841.4	1724.4	26548.7
2019 (P)	3700.4	171.1	253.7	287.7	21926.5	915.8	1796.7	29051.9

Source:- Pakistan Economic Survey
(P)   Provisional   (R)   Revised

Table A-68: Motor Vehicles on Road

(000 Number)

Year	Motor Cycles/ Scooters	Motor Cars	Jeeps	Station Wagons	Tractors	Buses
2005-06	3,791.0	1,999.2	65.7	140.8	822.3	103.6
2006-07	4,463.8	1,682.2	85.4	169.1	877.8	108.4
2007-08	5,037.0	1,853,5	82.9	163.2	900.5	109.8
2008-09	5,368.0	2,029.1	79.0	155.6	911.7	111.1
2009-10	5,412.1	2,387.2	78.3	171.4	940.8	123.3
2010-11	5,468.8	2,822.2	78.5	175.2	970.9	125.6
2011-12	4,463.6	3,205.0	78.6	178.3	1068.0	138.2
2012-13	5,550.0	3,600.0	78.7	180.1	1,128.7	130.2
2013-14	6,100.0	4,600.0	60.0	185.0	1,228.0	140.0
2014-15	6405.0	4,820.0	64.0	191.0	1283.0	148.0
2015-16	6669.3	6131.7	54.2	192.0	1351.6	150.6
2016-17	11975.3	6954.0	69.6	201.9	1430.1	156.3
2017-18	14060.9	7183.5	80.0	206.6	1460.2	159.2
2018-19	14623.3	7470.8	83.2	214.9	1518.6	165.6

Year	Taxi Cabs Taxis	Rickshaws	Delivery Vans	Trucks	Others	Total
2005-06	122.1	77.8	143.3	151.8	166.8	7,084.5
2006-07	119.1	79.0	148.9	173.3	156.5	8,063.6
2007-08	129.8	89.3	163.5	177.8	171.0	8,878.5
2008-09	138.6	88.4	167.2	181.9	183.2	9,413.7
2009-10	146.4	89.1	170.4	200.5	167.2	9866.4
2010-11	154.6	89.8	173.6	209.5	175.2	10443.8
2011-12	158.7	102.4	176.6	230.5	185.2	11488.2
2012-13	160.7	120.5	180.0	220.5	226.7	11576.1
2013-14	168.8	108.0	181.0	240.0	231.6	13242.4
2014-15	178.0	112.0	190.0	252.0	242.6	13885.6
2015-16	186.5	118.1	191.4	263.8	259.6	15568.8
2016-17	197.4	122.0	204.2	276.2	271.6	21858.6
2017-18	197.7	128.1	210.1	280.0	301.7	24389.5
2018-19	205.6	133.2	218.5	291.2	313.8	25238.7

Source:- Pakistan Economic Survey

Table A-69: Post and Telecommunications

Year	Telephones (000 Nos)	TV Sets (000 Nos)	Mobile Phone (000 Nos)	No. of Post Offices Urban	No. of Post Offices Rural	No. of Post Offices Total	Broad Band subscribers (000 Nos)
2001-02	3,656	3,598	1,698.5	1,983	10,284	12,267	-
2002-03	4,940	3,716	2,404.4	1,808	10,446	12,254	-
2003-04	4,460	3,828	5,022.9	2,267	9,840	12,107	-
2004-05	5,191	6,763	12,771.2	1,831	10,499	12,330	-
2005-06	5,128	7,972	34,506.6	1,845	10,494	12,339	26.6
2006-07	4,806	9,004	63,160.9	1,849	10,494	12,343	45.2
2007-08	4,546	9,940	88,019.8	1,849	10,793	12,342	168.0
2008-09	3,523	10,557	94,342.0	1,852	10,514	12,366	413.8
2009-10	3,417	11,136	99,185.8	1,846	10,495	12,340	688.4
2010-11	5,720*	11,704	108,894.5	1,580	10,455	12,035	1491.5
2011-12	5,803*	12,491	120,151.2	1,797	10,238	12,035	2101.3
2012-13	6,371*	13,729	128,933.6	2,178	10,650	12,828	2723.7
2013-14	5,232*	14,245	139,974.8	1,813	10,264	12,077	3795.9 @
2014-15	3,931	-	114,658.4	1,813	10,264	12,077	16,885.5
2015-16	3,295	-	133,241.5	1,782	9,962	11,744	40,148.0
2016-17	2,986	-	139,758.1	2,046	9,450	11,496	44,586.7
2017-18	2,885	-	150,238.7	2,046	9,450	11,496	58,339.8
2018-19	2,575	-	161,021.6	1,717	8,352	10,069	71,026.1

Source:-   Pakistan Economic Survey 2018-19
*   Included Card pay phones   -   Not available
@   Includes dial-up and broadband connection.

Table A-70: Traffic Accidents

(Number)

Year	Total number of accident	Accident		Persons		Total Number of Vehicles nvolved
		Fatal	Non- Fatal	Killed	Injured	
Pakistan						
2001-02	10,033	4,379	5,654	5,248	11,922	10,765
2002-03	9,377	4,045	5,332	4,813	10,643	10,100
2003-04	10,308	4,184	6,124	5,199	12,927	10,852
2004-05	9,896	4,250	5,646	5,112	12,401	10,912
2005-06	9,492	4,115	5,377	4,868	11,415	10,565
2006-07	10,466	4,535	5,931	5,465	12,875	11,481
2007-08	10,466	4,610	5,856	5,615	12,096	11,456
2008-09	9,496	4,145	5,351	4,907	11,037	10,322
2009-10	9,747	4,378	5,369	5,280	11,173	10,496
2010-11	9,723	4,280	5,443	5,271	11,383	10,822
2011-12	9,140	3,966	5,174	4,758	10,145	9,986
2012-13	8,988	3,884	5,104	4,719	9,710	9,876
2013-14	8,359	3,500	4,859	4,348	9,777	9,423
2014-15	7,865	3,214	4,651	3,,954	9,661	8,949
2015-16	9,100	3,591	5,509	4448	11,544	10,636
2016-17	9,582	4,036	5,546	5,047	12,696	11,317
2017-18	11,121	4,829	6,292	5,948	14,489	13,134
Balochistan						
2001-02	345	101	244	129	351	395
2002-03	406	132	274	138	359	451
2003-04	415	141	274	148	420	469
2004-05	481	194	287	217	638	513
2005-06	520	206	314	254	741	594
2006-07	551	233	318	284	840	612
2007-08	490	236	254	314	914	578
2008-09	431	206	225	248	747	545
2009-10	379	193	186	245	496	444
2010-11	311	158	153	191	350	382
2011-12	324	139	185	161	480	374
2012-13	297	136	161	163	362	381
2013-14	342	173	169	247	480	434
2014-15	315	147	168	178	440	389
2015-16	357	178	179	207	504	470
2016-17	401	209	192	321	567	537
2017-18	496	259	237	313	624	715
Khyber Pakhtunkhwa						
2001-02	2,459	641	1,818	720	2,790	2,633
2002-03	2,402	583	1,819	708	2,662	2,783
2003-04	2,728	652	2,076	919	3,735	2,956
2004-05	2,666	682	1,983	830	3,979	3,133
2005-06	2,732	716	2,016	875	4,006	3,366
2006-07	2,942	779	2,163	1,006	4,421	3,756
2007-08	2,893	755	2,138	942	3,884	3,634
2008-09	2,392	644	1,748	786	3,340	2,975
2009-10	2,559	712	1,847	921	3,560	3,128
2010-11	2,722	773	1,949	986	4,153	3,479
2011-12	2,772	785	1,897	953	3,913	3,501
2012-13	2,968	846	2,122	1,059	4,016	3,736
2013-14	3,120	877	2,243	1,033	4,257	3,934
2014-15	3,399	942	2,457	1,137	4,524	4,260
2015-16	4,287	1,083	3,204	1,299	5,527	5,490
2016-17	4,256	1,103	3,153	1,317	5,804	5,736
2017-18	4,425	1,119	3,306	1,295	6,093	6,052

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Table A-70: Traffic Accidents

(Number)

Year	Total number of accidents	Accident		Persons		Total Number of vehicles involved
		Fatal	Non- Fatal	Killed	Injured	
Punjab						
2001-02	5,270	2,641	2,629	3,214	6,804	5,523
2002-03	4,771	2,386	2,385	2,884	6,159	5,008
2003-04	5,015	2,407	2,608	2,977	6,714	5,195
2004-05	4,969	2,447	2,522	2,988	6,418	5,175
2005-06	4,431	2,105	2,326	2,500	5,408	4,571
2006-07	5,355	2,591	2,764	3,096	6,311	5,355
2007-08	5,522	2,721	2,801	3,293	6,163	5,522
2008-09	5,240	2,471	2,769	2,912	5,790	5,240
2009-10	5,344	2,590	2,754	3,083	5,856	5,344
2010-11	5,420	2,591	2,829	3,167	5,809	5,420
2011-12	4,990	2,361	2,629	2,888	5,071	4,990
2012-13	4,587	2,213	2,374	2,692	4,515	4,587
2013-14	3,696	1,717	1,979	2,145	3,941	3,696
2014-15	3054	1435	1619	1750	3652	3054
2015-16	3288	1576	1712	2053	4550	3288
2016-17	3819	1989	1830	2494	5231	3819
2017-18	5093	2708	2385	3371	6772	5093
Sindh						
2001-02	1,959	996	963	1,185	1,977	2,214
2002-03	1,798	944	854	1,083	1,463	1,858
2003-04	2,150	984	1166	1,155	2,058	2,232
2004-05	1,780	926	854	1,077	1,366	2,091
2005-06	1,809	1,088	721	1,239	1,260	2,034
2006-07	1,618	932	686	1,079	1,303	1,758
2007-08	1,561	898	663	1,066	1,135	1,722
2008-09	1,433	824	609	961	1,160	1,562
2009-10	1,465	883	582	1,031	1,261	1,580
2010-11	1,270	758	512	927	1071	1,541
2011-12	1,054	681	373	756	681	1,121
2012-13	935	582	353	696	637	960
2013-14	945	613	332	791	893	1,103
2014-15	881	583	298	771	863	1,029
2015-16	924	634	290	749	754	1,144
2016-17	880	608	272	786	970	1,009
2017-18	848	586	262	802	838	1,015

Source:- Crime Branch of Provincial Police Departments.

Table A-71: River In-flow at Rim Stations in Pakistan

(Million Acre Feet)

Year	Indus at Kalabagh U/S			Jhelum at Mangla U/S			Chenab at Marala U/S		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
1996-97	-	-	-	24.93	4.11	29.04	27.48	4.41	31.89
1997-98	-	-	-	16.96	7.06	24.02	21.74	6.55	28.29
1998-99	-	-	-	18.11	3.61	21.72	23.16	4.78	27.94
1999-00	-	-	-	11.24	3.19	14.43	18.70	4.35	23.05
2000-01	-	-	-	10.27	2.28	12.55	17.20	2.73	19.93
2001-02	-	-	-	8.23	3.66	11.89	16.00	2.90	18.90
2002-03	-	-	-	12.31	5.10	17.41	18.02	5.47	23.49
2003-04	-	-	-	17.67	5.00	22.67	21.50	4.36	25.86
2004-05	-	-	-	11.74	6.72	18.46	14.90	6.41	21.31
2005-06	-	-	-	17.71	5.46	23.17	21.12	4.02	25.14
2006-07	-	-	-	16.43	6.78	23.21	21.38	6.33	27.71
2007-08	-	-	-	13.51	4.18	17.69	16.98	3.62	20.60
2008-09	65.89	13.51	79.40	13.38	5.88	19.26	16.21	3.61	19.82
2009-10	68.18	13.22	81.40	16.48	4.57	21.05	14.46	3.39	17.85
2010-11	91.18	14.51	105.69	20.31	5.42	25.73	21.02	4.78	25.80
2011-12	65.85	10.93	76.78	15.28	4.17	19.45	18.84	3.60	22.44
2012-13	66.27	15.39	81.66	14.70	5.38	20.08	17.14	4.43	21.57
2013-14	82.38	14.88	97.26	15.22	5.07	20.29	18.70	4.45	23.15
2014-15	65.88	15.52	81.40	19.93	6.39	26.32	21.14	5.47	26.61
2015-16	83.20	17.76	100.96	20.71	7.87	28.58	22.83	4.48	27.31
2016-17	76.74	13.93	90.67	15.15	4.57	19.72	18.05	3.98	22.03
2017-18	72.32	11.94	84.26	15.80	2.41	18.21	20.71	2.84	23.55

Year	Ravi Component at Balloki (a)			Sutlej Component at Sulemanki (b)		
	Kharif	Rabi	Total	Kharif	Rabi	Total
1996-97	5.14	0.47	5.61	2.48	0.46	2.94
1997-98	3.91	1.99	5.90	1.79	1.68	3.47
1998-99	3.40	1.20	4.60	4.08	3.58	7.66
1999-00	0.97	0.26	1.23	1.15	0.17	1.32
2000-01	0.56	0.11	0.67	0.30	0.10	0.40
2001-02	0.93	0.43	1.36	0.01	0.01	0.02
2002-03	0.41	0.45	0.86	0.00	0.03	0.03
2003-04	0.93	0.09	1.02	0.02	0.09	0.11
2004-05	0.39	0.40	0.79	0.00	0.04	0.04
2005-06	0.70	0.14	0.84	0.31	0.04	0.35
2006-07	1.16	0.32	1.48	0.07	0.08	0.15
2007-08	0.81	0.23	1.04	0..16	0.04	0.20
2008-09	1.58	0.26	1.84	2.17	0.02	2.19
2009-10	0.11	0.18	0.29	0.00	0.01	0.01
2010-11	1.39	0.66	2.05	1.87	0.38	2.25
2011-12	1.48	1.08	2.56	3.57	0.22	3.79
2012-13	0.97	0.64	1.61	0.15	0.02	0.17
2013-14	3.79	0.98	4.77	2.10	0.05	2.15
2014-15	2.60	1.10	3.70	0.13	0.07	0.20
2015-16	3.00	0.94	3.94	2.02	0.14	2.16
2016-17	1.67	0.79	2.46	0.12	0.23	0.35
2017-18	2.20	0.63	2.83	0.40	0.95	1.35

Source:-Water and Power Development Authority (WAPDA).
 (a) Ravi at Balloki (Above)-UCC Tail-MR Tail-QB Trail.
 (b) Sutlej at Suleimanki (Above)- BS-I & II Tails.

Table A-72: Population Served with Water Supply and Sanitation Facilities in WASA Area, District Lahore

Description	Unit	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Population in WASA area	Million	6.665	7.000	7.200	7.400	7.900	7.900
Population served with pipe water supply	Million	5.932	6.200	6.800	7.100	7.700	7.700
Percentage of Total Population within WASA area I	%	89.0	89	95	96	98	98
Quantum of Water Supply(Daily)	Million Gallons	410	435	475	500	540	540
Population Served with Sewerage & Drainage	Million	5.955	6.200	6.700	7.00	7.700	7.700
Facilities Percentage of Total population	%	89.3	89	94	95	98	98
Per Person Supply	GPCD	69	70	70	70	70	70

Source:- Water and Sanitation Agency (WASA), Lahore

Table A-73: Population Served with Water Supply, Sewerage and Drainage Facilities of Various Cities

Particulars	Unit	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Rohri							
1. Total Population(approx.)	Thousand	53.799	53.868	87.688	89.556	91.464	93.412
2. Population Served with Pipe Water Supply	Thousand	53.799	53.868	82.679	82.679	82.679	82.679
3. Percentage of Total Population	%	100	100	94	92	90	89
4. Quantum of water Supply (daily)	Million Gallons	1.614	1.676	2.480	2.480	2.480	2.480
5. Population Served with Sewerage & Drainage Facilities.	Thousand	53.799	53.868	28.679	82.679	82.679	82.679
6. Percentage of Total Population	%	100	100	94	92	90	89
Tando Allahyar							
1. Total Population(approx.)	Thousand	161.177	168.562	173.653	178.898	184.301	189.867
2. Population Served with Pipe Water Supply	Thousand	90.500	90.500	90.500	90.500	90.500	90.500
3. Percentage of Total Population	%	59.9	53.689	53	51	50	48
4. Quantum of water Supply (daily)	Million Gallons	2.715	2.715	2.715	2.715	2.715	2.715
5. Population Served with Sewerage & Drainage Facilities.	Thousand	161.177	168.562	168.562	168.562	168.562	168.562
6. Percentage of Total Population	%	100	100	97	94	91	89
Umar Kot							
1. Total Population(approx.)	Thousand	65.853	68.386	70.691	73.074	75.537	78.083
2. Population Served with Pipe Water Supply	Thousand	65.853	68.853	70.691	73.074	75.537	78.083
3. Percentage of Total Population	%	100	100	100	100	100	100
4. Quantum of water Supply (daily)	Million Gallons	1.976	2.052	2.120	2.192	2.266	2.342
5. Population Served with Sewerage & Drainage Facilities.	Thousand	39.404	39.404	63.622	65.766	67.983	70.274
6. Percentage of Total Population	%	70	70	90	90	90	90

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Table A-73: Population Served with Water Supply, Sewerage and Drainage Facilities of Various Cities

Particulars	Unit	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Thull							
1. Total Population(approx.)	housand	53.799	53.868	55.145	56.452	57.790	59.160
2. Population Served with Pipe Water Supply	Thousand	53.799	53.868	55.145	56.452	57.790	59.160
3. Percentage of Total Population	%	100	100	100	100	100	100
4. Quantum of water Supply (daily)	Million Gallons	1.552	1.614	1.654	1.694	1.733	1.774
5. Population Served with Sewerage & Drainage Facilities.	Thousand	51.730	53.799	55.145	56.452	57.790	59.160
6. Percentage of Total Population	%	100	100	100	100	100	100
Kotri							
1. Total Population(approx.)	Thousand	114.494	118.898	122.393	124.024	127.622	131.374
2. Population Served with Pipe Water Supply	Thousand	114.494	118.898	122.393	124.024	127.622	131.374
3. Percentage Of Total Population	%	100	100	100	100	100	100
4. Quantum Of Water Supply (Daily)	Million Gallons	3.435	3.567	3.671	3.721	3.828	3.941
5. Population Served With Sewerage and Drainage Facilities	Thousand	114.494	118.898	122.393	124.024	127.622	131.374
6. Percentage Of Total Population	%	100	100	100	100	100	100
Faisalabad							
1. Total Population(approx.)	Thousand	3200	3240	3305	3372	3400	3468
2. Population Served with Pipe Water Supply	Thousand	19200	19500	2313	2360	2380	2428
3. Percentage Of Total Population	%	60	60.18	70	70	70	70
4. Quantum Of Water Supply (Daily)	Million Gallons	62	66	95	110	110	110
5. Population Served With Sewerage and Drainage Facilities	Thousand	2304	2350	2380	2427	2448	2496
6. Percentage Of Total Population	%	72	72.53	72	72	70	72

Source:- 1. Public Health Engineering Research Laboratory, Hyderabad.
2. Faisalabad Development Authority

Table A-74: Distance to Water Source by Province and Source, PSLM 2019

Province and Water source	Percentage of Households					
	Inside The House	0-0.5 Km	0.5-1 km	1-2 Km	2-5 Km	Over 5 Km
Punjab						
Tap water	15.3	4.2	3.4	1.0	.0	.0
Hand pump	25.1	12.1	22.4	43.5	42.7	23.7
Motor Pump	55.1	26.1	7.7	17.0	3.3	3.2
Dug well closed	.2	.5	.1	.0	.0	.0
Dug well Open	.0	.2	.5	.2	.0	.0
Spring Protected	.0	.2	.3	.5	.0	.0
Spring Protected	.1	.3	.9	.0	.5	.0
River/Pond/Canal/Stream	.0	1.0	.0	1.6	1.7	.0
Bottled Water	.3	1.4	2.6	1.4	6.4	1.9
Tanker/Truck/Water Bearer	3.6	3.6	3.4	2.0	10.0	27.1
Filtration Plant	.2	49.8	58.4	32.2	34.2	40.3
Others	.0	.6	.3	.7	1.3	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Sindh						
Tap water	41.2	5.8	7.1	.6	1.3	2.2
Hand pump	36.9	42.8	28.3	17.3	4.9	.0
Motor Pump	16.3	8.2	2.5	.3	1.8	.7
Dug well closed	1.5	2.4	.4	1.1	.0	1.4
Dug well Open	.0	4.8	5.4	22.0	1.8	6.3
Spring Protected	.0	.5	.4	.0	.0	.0
Spring Protected	.1	.1	.5	.0	.7	.0
River/Pond/Canal/Stream	.0	7.8	9.8	7.8	2.8	.0
Bottled Water	1.8	18.6	33.2	20.5	23.6	32.9
Tanker/Truck/Water Bearer	1.9	1.4	4.8	27.5	58.8	54.9
Filtration Plant	.3	5.7	4.6	2.1	.9	1.5
Others	.0	1.9	3.1	.8	3.4	.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Khyber Pakhtunkhwa *						
Tap water	28.5	10.8	.9	.0	.0	.0
Hand pump	14.4	6.7	2.3	3.8	3.9	15.0
Motor Pump	39.7	25.1	14.6	1.6	1.8	.0
Dug well closed	5.7	7.5	8.4	1.7	.0	6.2
Dug well Open	3.3	9.7	7.2	8.7	3.3	.0
Spring Protected	2.0	4.2	4.4	.0	.0	.0
Spring Protected	5.8	18.3	42.9	50.8	11.8	11.8
River/Pond/Canal/Stream	.0	13.3	16.6	22.6	61.2	22.2
Bottled Water	.0	.1	.0	.0	.0	.0
Tanker/Truck/Water Bearer	.7	1.7	.0	10.1	12.4	44.9
Filtration Plant	.0	.8	1.9	.7	.0	.0
Others	.0	1.7	.8	.0	5.5	.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

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Table A-74: Distance to Water Source by Province and Source, PSLM 2018-2019

Province and Water source	Percentage of Households					
	Inside The House	0-0.5 Km	0.5-1 km	1-2 Km	2-5 Km	Over 5 Km
Balochistan						
Tap water	51.1	4.9	1.2	.0	.0	.0
Hand pump	5.3	11.2	5.0	4.0	.0	.0
Motor Pump	18.9	35.4	36.4	36.2	10.2	.0
Dug well closed	5.0	9.2	2.2	2.7	17.2	.0
Dug well Open	2.2	2.7	7.5	.0	.0	1.2
Spring Protected	.3	1.4	2.0	5.2	.0	.0
Spring Protected	.5	2.6	11.1	13.0	3.6	5.7
River/Pond/Canal/Stream	.0	18.9	21.6	9.2	1.8	29.1
Bottled Water	.0	1.6	1.6	3.7	28.6	27.9
Tanker/Truck/Water Bearer	16.7	10.5	9.6	25.1	38.6	36.1
Filtration Plant	.0	.2	.6	.9	.0	.0
Others	.0	1.4	1.2	.0	.0	.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Pakistan						
Tap water	24.7	5.3	3.5	.7	.5	1.0
Hand pump	25.5	18.0	18.5	31.5	23.8	8.7
Motor Pump	42.3	22.6	11.7	13.6	3.2	1.4
Dug well closed	1.6	2.1	1.5	.6	1.3	1.2
Dug well Open	.6	2.3	3.3	5.3	.8	3.1
Spring Protected	.3	.8	1.1	.7	.0	.0
Spring Protected	1.0	2.4	7.5	6.1	1.5	1.7
River/Pond/Canal/Stream	.0	4.6	7.2	5.5	6.0	5.6
Bottled Water	.6	4.9	8.3	5.1	13.7	19.8
Tanker/Truck/Water Bearer	3.2	3.3	4.1	9.4	29.3	42.8
Filtration Plant	.2	32.7	32.2	20.9	17.8	13.5
Others	.0	1.0	1.0	.6	2.2	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source:- Pakistan Social & Living Standards Measurement Survey, PBS
Note: Totals for columns may not add up to 100 because of rounding
*   In PSLM survey 2018-19 FATA included in KP.

Table A-75:   Municipal Solid Waste Disposal System (Transportation) at Selected Cities during 2019

Type of Vehicles	Selected cities by number of vehicles					
	Peshawar	Bannu	Faisalabad	Gujranwala	Lahore	Bahawalpur
Donkey Carts	0	0	250	0	-	0
Bullock Carts	0	0		0	-	0
Compactor	43	1	16	10	237	14
Chain Arm Roll	23	0	28	0	84	4
Mini Dumper	151	0	08	43	147	40
Dumper	0	0	36	0	62	10
Trailer	0	0	-	0	14	0
Excavators	2	0	1	0	2	0
Mechanical Washer	2	0	2	1	14	1
Suzuki Pickup	0	5	48	2	108	0
Bolan	1	0	8	2	54	3
Mini Bus	0	0	-	0	10	0
Tractor Trolleys	35	6	6	48	0	11
Truck	0	0	-	26	1	0
Tractor Loader/Loader	0	2	21	11	64	6
Vacum Sweeper	0	0	-	2	95	0
Mec. Road sweeper	8	0	7	2	0	2
Mazda Compactor	0	0	-	0	0	0
Showel	0	0	2	0	0	0
Water Lorries	8	2	15	2	11	0
Dumpers	0	0	-	0	0	0
Mech Loader	8	2	-	0	0	0
Multi Loader	6	0	-	0	0	0
Master High land pickup	0	0	-	0	0	0

Source:- Tehsil Municipal Administration of each district

Table A-76: Municipal Solid Waste Disposal System (by Number of Employees) at selected cities during 2019

Name of cities	Zone/Sectors	Supervisory Staff	Supervisors	Working Staff	Sweeper/ Sanitary workers	Total staff Col.(3+5)
1	2	3	4	5	6	7
Peshawar	4	36	1	1779	1414	1815
Bannu	7	7	7	267	64	274
Faisalabad	39	209	157	4035	3976	4244
Gujranwala	11	2(5.1)	29		1384	1415
Lahore	27	41	331	8435	8435	8476
Bahawalpur	3		30	443	450	923

Source:- Tehsil Municipal Administration of each district

Table A-77: Municipal Solid Waste Disposal System (Sanitary Landfill/Dumps) at selected cities during 2019

Name of City	Existing Dumps		Proposed land, fill/site
	Number	Size	
Peshawar	1	817 Kanals	Nil
Bannu	1	50 Kanals	NIL
Gujranwala	2	06 Acres 03 Acres	Bakhrewali
Faisalabad	01	45 Acre	01, 150 Acre
Lahore	1 (Lakhodair Landfill/Dumsite	190.7 Acres	Khara, District Kasur** (150 Acres/Approx)
Bahawalpur	1	25 Acres	Moza Nao Abad 87 Acre

Source:- Tehsil Municipal Administration of each district

Table A-78: Garbage Collection System from the Household by Province

Province and Garbage Collection Syste	2013-14			2018-19		
	Urban	Rural	Overall	Urban	Rural	Overall
Punjab						
Municipality	48	2	17	49.7	1.6	19.7
Privately	9	4	6	10.2	2.7	5.5
No Formal System	43	94	77	40.0	95.7	74.8
Total	100	100	100	100.0	100.0	100.0
Sindh						
Municipality	33	2	18	49.8	2.0	27.8
Privately	23	2	13	13.1	1.0	7.5
No Formal System	44	97	69	37.0	96.9	64.6
Total	100	100	100	100.0	100.0	100.0
Khyber Pakhtunkhwa *						
Municipality	66	1	13	51.3	1.1	9.4
Privately	2	0	1	1.9	1.4	1.5
No Formal System	32	99	86	46.9	97.5	89.0
Total	100	100	100	100.0	100.0	100.0
Balochistan						
Municipality	21	1	6	20.2	2.3	7.4
Privately	5	6	5	1.8	1.2	1.4
No Formal System	74	93	89	77.9	96.5	91.3
Total	100	100	100	100.0	100.0	100.0
Pakistan						
Municipality	43	2	17	48.9	1.6	19.6
Privately	14	3	7	10.4	2.1	5.2
No Formal System	43	95	76	40.8	96.3	75.2
Total	100	100	100	100.0	100.0	100.0

Source:- Pakistan Social and Living Standard Measurement Survey, PBS.
Note:-
1. Household reporting the garbage collection system indicated for their household expressed as percentage of the total number of households.
2. Total may not add to 100 because of rounding

* In PSLM survey 2018-19 FATA included in KP.

Table A-79: Type of Sanitation System Used-by Province

Province and Sanitation System	2013-14 PSLM			2018-19 PSLM		
	Urban	Rural	Overall	Urban	Rural	Overall
Punjab						
Underground Drains	56	5	23	58.0	6.2	25.6
Covered Drains	4	5	5	6.6	3.0	4.4
Open Drains	35	48	44	29.4	48.9	41.6
No system	5	41	29	6.0	42.0	28.4
Total	100	100	100	100.0	100.0	100.0
Sindh						
Underground Drains	72	5	41	47.6	3.8	27.4
Covered Drains	1	0	1	16.1	1.4	9.3
Open Drains	23	10	17	28.0	19.2	23.9
No system	3	84	41	8.3	75.6	39.3
Total	100	100	100	100.0	100.0	100.0
Khyber Pakhtunkhwa *						
Underground Drains	6	0	1	8.5	2.1	3.2
Covered Drains	2	1	1	8.6	1.5	2.7
Open Drains	83	39	47	66.3	40.6	44.9
No system	9	60	51	16.5	55.8	49.2
Total	100	100	100	100.0	100.0	100.0
Balochistan						
Underground Drains	33	1	10	15.8	2.3	6.1
Covered Drains	7	2	3	14.7	3.4	6.6
Open Drains	40	13	20	46.5	19.2	26.9
No system	21	84	67	23.0	75.0	60.4
Total	100	100	100	100.0	100.0	100.0
Pakistan						
Underground Drains	59	4	24	50.1	4.8	22.0
Covered Drains	3	3	3	10.1	2.5	5.4
Open Drains	34	38	36	31.8	40.7	37.3
No system	5	55	37	8.0	52.1	35.3
Total	100	100	100	100.0	100.0	100.0

Source**: -** Pakistan Social and Living Standard Measurement Survey, PBS.
Note: - 1.   Households connected to the drainage system indicated, expressed as a percentage
          of the total number of households.
      3.   Totals may not add to 100 because of rounding

      *   In PSLM survey 2018-19 FATA included in KP.

Table A-80: Daily Analysis of Air Quality at Jail Road Lahore- 1st July 2019

Time (Hours)	PM10 Ug/m³	PM 2.5 ug/m³	CO mg/m³	NO2 ug/m³	No ug/m³	O3 ug/m³	SO2 ug/m³
12:00 AM	138.77	35.4	6.12	109.65	8.35	40.16	16.16
1:00 AM	138.02	33.92	6.8	150.99	25.21	6.21	11.17
2:00 AM	120.4	31.8	5.62	148.78	19.15	9.05	11.11
3:00 AM	122.59	36.28	6.58	133.16	83.85	9.88	12.36
4:00 AM	126.78	37.93	7.71	130.33	118.6	9.87	17.26
5:00 AM	122.44	38.64	4.88	88.17	20.24	8.56	15.82
6:00 AM	128.9	39.75	4.39	76.43	15.33	12.91	21.45
7:00 AM	121.55	39.61	3.96	54.5	9.31	38.66	24.95
8:00 AM	122.05	40.39	4.05	51.59	8.15	80.34	30.72
9:00 AM	114.77	35.59	3.79	35.01	7.2	118.32	35.08
10:00 AM	106.67	34.17	3.6	31.79	8.87	138.32	33.86
11:00 AM	96.92	22.79	3.24	16.4	6.37	153.72	10.65
12:00 PM	104.92	25.71	3.16	13.85	6.53	169	7.73
1:00 PM	113.81	25.4	3.24	16.93	7.52	180.29	6.5
2:00 PM	119.89	27.11	3.18	15.88	6.89	179.64	6.58
3:00 PM	137.47	31.58	3.28	21.99	7.75	148.18	2.9
4:00 PM	139.35	31.48	3.06	22.1	7.15	172.36	3.93
5:00 PM	126.89	31.08	2.87	19.98	6.85	166.72	4.08
6:00 PM	134.33	31.27	3.12	35.02	8.06	161.18	4.82
7:00 PM	1070	100.01	5	88.03	-32	98.26	13.04
8:00 PM	329.13	47.57	3.66	32.68	6.79	137.27	1.84
9:00 PM	73.93	20.48	4.02	59.16	7.75	113.2	-1.73
10:00 PM	54.31	21.23	4.39	49.99	-14.8	104.11	6.78
11:00 PM	65.27	22.24	4.32	68.57	6.45	86.26	3.56

Source: Environment Protection Department, Govt. of Punjab, Lahore

Table A- 81: Daily Quality Monitoring Report of Ambient Air of Various Cities of Punjab During November 2018

Parameter Description/ Location	Date	Respirable Particulate Matter (PM10) Ug/m³	Respirable Particulate Matter (PM2.5) Ug/m³	Nitrogen Oxides as (NO) Ug/m³	Nitrogen Oxides as (NO2) Ug/m³	Sulphure Dioxide (SO2) Ug/m³	Ozone (O3) Ug/m³
1	2	3	4	5	6	7	8
PEQS		150	35	40	80	120	130
Dental College AQMS, Lahore	8-11-2018	SNO	200.563	SNO	SNO	6.706	SNO
Lahore Met office AQMS	8-11-2018	347.206	167.385	SNO	SNO	41.111	54.241
Multan AQMS	8-11-2018	SNO	SNO	13.863	62.937	12.114	SNO
Faisalabad AQMS	8-11-2018	624.147	167.618	125.476	49.055	33.438	SNO
Gujranwala AQMS	8-11-2018	SNO	SNO	31.311	62.468	19.240	SNO
Dental College AQMS, Lahore	12-11-2018	SNO	216.128	SNO	SNO	5.798	SNO
Lahore Met office AQMS	12-11-2018	214.031	163.258	SNO	SNO	38.215	27.341
Multan AQMS	12-11-2018	SNO	SNO	8.117	52.704	9.068	SNO
Faisalabad AQMS	12-11-2018	298.374	148.230	64.012	57.488	34.956	SNO
Gujranwala AQMS	12-11-2018	SNO	SNO	25.466	48.876	9.847	SNO
Dental College AQMS, Lahore	15-11-2018	SNO	79.361	13.757	40.495	23.822	SNO
Lahore Met office AQMS	15-11-2018	133.195	94.047	73.774	43.203	30.691	27.938
Multan AQMS	15-11-2018	SNO	SNO	33.000	73.871	9.345	SNO
Faisalabad AQMS	15-11-2018	214.884	98.171	57.917	27.595	11.855	SNO
Gujranwala AQMS	15-11-2018	SNO	SNO	12.773	31.902	5.352	SNO
Dental College AQMS, Lahore	17-11-2018	SNO	236.935	43.306	84.134	55.998	SNO
Lahore Met office AQMS	17-11-2018	160.225	117.175	117.691	139.280	41.648	36.180
Multan AQMS	17-11-2018	SNO	SNO	83.119	93.559	10.793	SNO
Faisalabad AQMS	17-11-2018	217.699	113.097	81.849	30.100	12.494	SNO
Gujranwala AQMS	17-11-2018	SNO	SNO	12.451	39.162	4.638	SNO
Dental College AQMS, Lahore	19-11-2018	SNO	187.546	8.682	62.271	36.249	SNO
Lahore Met office AQMS	19-11-2018	184.067	144.305	125.274	149.733	49.295	30.238

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Table A- 81: Daily Quality Monitoring Report of Ambient Air of Various Cities of Punjab During November 2018

Parameter Description/ Location	Date	Respirable Particulate Matter (PM10) Ug/m³	Respirable Particulate Matter (PM2.5) Ug/m³	Nitrogen Oxides as (NO) Ug/m³	Nitrogen Oxides as (NO₂) Ug/m³	Sulphure Dioxide (SO₂) Ug/m³	Ozone (O3) Ug/m³
1	2	3	4	5	6	7	8
Faisalabad AQMS	19-11-2018	254.496	144.982	51.825	49.702	18.341	SNO
Gujranwala AQMS	19-11-2018	SNO	SNO	66.108	65.784	17.812	SNO
Dental College AQMS, Lahore	20-11-2018	SNO	240.654	43.779	81.380	39.133	SNO
Lahore Met office AQMS	20-11-2018	190.827	152.729	98.581	157.672	39.817	34.255
Multan AQMS	20-11-2018	SNO	SNO	95.676	110.161	6.801	SNO
Faisalabad AQMS	20-11-2018	250.490	92.306	60.050	37.608	20.462	SNO
Gujranwala AQMS	20-11-2018	SNO	SNO	32.684	56.206	14.994	SNO
Dental College AQMS, Lahore	23-11-2018	SNO	151.166	8.508	62.221	70.298	SNO
Lahore Met office AQMS	23-11-2018	105.741	71.233	24.199	76.201	24.540	33.292
Multan AQMS	23-11-2018	SNO	SNO	29.235	48.410	3.794	SNO
Faisalabad AQMS	23-11-2018	175.635	65.028	34.502	28.894	18.200	SNO
Gujranwala AQMS	23-11-2018	SNO	SNO	2.209	26.223	7.398	SNO
Dental College AQMS, Lahore	26-11-2018	SNO	237.050	42.299	84.923	35.367	SNO
Lahore Met office AQMS	26-11-2018	216.549	182.419	445.072	206.021	44.934	51.770
Multan AQMS	26-11-2018	SNO	SNO	52.657	83.365	4.747	SNO
Faisalabad AQMS	26-11-2018	346.652	122.562	106.238	45.511	24.102	SNO
Gujranwala AQMS	26-11-2018	SNO	SNO	87.353	64.819	23.403	SNO
Dental College AQMS, Lahore	30-11-2018	SNO	226.031	92.210	66.996	42.188	SNO
Lahore Met office AQMS	30-11-2018	127.412	115.281	287.211	142.473	50.671	33.253
Multan AQMS	30-11-2018	SNO	SNO	40.434	96.852	7.513	SNO
Faisalabad AQMS	30-11-2018	206.292	85.477	51.516	30.626	13.518	SNO
Gujranwala AQMS	30-11-2018	SNO	SNO	134.478	57.889	11.881	SNO

Source:- Environment Protection Agency Laboratories Govt. of Punjab, Lahore.

Table A- 82: Month wise Analysis of Air Quality at Town Hall

Month	NO ug/m3	NO2 ug/m3	NOx ppm	CO mg/m3	So2 ug/m3	O3 ug/m3
1	2	3	4	5	6	7
August, 2019	7.138	20.7142	0.0151	1.324	32.3329	19.2127
September, 2019	17.7668	22.3882	0.0237	3.572	26.2324	33.6104
October, 2019	50.3406	28.688	0.0486	8.5831	56.1992	34.9182
November, 2019	56.9108	31.4568	0.0548	8.2727	60.5638	33.2947
December, 2019	54.319	23.7014	0.0472	7.5473	74.1275	31.4317
January, 2020	83.3833	23.115	0.0634	8.9118	-	32.7964
February, 2020	79.5801	28.2596	0.062	8.6072	15.348	39.9349
March, 2020	40.2031	24.978	0.0394	6.3261	12.247	40.6995
April, 2020	25.0702	26.8402	0.0312	5.6623	10.6478	41.9859
May, 2020	21.7134	28.5079	0.0299	6.2879	-	46.1005

Source**:**- Environmental Protection Agencey, Lahore

Table A-83: Tide Data off Seashore Karachi

(Metres)

Month	2014			2015			2016		
	Av. high water	Av. low Water	Mean sea level	Av. high water	Av. low water	Mean sea level	Av. high water	Av. low water	Mean sea level
January	2.63	0.72	1.68	2.6	0.75	1.68	2.67	0.88	1.78
February	2.61	0.77	1.69	2.63	0.74	1.69	2.72	0.86	1.79
March	2.66	0.75	1.70	2.61	0.79	1.70	2.71	0.90	1.81
April	2.64	0.81	1.73	2.63	0.81	1.72	2.74	0.92	1.83
May	2.66	0.77	1.70	2.65	0.85	1.75	2.76	0.93	1.85
June	2.68	0.83	1.75	2.67	0.83	1.75	2.80	0.91	1.86
July	2.69	0.76	1.72	2.70	0.76	1.73	2.80	0.86	1.83
August	2.66	0.70	1.68	2.70	0.66	1.68	2.77	0.79	1.78
September	2.60	0.68	1.64	2.63	0.64	1.64	2.71	0.76	1.74
October	2.50	0.71	1.62	2.59	0.66	1.63	2.66	0.78	1.72
November	2.53	0.73	1.63	2.53	0.73	1.63	2.62	0.83	1.73
December	2.56	0.74	1.65	2.54	0.77	1.66	2.64	0.86	1.75

Month	2017			2018			2019		
	Av. high water	Av. low water	Mean sea level	Av. high water	Av. low water	Mean sea level	Av. high water	Av. low water	Mean sea Level
January	2.69	0.86	1.78	2.72	0.84	1.78	2.67	0.88	1.78
February	2.70	0.87	1.79	2.70	0.88	1.79	2.73	0.85	1.79
March	2.76	0.85	1.81	2.76	0.86	1.81	2.70	0.91	1.81
April	2.76	0.90	1.83	2.74	0.91	1.83	2.72	0.93	1.83
May	2.74	0.92	1.83	2.75	0.94	1.85	2.73	1.02	1.88
June	2.79	0.91	1.85	2.77	0.94	1.86	2.76	0.96	1.86
July	2.77	0.88	1.83	2.78	0.87	1.83	2.77	0.87	1.82
August	2.74	0.84	1.79	2.76	0.81	1.79	2.78	0.78	1.78
September	2.68	0.80	1.74	2.71	0.78	1.75	2.73	0.73	1.73
October	2.63	0.82	1.73	2.64	0.81	1.73	2.67	0.77	1.72
November	2.63	0.83	1.73	2.62	0.84	1.73	2.6	0.86	1.72
December	2.67	0.84	1.76	2.64	0.86	1.75	2.6	0.91	1.76

Source:- National Institute of Oceanography Karachi

Table A-84: Films Released by Language

(Number)

Year	Number of films released						
	Total	Urdu	Sindhi	Punjabi	Pushto	Sariaiki	Gujrati
1995	64	27(a)	-	14	23	-	-
1996	70	30(a)	2	12	26	-	-
1997	68	38(a)	1	9	20	-	-
1998	51	29 (a)	-	5	17	-	-
1999	51	28	-	6	17	-	-
2000	61	31	-	15	15	-	-
2001	49	27	-	19	3	-	-
2002	53	18	-	28	7	-	-
2003	43	15	-	17	11	-	-
2004	43	7	-	16	20	-	-
2005	42	11	-	11	20	-	-
2006	42	8	-	12	22	-	-
2007	39	10	-	15	14	-	-
2008	35	7	-	12	16	-	-
2009	23	5	-	9	9	-	-
2010	18	3	-	7	8	-	-
2011	24	6	-	4	12	2	-
2012	22	-	-	6	16	-	-
2013	31	8	-	5	18	-	-
2014	42	15	3	8	14	2	-
2015	51	22	3	8	14	4	-
2016	64	34	2	9	13	6	
2017	44	33	-	3	8	-	
2018	25	15	-	2	8	-	

Source:- Pakistan Film Producer's Association

(a) It also includes the films produced in urdu & punjabi double version.

Table A-85: Documentary Films Produced/Released

(Number)

Year	Federal		Punjab		Sindh	
	No. of Films Produced	No. of Films Released	No. of Films Produced	No. of Films Released	No. of Films Produced	No. of Films Released
2004-05	1	1	9	8	-	-
2005-06	1	1	9	8	-	-
2006-07	-	-	7	5	4	4
2007-08	5	-	4	4	-	-
2008-09	1	1	1	-	-	-
2009-10	-	-	-	-	-	-
2010-11	7	6	-	-	-	-
2011-12	7	7	-	-	-	-
2012-13	5	4	-	-	-	-
2013-14	1	1	-	-	-	-
2014-15	7	6	-			
2015-16	12	11	-	-	-	-
2016-17	4	4	-	-	-	-
2017-18	4	4	-	-	-	-

Year	Khyber Pakhtunkhwa		Balochistan	
	No. of Films Produced	No. of Films Released	No. of Films Produced	No. of Films Released
2004-05	-	-	-	-
2005-06	-	-	-	-
2006-07	-	-	-	-
2007-08	-	-	-	-
2008-09	-	-	-	-
2009-10	-	-	-	-
2010-11	-	-	-	-
2011-12	-	-	-	-
2012-13	-	-	-	-
2013-14	-	-	-	-
2014-15	-	-	-	-
2015-16	-	-	-	-
2016-17	-	-	-	-
2017-18	-	-	-	-

Source: i. Ministry of Information & Broadcasting (Central) Karachi
ii. Provincial Public Relation Departments

Table A-86: Dramas and Plays Produced/Released

(Number)

Year	On Television		On Radio	
	Produced	Telecasted	Produced	Broadcasted
1999	614	565	173	456
2000	636	587	260	605
2001	688	486	137	363
2002	759	552	206	561
2003	561	521	666	826
2004	550	510	140	362
2005	535	471	195	515
2006	433	345	214	1148
2007	629	595	704	2438
2008	324	324	98	280
2009	219	219	105	290
2010	644	479	95	280
2011	508	383	81	270
2012	420	389	75	263
2013	357	357	Nil	Nil
2014	261	263*	Nil	Nil
2015	195	217*	Nil	Nil
2016	469	505*	Nil	Nil
2017	276	269	Nil	Nil
2018	251	236	Nil	Nil
2019	208	193	Nil	Nil

*= Episodes of Serial/Series were repeat telecast from previous years Production.

Source:- i) Pakistan Television Corporation Limited
ii) Pakistan Broadcasting Corporation Limited

Table A-87: Cinemas and Seating Capacity therein by Province

(Number)

Years	Pakistan	Balochistan	Khyber Pakhtunkhwa	Punjab	Sindh
Cinemas					
2005-06	286	8	28	199	51
2006-07	287	8	35	184	60
2007-08	245	9	30	143	63
2008-09	203	4	22	123	54
2009-10	133	8	17	87	21
2010-11	107	11	11	70	15
2011-12	85	1	10	59	15
2012-13	115	1	11	69	32
2013-14	109	1	10	61	37
2014-15	111	2	12	70	27
2015-16	92	2	12	55	26
2016-17 (R)	92	2	12	55	26
2017-18	116	2	10	87	23
2018-19	72	1	-	59	12
Seating Capacity of Cinemas					
2005-06	159,789	3,722	12,521	106,670	36,876
2006-07	162,864	3,722	20,200	101,134	37,808
2007-08	159,157	5,120	21,812	96,274	35,951
2008-09	124,980	2,400	15,650	77,200	29,730
2009-10	37,860	3,600	10,000	15,400	8,860
2010-11	60,500	4,100	7,250	39,700	9,450
2011-12	42,900	500	4,400	29,400	8,600
2012-13	48,350	800	8,150	30,400	9,000
2013-14	47,850	550	6,500	28,600	12,200
2014-15	79,950	1,500	9,700	47,750	21,000
2015-16	42,000	1,250	7,750	24,200	8,800
2016-17 (R)	42,000	1,250	7,750	24,200	8,800
2017-18	44,100	1,600	7,950	25,050	9,500
2018-19	37,532	278	-	28,740	8,514

Source:- 1) Divisional Directorates of Excise & Taxation, Punjab, Sindh, KP & Balochistan
2) Cantonment Boards of the Punjab, Sindh, KP & Balochistan.
Note:-   Federal Capital Area Islamabad is included in Punjab
(R)   Repeat

Table A-88: Visitors, Type of Attraction, Total Expenditure and Income by Zoo

Year	No of visitors		Type of attractions		Total expenditure (per annum) Rs.	Total income (per annum) Rs.
	Adult	Minor	Animals	Birds		
Karachi Zoo						
2005-06	1,500,000	840,000	414	311	3,577,091	21,220,552
2006-07	1,447,623	600,000	432	404	5,991,799	19,313,884
2007-08	1,207,640	1,320,600	388	434	5,567,895	21,048,742
2008-09	1,800,000	70,000	512	501	27,100,000	24,303,194
2009-10	1,562,960	1,128,400	387	473	9,182,875	26,460,096
2010-11	1,272,393	118,651	371	450	16,025,702	23,200,281
2011-12	970,000	2,898,277	357	496	17,500,000	28,270,385
2012-13	1,103,334	2,206,667	356	442	39,700,000	40,000,000
2013-14	550,000	1,200,000	417	502	49,664,805	34,727,153
2014-15	1,100,000	1,800,000	402	484	40,000,000	40,000,000
2015-16	1,400,000	1,700,000	387	490	40,000,000	45,000,000
2016-17	6,85,000	1,372,000	367	478	42,000,000	50,000,000
2017-18	6,90,000	1,430,000	400	477	59,043,849	51,330,591
2018-19	2,86,875	1,147,498	603	242	51,276,993	58,826,145
Bahawalpur Zoo						
2005-06	**	**	194	682	4,347,000	5,338,235
2006-07	**	**	194	563	4,599,836	4,055,000
2007-08	601,069	131,568	175	616	4,700,000	5,870,686
2008-09	642,488	142,514	179	614	16,509,000	7,479,000
2009-10	655,948	133,526	177	702	7,043,000	7,922,000
2010-11	659,075	133,753	156	688	7,221,000	8,045,000
2011-12	849,000	389,000	180	814	7,200,000	11,000,000
2012-13	982,000	356,500	123	581	7,800,000	9,912,000
2013-14	719,200	140,000	142	456	8,790,000	10,808,000
2014-15	720,165	141,200	152	972	7,625,000	13212000
2015-16	725,265	150,300	143	760	28,788,000	14,750,000
2016-17	731,270	165,200	152	1224	33,250,000	20,307,000
2017-18	669,525	167,941	165	1166	34,895,000	18,293,053
2018-19	592,313	115,355	150	759	14,111,866	19,581,000

Table A-89: Visitors, Type of Attraction, Total Expenditure and Income by Zoo

Year	No of visitors		Type of attractions		Total expenditure (per annum) Rs.	Total income (per annum) Rs.
	Adult	Minor	Animals	Birds		
Lahore Zoo						
2005-06	2,036,748	837,500	322	780	--	44,204,063
2006-07	2,874,248	2,665,510	325	616	17,609,703	47,633,708
2007-08	1,998,007	658,236	286	751	8,660,012	49,590,700
2008-09	1,936,036	733,724	43	71	41,040,012	50,105,989
2009-10	1,873,100	684,700	277	705	48,192,172	63,345,191
2010-11	2,300,141	843,722	314	688	17,575,893	69,315,735
2011-12	2,517,915	900,266	300	638	23,428,712	74,458,636
2012-13	2,799,293	974,261	324	734	23,501,215	82,142,052
2013-14	2,995,835	989,398	289	619	24,480,042	1,10,531,470
2014-15	2,935,604	943,197	268	818	29724074	97,346,650
2015-16	2,979,972	999,271	264	937	34,956,161	1,56,931,507
2016-17	2,665,031	907,903	288	641	40,881,648	1,57,837,393
2017-18	2,532,074	911,404	287	714	40,884,563	1,84,598,736
2018-19	2,335,469	860,107	365	779	41,461,679	1,96,375,808
Islamabad Zoo						
2007-08	400,000	1,300,000	107	524	5,440,000	3,227,000
2008-09	325,000	1,050,000	90	623	5,500,000	3,000,000
2009-10	325,000	1,050,000	155	1,163	7,500,000	2,899,000
2010-11	287,500	1,350,000	155	744	14,900,000	3,700,000
2011-12	350,000	2,200,000	174	824	21,400,000	4,000,000
2012-13	360,000	2,000,000	167	810	25,700,000	4,000,000
2013-14	750,000	400,000	171	1,131	25,900,000	8,000,000
2014-15	370,000	250,000	145	1,249	25,000,000	10,000,000
2015-16	370,000	250,000	105	849	20,732,000	10,126,000
2016-17	360,000	250,000	108	855	28,200,000	10,786,000
2017-18	380,000	275,000	100	765	33,395,000	12,549,000
2018-19	380,000	275,000	100	765	33,395,000	12,549,000

Source:- Zoological Garden, Karachi, Bahawalpur and Lahore

* Contract of gate entry ticket was leased out therefore number of visitors is not available on the record

** Sale of tickets leased out to private contractor.

Zoological Garden Hyderabad has been shifted to Karachi in 2006-07.

Environmental Impacts of Socio-Economic Activities and Natural Events

Rapid population growth impacts directly all facets of environment, whether natural or man made. Some major problems include food shortages, sub-division of landholding to the level of uneconomical size, deforestation, reduction in agricultural land due to expansion of cities, pressure on housing units unaffordable increase in energy consumption, shortages of natural resources for the development of industrial sector and degradation of environment.

This section briefly dwells on certain aspects of economic activities, which bear nexus with population growth and, by the same token, environment. Thus, this section includes tabulations on area under, as well as production of, agricultural crops, import/export of, agricultural commodities, milk and milk products, fertilizers, wood and wood products, petroleum product and coal. In order to allude towards deforestation, revenue earned by forest department is also tabulated. Further, as an explicit consequences of population pressure, some tables on waste generation, chemical analysis of river waters, water logging and salinity and different types of pollutants on coast of Pakistan are included. Similarly, a record of nature's unsavoury expressions i.e. natural disasters, which bear uncanny relationship with human actions, is given at the end.

Table B-01: Area under Agricultural Crops and Fruits Indices (2008-09=100)

Year	Rice	Wheat	Bajra	Jowar	Maize	Barley	Gram	Masoor
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	97.3	100.9	101.3	94.6	88.9	97.8	98.7	77.7
2010-11	79.8	98.4	116.8	87.1	92.6	89.7	97.5	84.5
2011-12	86.8	95.6	97.6	81.3	103.3	84.0	93.2	73.8
2012-13	77.9	95.7	98.2	75.5	100.7	85.0	91.8	62.5
2013-14	94.1	101.7	101.0	75.3	111.1	82.4	87.9	58.9
2014-15	97.6	101.7	98.4	74.2	108.6	78.7	87.2	57.3
2015-16	92.5	102.0	103.5	104.1	113.2	76.9	86.9	57.9
2016-17	91.9	99.2	99.9	97.6	128.2	70.8	89.9	47.6
2017-18	97.9	97.2	104.1	97.2	118.9	67.0	90.4	43.4
2018-19	94.8	95.9	97.1	91.7	130.6	66.3	87.3	41.7
Year	Mash	Mung	Other Pulses	Rapeseed& mustard	Sesa mum	Linseed	Ground nut	Cotton
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	87.3	83.4	154.9	77.7	88.1	77.4	94.2	110.1
2010-11	88.0	62.5	133.0	88.4	85.7	74.0	89.3	95.4
2011-12	88.8	64.1	81.3	88.0	83.6	70.0	103.0	100.5
2012-13	84.1	61.9	60.4	97.6	78.3	67.9	88.0	102.1
2013-14	75.7	59.6	49.5	99.1	90.2	60.8	101.1	99.5
2014-15	75.4	58.0	52.7	87.3	91.3	55.2	103.8	105.0
2015-16	69.6	66.5	52.7	84.2	86.8	57.1	99.0	102.9
2016-17	62.0	81.4	42.9	77.8	88.3	53.4	98.2	88.3
2017-18	55.8	74.0	38.5	87.2	91.3	53.4	106.8	95.8
2018-19	51.1	74.3	35.2	96.8	91.9	47.9	106.3	84.2

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Table B-01: Area under Agricultural Crops and Fruits Indices (2008-09=100)

Year	Jute	Sun hemp	Sugar cane	Tobacco	Potato	Vegetables	Garlic	Chilies
2008-09	0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	0	83.3	91.6	112.3	95.5	98.7	81.0	101.2
2010-11	0	66.7	95.9	103.2	109.9	99.6	78.6	86.2
2011-12	0	58.3	102.7	92.2	127.5	99.3	79.8	37.1
2012-13	0	41.7	109.7	100.2	119.2	101.2	83.3	86.2
2013-14	0	16.7	113.9	98.4	110.2	105.8	89.3	85.0
2014-15	0	6.7	110.8	108.2	117.6	98.6	94.0	84.7
2015-16	0	5.0	109.9	106.0	122.3	108.5	96.4	87.8
2016-17	0	1.7	118.3	95.0	123.9	107.8	98.8	86.3
2017-18	0	0.7	130.3	93.4	133.8	128.4	92.9	88.3
2018-19	0	0.0	107.1	90.5	134.9	105.4	96.4	64.1

Year	Onion	Citrus Fruit	Banana	Mango	Apple	Guava	Grapes	Dates
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	96.2	99.2	96.7	102.1	98.8	99.8	100.0	99.9
2010-11	113.9	97.3	82.2	101.1	97.9	102.9	100.0	99.3
2011-12	100.1	97.0	62.5	101.4	97.7	107.2	100.7	102.6
2012-13	97.2	97.0	75.6	100.2	91.5	108.5	100.0	98.8
2013-14	111.0	96.9	77.8	100.7	93.1	68.6	100.0	98.7
2014-15	100.7	96.4	78.3	100.4	88.7	105.3	100.0	100.6
2015-16	104.9	96.1	79.7	100.1	85.8	112.5	96.7	107.1
2016-17	106.4	93.5	81.4	99.6	84.3	108.8	96.7	107.8
2017-18	115.0	91.9	83.6	98.7	84.2	104.3	96.7	108.5
2018-19	114.4	90.9	82.5	93.2	72.6	90.4	102.6	108.9

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research .

Table B-02: Production of Agricultural Crops and Fruits Indices (2008-09=100)

Year	Rice	Wheat	Bajra	Jowar	Maize	Barley	Gram	Masoor
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	99.0	97.0	98.9	93.7	90.8	87.6	75.8	75.7
2010-11	69.4	104.9	116.7	85.8	103.2	87.4	67.0	92.4
2011-12	88.6	97.7	102.6	83.3	120.7	80.6	38.4	77.1
2012-13	79.6	100.7	104.8	74.6	117.5	82.5	101.5	68.1
2013-14	97.8	108.1	101.6	74.7	137.6	81.6	53.9	56.3
2014-15	100.7	104.4	99.4	69.7	137.4	77.1	51.2	48.6
2015-16	97.8	106.7	101.0	97.6	148.5	74.4	38.6	54.2
2016-17	98.5	111.0	102.8	90.2	170.7	71.2	44.5	52.8
2017-18	107.2	104.3	114.4	92.8	164.3	67.6	43.7	43.8
2018-19	103.6	101.3	118.1	90.6	190.0	67.5	60.4	41.7
Year	**Mash**	**Mung**	**Other Pulses**	**Rapeseed & ustard**	**Sesamum**	**Linseed**	**Groundnut**	**Cotton (000 bales)**
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	78.7	75.4	124.6	81.5	81.5	75.0	62.2	109.3
2010-11	83.1	48.4	111.5	96.5	75.9	77.8	79.3	97.0
2011-12	80.1	59.1	82.0	89.9	73.9	72.2	102.8	115.0
2012-13	80.1	57.2	68.9	110.8	71.2	72.2	95.1	110.3
2013-14	75.0	59.0	62.3	116.0	79.3	66.7	117.9	108.0
2014-15	66.2	62.8	57.4	108.5	83.7	58.3	100.6	118.1
2015-16	62.5	64.9	45.9	97.5	77.3	61.1	107.3	83.9
2016-17	52.9	82.7	49.2	90.7	83.2	61.1	87.4	90.3
2017-18	52.9	77.6	44.3	105.2	85.9	63.9	100.7	101.1
2018-19	50.7	74.8	42.6	119.2	87.1	52.8	113.8	83.4

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Table B-02: Production of Agricultural Crops and Fruits Indices   (2008-09=100)

Year	Jute	Sunhemp	Sugarcane	Tobacco	Potato	Vegetables	Garlic	Chillies
2008-09	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	0.0	87.5	98.7	113.7	106.8	94.7	85.3	100.6
2010-11	0.0	75.0	110.5	98.0	118.7	97.5	82.3	91.5
2011-12	0.0	62.5	116.7	93.3	115.4	96.7	85.3	28.8
2012-13	0.0	50.0	127.4	103.2	128.7	90.9	90.2	78.4
2013-14	0.0	12.5	134.8	123.8	98.0	97.3	96.0	78.1
2014-15	0.0	5.0	125.5	29.3	141.4	91.2	108.8	74.4
2015-16	0.0	3.8	130.8	113.3	134.7	101.3	105.5	74.6
2016-17	0.0	0.0	150.8	108.1	130.3	102.7	108.6	76.1
2017-18	0.0	0.0	166.5	115.3	155.9	103.1	110.9	79.0
2018-19	0.0	0.0	134.2	99.1	165.5	107.9	112.1	54.1
Year	**Onion**	**Citrus fruits**	**Banana**	**Mango**	**Apple**	**Guava**	**Grapes**	**Dates**
2008-09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009-10	99.8	100.8	98.4	106.8	83.1	99.4	85.0	93.8
2010-11	113.8	93.0	89.8	109.3	119.3	106.7	84.6	92.2
2011-12	99.3	100.7	62.4	98.4	135.8	96.7	84.6	98.4
2012-13	97.5	93.9	89.8	97.3	126.2	97.2	84.6	92.6
2013-14	102.1	101.7	76.5	96.0	137.4	97.7	87.0	93.0
2014-15	98.1	112.4	75.5	99.4	140.0	95.5	86.7	94.9
2015-16	101.9	109.9	84.0	94.6	140.7	102.0	86.6	82.6
2016-17	107.6	102.2	85.8	103.3	151.9	106.9	87.1	77.5
2017-18	124.4	110.3	85.9	100.4	147.2	114.4	87.0	95.4
2018-19	122.0	115.7	86.5	99.7	123.4	107.0	90.7	78.9

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table B-03: Quantity and Value of Export of Major Agricultural Commodities

(Quantity in '000' tones)
(Value in million Rs.)

Year	2014-15		2015-16		2016-17		2017-18		2018-19	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
A. Primary Commodities										
Rice (all)	**3861.4**	**206266.3**	**4246.5**	**194245.6**	**3523.2**	**168244.0**	**4096.5**	**224739.4**	**4120.1**	**285031.5**
Rice Basmati	523.4	60958.1	480.0	46615.7	469.3	47479.3	561.0	64646.6	659.6	87252.7
Rice other varieties	3338.0	145308.2	3766.5	147629.9	3053.9	120764.7	3535.5	160092.8	3460.6	197778.8
Fish & Fish Preparation	137.4	35429.4	127.9	33918.4	155.1	41213.9	196.9	49755.5	196.5	60404.6
Fruit & Veg. Incl.Juice	**1484.3**	**71767.3**	**1395.0**	**69100.0**	**1298.8**	**61911.6**	**1603.8**	**73207.1**	**1806.3**	**91307.8**
Fruits	682.1	44374.6	676.5	44607.0	645.7	39878.5	696.6	43841.6	755.7	56271.5
Vegetables	751.0	23489.7	701.1	22232.5	632.2	19363.3	880.8	26720.6	1022.9	32197.8
Fruits & Veg. Juice	51.2	3903.0	17.4	2260.5	20.9	2669.8	26.4	2644.9	27.7	2838.6
Wheat	8.3	291.3	0.5	16.6	3.9	108.7	1189.6	27108.6	683.5	20124.2
Wheat Flour	841.7	30634.5	626.3	20657.7	622.8	18369.3	360.0	10041.2	694.8	24114.3
Spices (Incl.Chillies)	18.7	6712.5	19.7	8003.1	22.8	8855.1	20.8	8749.6	22.1	12075.8
Oil seed, Nuts, Kernals	37.7	6507.8	20.9	3152.7	37.8	4951.8	29.4	4050.8	51.7	9966.6
Leguminous & Vegetable	0.5	2.9	2.0	0.2	606.0	55.3	1.9	0.2	--	--
Raw hides and skins	0.2	52.5	0.2	80.3	0.0	11.0	0.0	8.9	0.0	16.0
Raw Wool & Animal Hair	**7.3**	**1053.1**	**4.7**	**838.1**	**2.7**	**516.4**	**2.9**	**507.1**	**2.4**	**542.0**
Raw wool	2.8	452.5	1.8	330.1	0.5	125.8	0.6	146.3	0.7	177.0
Animal hair	4.5	600.6	2.9	508.0	2.2	390.6	2.3	360.8	1.7	365.0
Crude Animals material	18.2	3520.6	20.3	2625.0	15.8	2191.7	21.5	3256.6	33.6	5034.0
Crude fertilizer	27.7	254.1	26.9	309.6	12.7	194.5	9.2	142.6	17.9	223.0
Molasses	83.0	1010.3	73.1	474.4	101.4	1217.1	169.0	2114.5	117.9	1699.0
Raw cotton	94.1	14932.7	49.3	7948.1	25.5	4559	35.3	6183.6	13.0	2709.0
Cotton waste	44.4	5167.5	43.5	4606.7	38.6	4984.7	50.8	7122.8	38.3	5859.0
Tobacco		1517.4		1233.8		1649.2		2833.5	0.0	3378.0
UN-manufactured	4.1	1363.7	3.0	1066.3	3.3	1304.9	6.6	2556.5	8.6	2866.0
Manufactured Excl.cigarette	0.2	84.5	0.2	79.6	0.5	246.1	0.7	255.4	1.3	508.0
Cigarettes (Million Nos)	0	69.2	0.0	87.9	0.0	98.2	0.0	21.6	0.0	4.0
Sub-Total (A):		**385120.2**		**347610.3**		**319033.3**		**419822.0**		**522485.4**

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Table B-03: Quantity and Value of Export of Major Agricultural Commodities

(Quantity in '000' tones)
(Value in million Rs.)

Year	2014-15		2015-16		2016-17		2017-18		2018-19	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
B. Textile Manufactures										
Cotton yarn	642.1	187375.7	423.6	131700	456.1	130215.9	522.4	151063.4	434.0	152726.0
Cotton Cloth (Million sqm)	2074.2	248430.9	2152.1	230757.3	2049.1	223675.4	2369.4	242374.4	2827.1	285625.0
Cotton thread	2.7	1239.7	5.5	2327.9	3.7	1597.3	0.3	139.9	0.5	279.0
Tents & other canvas goods	45	12835.3	32.3	8886.2	45.5	14006.9	28.8	9338.4	29.9	11202.0
Bedwear	324.6	213017.9	328.9	210543.5	357.5	223811.6	377.0	248537.7	414.8	307202.0
Towels	172.2	80777.8	184.5	83680.7	197.0	83819.1	203.2	87633.2	190.9	107043.0
Textile ,madeups (excl.towels)		66359		65518.3		66820.7		75243.3	0.0	92422.0
Sub-Total (B):		**810036.3**		**733413.9**		**743946.9**		**814330.3**		**956499.0**
C. Other Manufactures										
Leather (Million sqm)	22.3	49582.8	1.7	37802.9	2.3	36182.8	26.2	36329.9	21.3	34269.0
Leather manufacctures (excl.footwear)	-	60429.4	-	54787.6	-	51421.1	-	57422.4	0.0	66146.0
Carpets (Million sq.M)	2.5	12098.4	1.8	10185.7	1.8	8218.8	1.7	8317.1	1.6	9147.0
Feeding stuff for animals	322.1	6614.4	352.5	6937.6	284.4	5476.8	569.1	9986.5	656.4	14522.0
Fertilizers manufactures	-	-	-	-	43.8	1064.1	233.1	5449.0*	-	-
Rubber Manufactures	-	1215.2	-	1358.4	-	1544.8	-	2092.2	0.0	2464.0
Guar & Guar Products	25.5	5791.1	16.7	2597.6	24.0	3127.8	23.9	4015.9	22.8	4779.0
Foot wears (Million pairs)	13	13304.4	12	11452.7	9.9	10024.2	10.1	11912.9	13.2	16734.0
Sports Goods	-	34293.6	0	33861.6	-	32285.1	-	37710.2	0.0	41995.0
Furniture		781.2	0.4	570	-	471.1	-	423.3	0.2	503.0
Sub-Total (C):	-	**184110.5**	-	**159554.1**	-	**149816.6**	-	**173659.4**	-	**190559.0**
Total (A+B+C)	-	**1379267.0**	-	**1240578.3**	-	1212796.8	-	**1407811.7**	-	**1669543.7**
Total Exports	-	**2397512**	-	**2166846**	-	**2138185.6**	-	**2555043.3**	-	**3128229.7**

Source:- 1.   Agricultural Statistics of Pakistan, M/O National Food Security and Research
2.   External Trade Section, PBS Karachi.
- = Indicates Nil

Table B-04: Import of other Agricultural Commodities

(Quantity 000 Tonnes)
(Value in Million Rs)

Item	2014-15		2016-15		2016-17		2017-18		2018-19	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Milk and cream	80	21373	70.2	19895.2	74.3	16795.8	78.6	18566.6	74.8	16228.0
Pulses	655	41448	898.6	62063.7	1225.4	99721.3	788.1	58783.7	976.9	68265.0
Potato Seed	17	1255	5.0	339.0	7.0	511.6	8.5	677.7	5.0	540.0
Maize Seed	23	6779	20.1	4755.6	66.7	6276.7	25.5	7526.0	0.0	9426.0
Cotton	-	35129	--	78715.6	-	85128.8	-	122521.1	415.0	10.0
Dry Fruits	54	11899	156.9	17941.3	150.4	18894.5	70.2	10626.1	25.0	5899.6
Sugar Refined	10	631	12.1	645.1	8.9	535.4	8.7	553.7	7.9	534.5
Tea	151	34533	173.8	53491.3	194.8	54839.5	181.9	60368.5	222.7	77366.8
Spices	132	11058	143.5	15366.3	118.8	14514.8	135.8	18394.5	136.8	22201.4
Milk food for babies inft. Invld	10	7971	12.0	9177.0	15.1	10289.8	21.2	11872.8	20.0	15090.6
Palm oil	2397	180316	2719.2	176102.2	2606.8	199473.3	2843.4	223878.7	3147.5	250597.3
Soyabean oil	53	5694	141.0	19097.6	92.0	12854.4	156.7	14683.5	150.9	14832.8
Agriculture machinery & Implements	-	10573	--	8868.0	-	12432.6		13665.2	0.0	18365.2
Jute	74	4276	46.7	3320.7	66.9	4744.8	88.0	5599.8	68.9	4730.0
Fertilizer manufactured	2027	92641	1618.8	75667.4	1700.5	67063.5	2145.6	90878.7	193.1	105161.9
Insecticides	23	14059	17.4	15974.4	18.1	16680.0	26.5	19162.2	29.1	25909.2
Feeding stuff for animals	1050	54191	940.0	44050.3	641.9	28658.0	296.2	15695.9	206.1	16614.8
Hides & skins & fur skins raw	14	5853	10.1	3404.4	7.6	2967.8	9.2	4001.4	8.9	4502.3
Oil seeds & oleagionous Fruits	333	83861	1316.1	88512.6	1602.6	109277.4	2866.4	154717.2	3019.0	174072.4
Rubber crude incl. Synth/reclaimed	116	15795	66.9	15247.4	84.3	18302.8	112.1	23650.9	99.1	23389.9
Wood and cork	-	9956	--	11721.5	-	12955.9		15474.0	0.0	19276.7
Pulp & waste paper	235	11923	241.8	12088.0	253.4	12804.1	400.5	19663.4	461.1	26588.9
Fertilizer crude	94	4187	159.3	6606.6	117.9	4894.3	101.2	4400.8	152.1	6323.1
Crude animal & vegetable materials	95	13754	104.0	17266.1	103.5	17300.4	92.1	18484.2	106.7	21363.7
Animal oils and fats	33	2521	22.9	1386.4	27.5	1845.3	34.9	2496.8	21.2	1774.3
Animal/veg/fat oil wax etc nes	16	2049	15.9	1888.1	16.5	2632.4	16.3	2795.8	24.7	3521.8
Cork/wood mfg. (excl. furniture)	115	6486	109.3	8219.4	91.9	8629.3	89.0	8617.7	111.6	9004.2
Paper & paper board & manf. thereof	489	49774	518.8	52671.0	592.2	55321.6	626.7	63274.5	558.2	72568.7
Foot wear (pair)	19	8874	19.9	10262.8	24.7	11828.2	28.3	11229.3	21774.7	11816.0
Total		748857.8		834745.01		908174.3		1022260.7		1025975.1
Total Imports		4644151.6		4658748.9		5539720.6		6694896.7		7443253.3

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table B-05: Import of Edible Oil

(Quantity in Tonnes)
(Value in Million Rs.)

Year	Quantity				Value			
	Soyabean	Palm oil	Other	Total	Soyabean	Palm oil	Other	Total
2008-09	92	1783	472	2347	6990	109929	21490	138409
2009-10	27	1702	149	1878	2339	109949	42397	154685
2010-11	66	1951	159	2176	5722	172702	8731	187155
2011-12	40	2108	136	2283	4561	211826	9309	225696
2012-13	60	2164	98	2322	7158	189618	6240	203016
2013-14	118	2265	46	2429	11725	195230	3887	210842
2014-15	53	2397	50	2499	5694	180316	4570	190580
2015-16	141	2719	39	2899	19098	176102	3275	198474
2016-17	92	2607	44	2743	12854	199473	4478	216805
2017-18	157	2843	51	3051	14684	223879	5293	243855
2018-19	151	3148	76	3375	14833	250597	12652	278082

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table B-06: Import of Milk and Milk Products

(Quantity in Kilogram)
(Value in 000 Rs.)

Items	2014-15		2015-16		2016-17		2017-18		2018-19	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Milk and Cream of a Fat upto 1%	465684	115408	1138890	273144	40931	14867	44416	17154	40373	13103
Milk and Cream of a Fat 1% to 6%	12523	3476	20510	6725	63038	25179	231412	89388	279680	106705
Milk and Cream of a Fat >6%	199	81	126	69	6	2	-	-	-	-
Milk in powder Fat 1.5 %	17252530	2158300	40034369	16511250	39119020	12381592	44044676	14165393	43986877	12358547
Milk in powder >1.5% Fat	798420	307773	1102905	361883	3872601	1204764	3195754	1097055	517621	201592
Other Milk in powder >1.5% Fat	1236081	328740	741664	199626	148207	43876	62890	20111	52510	18208
Other Milk/cream not solid/sweet	441805	105567	78442	18142	205576	56292	182509	56390	53237	16789
Other Milk/Cream solid,Sweetend	772301	216692	547693	200447	666715	168312	569789	175170	530183	176974
Yogurt	30024	9225	43773	15488	48848	10786	89985	20690	70540	16016
Butter Milk,Curdled Milk/Cream	5331	1888	13597	5197	14927	7162	25587	6941	1847	883
Whey powder	24315000	2369612	24619722	1810139	28735428	2484104	28498558	2374162	26677759	2549804
Other whey preserve concent/Sweet	643327	60014	172000	27722	426910	71680	199302	21093	457905	107255
Other product consist Nature Milk	2078057	565916	1554400	428780	839547	285744	1102798	374627	1757578	480725
Butter	220088	55880	267697	114566	463840	188737	561720	196200	419431	149531
Dairy spreads	133	15	5466	721	158	37	312	94	72740	21443
Other fats & oil Derived from Milk	26141	10088	881262	316831	881490	289428	220052	71991	93230	30775
Fresh cheese	862567	219000	1597821	393284	704110	195631	1482311	401310	794821	243335
Other cheese & Curd Fresh	1569	885	3578	2108	1496	515	1416	429	2270	751
Grated or Powder cheese	2288	980	287434	108090	1048679	454470	1999709	643156	1766952	635034
Processed Cheese not grated	2809915	392260	1521787	328058	2385661	522279	1784429	493834	1851917	603910
Other Cheese	1591	456	5059	1463	7810	2290	99538	28262	171185	50994
TOTAL		**6922256**		**21123733**		**18407747**		**20253550**		**17782374**

Source:- 1.   Agricultural Statistics of Pakistan, M/O National Food Security and Research
       2.   External Trade Section, PBS Karachi.

Table B-07: Import of Fertilizers

Year	Quantity (000 Nutrient Tones)			
	N	P	K	Total
2008-09	456.6	111.5	0.04	568.14
2009-10	900.8	522.4	20.9	1444.1
2010-11	383.2	243.5	18	644.7
2011-12	871.0	291.0	15.0	1177.0
2012-13	457.5	272.3	6.8	736.6
2013-14	702.6	431.7	14.1	1148.4
2014-15	486.3	474.7	23.4	984.4
2015-16	336.8	556.5	8.0	901.3
2016-17	264.1	668.5	28.9	961.5
2017-18	324.0	820.0	47.0	1191.0
2018-19	339.0	716.0	39.0	1093.0

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table B-08: Import of Wood and Wood Products

Items	Unit	2014-15		2015-16		2016-17		2017-18		2018-19	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Wood Tret With Paint,Stain etc	CUMB	16383	69262	1785	20810	2932	120441	6191	186918	-	-
Oth Wood Oak Logs Non-confifer	CUMB	13	443	642	14969	-	-	-	-	379	9122
Wood of Other Non-Conf Species	CUMB	57803	1165884	130309	2714887	154471	3048553	166944	3626942	64900	1630326
Oth Railway Sleepers of Wood	CUMB	214	3020	1809	10159	5498	26272	-	-	-	-
Coniferous Wood Speci Saw/Chip	CUMB	613	12064	1164	29119	301	9122	34436	774765	25380	724334
Tropical Wood White Lauan Ecc	CUMB	7826	252364	10412	362272	9008	326966	6649	259036	6851	323309
Oth Tropical Wood Non-Conf Saw	CUMB	242181	4879552	217596	4723696	247698	5152044	239813	5204810	149380	4111531
Oak Wood, Swan/Chipped Len Wise	CUMB	359	14690	646	14101	435	14629	455	19470	821	54617
Beech Wood Swan/Chipped L/Wise	CUMB	2924	103454	2042	75987	3718	123433	3235	133931	2128	112550
Oth Wood Non-Conf.Species	CUMB	92174	1863914	90375	1974260	105346	2177227	94169	2126624	114923	3153907
Pol Cream/Prep,Wood Furniture	Kg	78868	44695	17536	16635	12128	19372	11458	15887	11509	18284
Residual Lye From Wood Pulp Ns	Kg	348051	196579	387430	309492	316942	234307	428986	283680	349672	232412
Gum,Wood,Sulphat Turpentine Oil	Kg	3461	1782	17429	10286	4980	2865	2963	1788	26669	16587
Oth Terpenic Oil Conifer Wood	Kg	184155	79432	654615	277063	131182	96912	292083	166064	395024	203198
Wood In Chips or Particles Con	Kg	-	-	-	-	-	-	-	-	286	117
Saw Dust & Wood Waste & Scrap	Kg	85922	14184	359449	12853	165940	8238	225572	8060	14358	14100
Wood Charcoal of Bamboo not Agglome	Kg	91340	5058	182276	8157	156511	6673	153126	8753	304083	16195
Coniferous Sheet for Veneering	Kg	610794	91758	427556	98499	377060	114873	529032	181406	332357	204987
Oth Veneer Sheet/Tropical Wood	Kg	238499	66574	321075	85098	281184	81100	302200	94761	135718	71051
Wood State	Kg	414725	136804	625489	167961	772327	205183	494017	127634	862044	281374

Contd..

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Table B-08: Import of Wood and Wood Products

(Rupees in Thousands)

Items	Unit	2014-15		2015-16		2016-17		2017-18		2018-19	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Other Laminated Wood	Kg	30870	11359	3384	1160	36512	15100	35495	15769	51519	23992
Unworked Oriented Stand Board	Kg	355243	141591	245370	130482	369478	200877	335163	174693	−	-
Oth Board & Wafer Board of Wood	Kg	1229	551	6429	2114	3614	1238	260	148	25728	12297
Oth Board Ligneous Material	Kg	92681	26080	22357	9446	41241	17252	47890	20322	363	147
Oth(Mdf)Density Exc 0.8g/Cm3	Kg	10462	361	66106	7060	3733316	259032	548210	39691	110941	7766
Fibre Board Density>0.5-G-0.8G	Kg	25430913	1363921	32649149	1745336	16009896	1667244	24158302	2257398	−	-
Oth, Fibre Board Density 0.8GCm3	Kg	-	-	-	-	-	-	-	-	-	-
Oth, (Mdf) Density Not>0.5g/Cm3	Kg	148738	14234	141909	9982	97892	8800	84567	10435	139223	12376
Densified Wood Block,Plate.Etc	Kg	161460	33273	334490	35992	223615	49189	362615	88132	213974	54246
Wooden Frames for Paintings	Kg	106980	9526	115287	12497	27168	8901	67976	14288	31855	10010
Oth Builders Joinery/Carp Wood	Kg	227992	76114	429542	156648	248992	122196	183312	82848	-	-
Tableware & Kitchenware of Wood	Kg	135642	45602	147346	54416	166766	63011	196690	49744	-	-
Statuettes/Oth Ornament Wood	Kg	5118	1438	5694	1895	10987	2745	5648	2620	2188	679
Oth Wood Marquetry & Inland Wood	Kg	364645	92036	299330	100474	331478	88143	418571	151417	316511	130263
Clothes Hangers of Wood	Kg	33970	16047	37444	17530	78332	34824	150979	52884	143213	48869
Other,Articles Of Wood	Kg	390959	131103	278554	152372	334878	214801	11272793	350811	1486061	500304
Total			10964749		13363708		14521563		16531729		11978950

Source:- 1.   Agricultural Statistics of Pakistan, M/O National Food Security and Research
2.   External Trade Section, PBS Karachi.

- = Indicates Nil

Table B-09: Export of Crude Oil and Petroleum Products

(Unit:Qty. in Tonnes)
(Value in Million)

Products	Year					
	2014-15	2015-16	2016-17	2017-18	2018-19	ACGR
Crude Oil	565,750	318,362	189,817	383,317	553,907	85.6%
	584,872	329,123	196,233	396,273	572,629	
	(287.02)	(97.88)	(75.00)	(183.89)	(258.38)	
Energy Products Naphtha	997,964	794,921	677,816	639,388	418,941	-13.3%
	1,066,225	849,294	724,179	683,122	447,597	
	(608.59)	(291.89)	(284.93)	(337.07)	(215.87)	
HSD	370	13	-	-	1,903	2.0%
	389	14	-	-	2,001	
	(0.38)	(0.01)	-	-	(1.51)	
JP-1	58,193	82,438	88,308	174,336	134,044	17.0%
	60,032	85,043	91,099	179,845	138,280	
	(62.86)	(53.24)	(60.77)	(142.39)	(120.71)	
Furnace oil	-	-	-	-	12,652	
	-	-	-	-	12,319	
	-	-	-	-	(6.34)	
Total Energy Products:	1,056,527	877,372	766,124	813,724	567,540	-9.2%
	1,126,646	934,350	815,277	862,967	600,196	
	(671.83)	(345.14)	(345.70)	(479.46)	(344.43)	
Lubes	19,950	13,651	7,458	7,423	1,811	
	(13.25)	(8.01)	(3.98)	(4.04)	(1.05)	

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan.

Table B-10: Import of Petroleum Products

(Unit:Qty. in Tones)
(Qty. in TOE)
(Value in Million US $)

Products	Year					ACGR
	2014-15	2015-16	2016-17	2017-18	2018-19	
100/LL	47,000	110,271	119,278	236,538	222,587	11.4%
	48,979	114,914	124,300	246,496	231,958	
	(43.86)	(52.65)	(57.84)	(147.41)	(150.25)	
HOBC **	-	-	135,794	86,441	82,397	
	-	-	144,376	91,904	87,605	
	-	-	(77.81)	(59.85)	(64.18)	
HSD	3,277,000	3,064,764	3,796,040	3,845,272	2,537,798	-0.2%
	3,445,110	3,221,987	3,990,777	4,042,534	2,667,987	
	(2,107.00)	(1,128.37)	(1,749.19)	(2,126.70)	(1,607.86)	
High Sulphur Furnace Oil	6,701,000	5,219,995	5,869,157	3,791,786	552,239	-39.0%
	6,524,764	5,082,709	5,714,798	3,692,062	537,715	
	(3,060.00)	(1,145.26)	(1,730.67)	(1,401.42)	(252.57)	
Low Sulphur Furnace Oil *	-	903,147	663,889	455,588	-	
	-	879,394	646,429	443,606	0	
	-	(234.55)	(229.2)	(183.03)		
Motor Spirit	3,322,000	4,251,563	4,561,112	4,928,112	5,411,866	18.7%
	3,549,225	4,542,370	4,873,092	5,265,195	5,782,037	
	(2202)	(2098)	(2339.14)	(3,066.28)	(3,564.94)	
Total:	**13,347,000**	**13,549,740**	**15,145,270**	**13,343,737**	**8,806,887**	-5.2%
	13,568,078	**13,841,374**	**15,493,772**	**13,781,798**	**9,307,302**	
	(7,412.86)	**(4,658.83)**	**(6,183.85)**	**(6,984.69)**	**(5,639.80)**	
Annual Growth Rate of Qty	**15.83%**	**1.52%**	**11.78%**	**-11.90%**	**-34.00%**	

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan.
* For convenience of calculations, the conversion factors for HSFO & LSFO have been assumed as same.
** HOBC 97 and HOBC 95.

Table B-11: Import of Crude Oil

(Unit: Qty. in Tones)
(Qty. in TOE)
(Value in Million US $)

Refinery	Year					
	2014-15	2015-16	2016-17	2017-18	2018-19	ACGR
Byco Petroleum Pakistan	1,406,555	1,404,399	1,387,838	2,784,240	2,109,446	22.6%
	1,454,097	1,451,868	1,434,747	2,878,347	2,180,745	
	(781.44)	(480.40)	(667.72)	(1368.49)	(1302.20)	
Pakistan Refinery	1,201,701	1,403,804	1,336,423	1,334,855	1,344,967	2.2%
	1,242,318	1,451,253	1,381,594	1,379,973	1,390,427	
	(666.36)	(460.73)	(477.16)	(639.11)	(716.04)	
National Refinery	1,722,115	1,898,483	1,966,279	2,042,775	2,000,195	1.6%
	1,780,322	1,962,652	2,032,739	2,111,821	2,067,802	
	(954.28)	(576.47)	(718.65)	(946.97)	(1,056.02)	
PARCO	4,001,868	3,969,098	3,969,921	4,168,726	3,511,388	-3.6%
	4,137,131	4,103,254	4,104,104	4,309,629	3,630,073	
	(2,179.05)	(1,236.12)	(1,035.76)	(1,949.08)	(1,867.58)	
Total:	8,332,239	8,675,784	8,660,461	10,330,596	8,965,996	2.2%
	8,613,869	8,969,025	8,953,185	10,679,770	9,269,047	
	(4,581.13)	(2,753.72)	(2,899.29)	(4,903.65)	(4,941.86)	
Annual Growth Rate of Quantity	3.67%	4.12%	-0.18%	19.28%	-13.21%	

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan

Table B-12: Import of Coal *

Unit → Year ↓	Tonnes	TOE	Import Value (million Rs)	Annual Growth Rate (%)
2008-09	4,651,751	3,060,387	(47,321)	-22.30
2009-10	4,657,829	3,064,386	(34,937)	0.13
2010-11	4,267,058	2,807,297	(44,832)	-8.39
2011-12	4,056,897	2,669,033	(50,367)	-4.93
2012-13	3,709,940	2,440,770	(47,705)	-8.55
2013-14	3,119,155	2,052,092	(31,072)	-15.92
2014-15	5,003,806	3,292,004	(52,762)	60.42
2015-16	4,885,260	3,214,013	(47,415)	-2.37
2016-17	7,020,844	4,619,013	(81,280)	43.71
2017-18	13,683,895	9,002,635	(154,795)	94.90
2018-19	15,685,874	10,319,737	(154,795)	14.63
ACGR	38.1%			

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan
*   Includes coal imported by Pakistan Steel for use as coke.

Table B-13: Revenue Earned by Forest Department

(Million Rs.)

Year	Total	Balochistan	KP	Punjab	Sindh	Gilgit-Baltistan	Azad Kashmir
208-09	1833.042	2.060	585.120	891.560	75.190	N.A	279.112
2009-10	1029.349	N.A	640.742	N.A	73.922	N.A	314.685
2010-11	1797.958	40.233	749.820	N.A	703.565	5.046	299.294
2011-12	2423.889	40.250	874.730	1085.500	101.520	3.272	318.617
2012-13	2922.181	N.A	675.848	1782.900	129.959	14.863	318.611
2013-14	2016.887	24.230	484.890	1332.155	139.823	35.789	233.971
2014-15	1502.924	20.439	355.596	966.524	150.734	9.631	278.007
2015-16	1298.380	28.494	229.194	847.347	179.104	14.241	170.297
2016-17	1253.451	17.022	244.161	763.632	217.246	11.390	166.306
2017-18	1162.825	18.820	169.751	758.922	206.066	9.266	172.362
2018-19	1051.200	11.320	53.907	781.068	124.471	80.434	233.426

Source:- 1. Agricultural Statistics of Pakistan, M/O National Food Security and Research
2. Provincial Chief Conservators.
N.A=Not available

Table B-14: Solid Waste Generation Estimates

City	Generation Rate		Waste Generated	
	Kg/capita/day	Kg/h/day	Tons/day	Tons/year
2019 Year				
Karachi	0.595	2.975	9576	3495240
Bannu	0.500	4.725	125	45,000
Quetta	0.405	-	1250	-
Faisalabad	0.480	-	1574	574510
Lahore	0.480	-	5351	1953115
Bahawalpur	0.470	2.800	325	118,625
Rawalpindi	0.460	-	817	98,205
Gujranwala	0.790	2.940	1100	401,500
TMA (KP)	Generation Rate		Waste Generated	
	Kg/capita/day	Kg/h/day	Tons/day	Tons/year
2019 Year				
Banda Dadu Shah	2240	1120	2	720
Dargai	-	-	6	1860
Hungu	-	-	15	4800
TMA Karak	-	-	-	-
Town-IV Peshawar	0.840	0.840	34	9000
Tangi	-	-	3	936
Mastuj	-	-	-	-
Pabbi	-	-	-	-
Batkhela	0.4850	3.840	33.350	12,173
Takht Bhai	-	-	-	25720

Source: i. Tehsil Municipal Administration of each district
ii. Local Govt., Elections and Rural Development Department Local Council Board, Peshawar
N.A=Not available

Table B-15: Physical Composition of Waste

(Unit: Qty. in Tones)

City → Waste ↓	2019 Year						
	Faisalabad	Lahore	Bahawalpur	Rawalpindi	Gujranwala	Quetta	Bannu
Plastic & Rubber	37918	-	23.86	93	5260	13.44	9000
Metals	5745	1176	5.85	7428	1164	17.67	2250
Paper	44065	-	20.80	-	21159	-	2250
Cardboard	-	-	19.17	-	-	-	1350
Rags	37516	-	1.36	-	-	-	900
Bones	13788	-	-	-	-	-	2250
Board Papers	-	-	-	-	-	7.04	5400
Food Waste	194242	-	145.73	-	-	1247.33	9000
Animal Waste	13444	-	11.77	-	-	-	2250
Leaves Grass etc.	42284	-	26.07	-	2008	-	450
Wood	6147	-	-	-	-	1.04	225
Fines	-	-	10.11	-	-	-	112.50
Debris	-	-	15.15	-	-	-	-
Stones	165401	-	-	11328	15096	-	-
Combustibles	-	118569	-	21140		-	-
Diaper	-	99166	23.47	155	24291	4.52	4500
Elec. –Electro.	-	588	-	1981		2.95	-
Glass	13961	13523	11.05	4457	6705	51.46	3600
Hazardous	-	26065	-	169307	3051	-	-
Biodegradable	-	1103766	-	34450	-	-	112.50
Non-Combust	-	125428	-		-	-	-
Paper-Card	-	42724	6.4	186	-	-	-
Pet	-	1764	-	34326	-	-	-
Nylon	-	214011	-	1455	38946	-	112.50
Plastics	-	12347	-	4488	5340	193.94	0
Tetrapak	-	19990	-	18726	3935	-	1237.50
Textile	-	180499	6.92	-	21480	47.00	0
Other	-	196	3.94	309520	253065	521.83	0
Total	574510	1959812	325	93	401500	1867.04	45000

Source:- Tehsil Municipal Administration of each districts
N.A =   Not Available

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Table B-15: Physical Composition of Waste of Peshawar District

(Unit: Qty. in Tones)

Peshawar's Tehsil Waste	2019 Year								
	Banda Dadu Shah	Dargai	Hungu	Town-IV Peshawar	Tangi	Mastuj	Pabbi	Batkhela	Takht Bhai
Plastic & Rubber	72	20	2	1350	3	9.12	55	1080	200
Metals	-	-	-	90	-	2.64	-	-	100
Paper	72	30	-	90	1	-	30	1080	220
Cardboard	-	10	-	90		-	35	-	120
Rags	-	200	-	-	-	-	28	-	80
Bones	-	10	8	90	1	6	43	108	500
Board Papers	-	10	-	90	-	1.92	44	-	300
Food Waste	-	300	-	-	1	19.2	339	864	9000
Animal Waste	216	200	6	6570	10	48	48	864	3000
Leaves Grass etc.	-	-	1200	450	15	-	23	864	8000
Wood	72	100	1	-	1	-	5	109	2000
Fines	-	-	-	-	36	-	-	-	-
Debris	-	70	-	540	20	-	467	864	-
Stones-Dust ,ash	-	200	2800	180	30	-	10	864	500
Combustibles	-	-	-	90	0.2	-	-	-	-
Diaper	-	400	2	180	-	2.016	55	109	300
Elec. –Electro.	-	-	1	-	0.5	-	3	109	-
Glass	144	10	18	-	2	16.56	20	216	300
Hazardous	-	100	-	-	1	16.8	7	864	-
Biodegradable	-	-	-	90	-	12.48	3	-	500
Non-Combust	-	-	-	-	-	-	-	-	-
Paper-Card	-	-	-	-	-	-	-	-	-
Pet	-	-	-	-	-	-	-	-	-
Nylon	72	-	-	-	0.5	-	2	-	-
Plastics	172	-	-	-	-	-	-	-	-
Tetrapak	-	200	2	-	2	-	44	108	300
Textile	-	-	1	-	2	-	-	109	100
Other	-	-	759	-	807	8.5	51	-	200
Total	720	1860	4800	9000	936	143.236	1311	8212	25720

Source: Local Govt., Elections and Rural Development Department Local Council Board, Peshawar   Contd..

Table B-16 (a): Waste Generation Rate and Amount

City	Generation rate (Kg/Capita/Day)	Waste Generation (Tons/Day)
2019		
Bannu	0.85	125
Quetta	0.405	1250
Faisalabad	0.48	1574
Lahore	-	5351
Bahawalpur	0.47	325
Rawalpindi	0.46	817
Gujranwala	-	1100

Table B-16(b): Waste Generation Rate and Amount

TMA (KP)	Generation rate (Kg/Capita/Day)	Waste Generation (Tons/Day)
2019		
Banda Dadu Shah	2240	2
Dargai	6	6
Hungu	-	-
TMA Karak	-	-
Town-IV Peshawar	0.25	100
Tangi	-	-
Mastuj	-	-
Pabbi	-	-
Batkhela	0.33	22.5
Takht Bhai	-	-

Source:- Tehsil Municipal Administration of each district

Table- B-17: Results of Chemical Analysis of Water Samples from River Ravi

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
At Ravi siphon Lahore	14-Feb	8.47	0.36	0.15	_	0.09	0.12	_	0.02
	14-Apr	7.54	0.3	0.07	_	0.07	0.4	_	0.02
	14-Jun	7.54	1.60	17.24	_	0.06	0.5	_	0.01
	14-Aug	8.31	0.22	0.09	_	0.11	0.09	_	0.01
	14-Oct	8.05	0.34	0.07	_	0.08	0.05	_	0.01
	14-Dec	7.01	0.36	0.08	_	0.05	0.18	_	0.01
	15-Feb	7.50	0.29	0.08	_	0.14	0.15	_	0.03
	15-Apr	7.84	0.31	0.85	0.40	0.14	0.29	_	0.02
	15-Jun	8.00	0.34	0.4	_	0.11	0.18	_	0.02
	15-Aug	7.60	0.21	0.09	_	0.14	0.06	_	0.01
	15-Oct	8.18	0.33	0.08	_	0.07	0.12	_	0.02
	15-Dec	8.21	0.34	0.25	_	0.1	0.04	_	0.01
	16-Feb	8.44	0.31	0.25	0.10	0.04	0.05	_	0.01
	16-Apr	8.00	0.23	0.20	_	0.03	0.04	_	0.01
	16-Jun	6.50	0.16	0.22	_	0.03	0.09	_	0.01
	16-Aug	7.35	0.23	0.19	_	0.04	0.05	_	0.01
	16-Oct	8.61	0.32	0.32	_	0.05	0.01	_	0.01
	16-Dec	8.20	0.35	0.39	_	0.04	0.01	_	0.01
	17-Feb	7.00	0.34	1.03	_	0.03	0.02	_	0.01
	17-Apr	7.30	0.21	0.42	_	0.04	0.02	_	0.03
	17-Jun	6.10	0.20	0.00	_	0.03	0.02	_	0.01
	17-Aug	7.42	0.26	0.97	0.30	0.04	0.04	_	0.01
	17-Oct	7.80	0.33	0.41	_	Missing			
	17-Dec	7.70	0.36	0.23	_	0.05	0.04	_	7.70
Balloki Head works	14-Feb	8.37	0.35	0.42	-	0.10	0.18	_	0.01
	14-Apr	7.38	0.32	0.98	0.50	0.08	0.13	_	0.02
	14-Jun	8.00	0.23	0.42	-	0.07	0.28	_	0.02
	14-Aug	8.25	0.27	0.1	-	0.09	0.17	_	0.01
	14-Oct	7.45	0.32	0.24	-	0.10	0.09	_	0.02
	14-Dec	7.04	0.36	0.15	-	0.04	0.13	_	0.02
	15-Feb	7.76	0.43	0.85	-	0.13	0.09	_	0.02
	15-Apr	7.86	0.32	0.98	-	0.14	0.16	_	0.01
	15-Jun	8.15	0.23	0.29	-	0.15	0.13	_	0.02
	15-Aug	7.50	0.26	0.17	-	0.08	0.11	_	0.01
	15-Oct	8.17	0.38	0.15	-	0.12	0.04	_	0.01
	15-Dec	7.90	0.35	1.40	0.20	0.05	0.06	_	0.02
	16-Feb	8.34	0.36	0.50	-	0.04	0	_	0.01
	16-Apr	8.00	0.30	0.54	-	0.04	0.04	_	0.02
	16-Jun	7.20	0.21	0.19	-	0.03	0	_	0.02
	16-Aug	7.30	0.23	0.09	-	0.03	0.06	_	0.01
	16-Oct	8.52	0.32	0.73	-	0.06	0.07	_	0.01
	16-Dec	7.90	0.39	1.05	-	0.04	0.02	_	0.01
	17-Feb	7.10	0.43	0.32	-	0.05	0.06	_	0.01
	17-Apr	7.40	0.25	0.61	-	0.03	0.02	_	0.01
	17-Jun	6.70	0.24	0.08	-	0.05	0.02	_	0.01
	17-Aug	7.42	0.20	0.31	-	0.03	0.01	_	0.01
	17-Oct	7.80	0.20	0.20	-	Missing			
	17-Dec	7.60	0.70	2.65	0.80	0.05	0.06	_	0.01

Table- B-17: Results of Chemical Analysis of Water Samples from River Ravi

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Sidhnai Head works	14-Feb	8.48	0.61	2.10	0.20	0.08	0.32	-	0.02
	14-Apr	8.70	0.44	1.62	-	0.15	0.09	-	0.02
	14-Jun	7.99	0.27	0.60	-	0.09	0.21	-	0.01
	14-Aug	8.46	0.46	1.80	-	0.07	0.37	-	0.01
	14-Oct	8.03	0.88	2.90	-	0.10	0.09	-	0.02
	14-Dec	7.79	0.44	1.49	-	0.08	0.18	-	0.02
	15-Feb	7.70	0.40	0.83	-	0.12	0.11	-	0.02
	15-Apr	7.67	0.81	3.52	-	0.11	0.27	-	0.01
	15-Jun	8.00	0.48	1.20	-	NA			
	15-Aug	8.02	0.50	2.18	-	0.17	0.09	-	0.01
	15-Oct	7.96	0.38	1.26	-	0.12	0.23	-	0.02
	15-Dec	7.60	0.85	3.30	-	0.14	0.06	-	0.02
	16-Feb	8.01	0.57	1.58	-	0.04	0.07	-	0.01
	16-Apr	7.40	0.68	2.85	-	0.04	0.04	-	0.01
	16-Jun	7.68	0.42	1.09	-	0	0.02	-	0.01
	16-Aug	7.32	0.33	0.6	-	0.04	0.05	-	0.01
	16-Oct	7.23	0.73	3.21	-	0.04	0.01	-	0.02
	16-Dec	7.08	0.72	3.13	-	0.03	0.06	-	0.02
	17-Feb	8.20	0.90	3.4	-	0.04	0.05	-	0.01
	17-Apr	8.20	0.55	2.03	-	Missing			
	17-Jun	7.20	0.37	0.85	-	0.03	0.01	-	0.02
	17-Aug	7.90	0.40	1.83	0.70	0.07	0.05	-	0.01
	17-Oct	7.73	1.00	4.24	-	0.03	0.02	-	0.02
	17-Dec	7.50	1.10	5.59	-	0.03	0.05	-	0.01
Head Warks Sulemanki	15-Feb	7.60	0.46	1.10	-	0.16	0.20	-	0.02
	15-Apr	8.57	0.37	1.00	-	0.09	0.07	-	0.03
	15-Jun	8.04	0.28	0.56	-	0.14	0.10	-	0.02
	15-Aug	8.10	0.30	0.54	-	0.12	0.13	-	0.02
	15-Oct	8.10	0.69	2.60	-	0.13	0.34	-	0.01
	15-Dec	Not Sampled							
	16-Feb	7.90	0.51	1.58		0.04	0.06	-	0.01
	16-Apr	8.20	0.36	1.00	0.20	0.03	0.01	-	0.01
	16-Jun	6.50	0.27	0.48	-	0.04	0.01	-	0.02
	16-Aug	7.10	0.32	0.34	-	0.04	0.01	-	0.02
	16-Oct	8.10	0.44	1.08	-	0.08	0.06	-	0.02
	16-Dec	8.18	0.53	1.83	-	0.03	0.01	-	0.01
	17-Feb	7.50	0.51	1.23	-	0.05	0.04	-	0.01
	17-Apr	8.00	0.45	0.95	-	0.03	0.05	-	0.02
	17-Jun	7.20	0.34	0.69	-	0.03	0.02	-	0.02
	17-Aug	6.80	0.36	1.00	-	0.04	0.05	-	0.01
	17-Oct	6.50	0.43	1.48	-	0.06	0.07	-	0.02
	17-Dec	7.30	0.40	0.91	-	0.04	0.02	-	0.01

Table B-17: Results of Chemical Analysis of Water Samples from River Sutlej

| Sampling site | Reference Values | 9-Jun | 1.5 | 10 | 2.5 | 0.2 | 0.2 | 5 | 0.02 |
| | | Chemical parameters | | | | Trace metals | | | |
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Head Islam	14-Feb	8.24	0.42	1.00	-	0.08	0.07	-	0.02
	14-Apr	7.80	0.44	2.82	0.60	0.10	0.24	-	0.02
	14-Jun	8.31	0.41	2.00	-	0.08	0.24	-	0.02
	14-Aug	8.56	0.32	0.26	-	0.06	0.05	-	0.02
	14-Oct	7.81	0.58	1.15	-	0.10	0.09	-	0.02
	14-Dec	7.90	0.54	1.77	-	0.05	0.06	-	0.02
	15-Feb	7.50	0.75	2.90	-	0.13	0.06	-	0.01
	15-Apr	8.60	0.53	1.90	-	0.12	0.17	-	0.03
	15-Jun	8.12	0.29	1.02	0.30	0.19	0.18	-	0.02
	15-Aug	7.40	0.31	0.24	-	0.14	0.23	-	0.02
	15-Oct	8.00	1.09	4.69	-	0.16	0.16	-	0.02
	15-Dec	Not Sampled							
	16-Feb	8.00	0.60	2.50	-	0.04	0.05	-	0.02
	16-Apr	8.20	0.39	0.95	-	0.03	0.04	-	0.02
	16-Jun	6.10	0.28	0.08	-	0.04	0.01	-	0.01
	16-Aug	7.00	0.35	1.00	-	0.00	0.04	-	0.01
	16-Oct	8.00	0.77	2.70	-	0.08	0.02	-	0.02
	16-Dec	8.19	0.54	2.08	-	0.03	0.02	-	0.01
	17-Feb	8.00	0.56	1.51	-	0.07	0.07	-	0.02
	17-Apr	8.00	0.34	0.42	-	Missing			
	17-Jun	7.00	0.34	0.93	-	0.03	0.01	-	0.01
	17-Aug	6.59	0.37	1.33	-	0.03	0.05	-	0.01
	17-Oct	6.20	0.42	1.39	0.10	0.04	0.07	-	0.02
	17-Dec	6.80	0.40	1.46	0.10	0.04	0.02	-	0.01
Head warks punjnad	14-Feb	7.86	0.66	2.75	-	0.1	0.24	-	0.02
	14-Apr	7.78	0.48	2.1	-	0.11	0.17	-	0.01
	14-Jun	8.16	0.29	0.8	-	0.07	0.23	-	0.01
	14-Aug	8.45	0.41	0.82	-	0.10	0.12	-	0.02
	14-Oct	8.10	0.70	1.96	-	0.04	0.22	-	0.02
	14-Dec	7.90	0.54	1.65	-	0.06	0.09	-	0.03
	15-Feb	7.90	0.44	1.24	-	0.13	0.06	-	0.01
	15-Apr	8.56	0.61	2.15	-	0.12	0.17	-	0.03
	15-Jun	8.08	0.31	0.96	-	0.19	0.18	-	0.02
	15-Aug	8.00	0.32	0.72	-	0.14	0.23	-	0.02
	15-Oct	8.10	0.60	2.5	-	0.16	0.16	-	0.02
	15-Dec	Not Sampled							
	16-Feb	7.91	0.4	0.93	-	0.04	0.02	-	0.02
	16-Apr	8.00	0.31	1.13	-	0.04	0	-	0.02
	16-Jun	6.80	0.30	1.00	-	0.05	0.05	-	0.01
	16-Aug	7.00	0.46	1.27	-	0.04	0.04	-	0.01
	16-Oct	8.17	0.66	2.4	-	0.08	0.02	-	0.02
	16-Dec	8.25	0.46	1.8	-	0.03	0.02	-	0.01
	17-Feb	Not Sampled							
	17-Apr	7.60	0.45	0.95	-	0.03	0.01	-	0.03
	17-Jun	7.20	0.21	0.09	-	0.04	0.02	-	0.01
	17-Aug	6.83	0.39	0.56	-	0.04	0.02	-	0.01
	17-Oct	6.10	0.33	0.81	-	0.03	0.04	-	0.01
	17-Dec	Not Sampled							

Table B-17: Results of Chemical Analysis of Water Samples from River Chenab

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Chenab at Marala Head works	14-Feb	8.23	0.28	0.18	-	0.11	0.09	-	0.01
	14-Apr	7.72	0.23	0.18	-	0.15	0.11	-	0.02
	14-Jun	7.95	0.25	0.20	-	0.13	0.21	-	0.01
	14-Aug	8.17	0.18	0.10	-	0.09	0.18	-	0.01
	14-Oct	7.38	0.26	0.08	-	0.04	0.07	-	0.01
	14-Dec	6.79	0.32	0.08	-	0.08	0.05	-	0.02
	15-Feb	7.80	0.28	0.08	-	0.08	0.09	-	0.02
	15-Apr	7.80	0.28	0.36	-	0.16	0.27	-	0.01
	15-Jun	7.90	0.19	0.09	-	0.08	0.29	-	0.02
	15-Aug	7.60	0.22	0.19	-	0.07	0.13	-	0.01
	15-Oct	8.00	0.25	0.08	-	0.11	-	-	0.02
	15-Dec	8.08	0.30	0.27	-	0.10	0.04	-	0.01
	16-Feb	8.31	0.29	0.27	-	0.04	0.10	-	0.02
	16-Apr	7.80	0.22	0.21	-	0.00	0.05	-	0.01
	16-Jun	7.40	0.18	0.09	-	0.04	0.00	-	0.01
	16-Aug	7.60	0.17	0.11	-	0.03	0.04	-	0.01
	16-Oct	8.50	0.22	0.18	-	0.05	0.01	-	0.01
	16-Dec	8.10	0.39	0.95	-	0.03	0.05	-	0.02
	17-Feb	Not Sampled							
	17-Apr	6.90	0.17	0.01	-	0.04	0.02	-	0.01
	17-Jun	6.50	0.16	0.00	-	0.07	0.06	-	0.01
	17-Aug	7.40	0.23	0.40	-	0.03	0.05	-	0.01
	17-Oct	7.66	0.20	0.20	-	0.03	0.05	-	0.01
	17-Dec	Not Sampled							
Head Khanki Mainline	14-Feb	7.52	0.28	0.16	-	0.06	0.29	-	0.02
	14-Apr	7.16	0.27	0.27	-	0.06	0.26	-	0.02
	14-Jun	7.06	0.3	0.56	-	0.07	0.33	-	0.02
	14-Aug	8.26	0.15	0.1	-	0.15	0.09	-	0.02
	14-Oct	7.31	0.28	0.27	-	0.07	0.04	-	0.01
	14-Dec	Not Sampled							
	15-Feb	7.84	0.31	0.55	-	0.14	0.07	-	0.01
	15-Apr	7.50	0.22	0.09	-	0.13	0.07	-	0.02
	15-Jun	7.52	0.23	0.08	-	0.10	0.12	-	0.03
	15-Aug	Not Sampled							
	15-Oct	7.60	0.28	0.27	-	0.20	0.09	-	0.01
	15-Dec	Not Sampled							
	16-Feb	7.40	0.23	0.3	-	0.04	0.04	-	0.01
	16-Apr	7.40	0.26	0.56	-	0.04	0.01	-	0.02
	16-Jun	7.40	0.20	0.01	-	0.07	0.04	-	0.02
	16-Aug	7.12	0.22	-	-	0.04	0.01	-	0.01
	16-Oct	6.80	0.25	0.17	-	0.06	0.01	-	0.01
	16-Dec	7.30	0.27	0.23	-	0.03	0.01	-	0.02
	17-Feb	7.60	0.35	1.14	-	0.04	0.07	-	0.01
	17-Apr	7.00	0.25	0.18	-	0.04	0.04	-	0.02
	17-Jun	8.31	0.25	0.07	-	0.04	0.04	-	0.01
	17-Aug	7.33	0.20	0.20	-	0.03	0.01	-	0.01
	17-Oct	7.00	0.29	0	-	0.04	0.11	-	0.01
	17-Dec	7.60	0.30	0.45	-	0.04	0.05	-	0.01

Contd..

Table B-17: Results of Chemical Analysis of Water Samples from River Chenab

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Tail of R-Q link canal Qaderabad barrage	14-Feb	8.15	0.27	0.10	-	0.05	0.05	-	0.01
	14-Apr	8.36	0.25	0.30	0.10	0.12	0.24	-	0.01
	14-Jun	7.98	0.21	0.09	-	0.07	0.07	-	0.02
	14-Aug	7.47	0.34	0.07	-	0.17	0.21	-	0.01
	14-Oct	8.00	0.23	0.08	-	0.05	0.12	-	0.01
	14-Dec	7.82	0.26	0.08	-	0.17	0.15	-	0.02
	17-Feb	7.20	0.31	0.00	-	0.06	0.05	-	0.01
	17-Apr	7.76	0.19	0.45	-	0.07	0.09	-	0.01
	17-Jun	7.50	0.22	0.20	-	0.03	0.01	-	0.01
	17-Aug	8.50	0.19	0.05	-	0.03	0.04	-	0.01
	17-Oct	7.06	0.20	0.10	-	0.03	0.01	-	0.01
	17-Dec	8.07	0.26	0.60	0.40	0.05	0.07	-	0.01
Trimmu Head works	14-Feb	8.31	0.46	1.45	-	0.11	0.05	-	0.01
	14-Apr	7.96	0.49	1.67	-	0.04	0.17	-	0.02
	14-Jun	8.02	0.47	2.50	-	0.06	0.39	-	0.02
	14-Aug	8.38	0.50	1.45	-	0.04	0.27	-	0.02
	14-Oct	7.53	0.89	3.64	-	0.08	0.11	-	0.01
	14-Dec	7.40	0.67	2.34	-	0.06	0.10	-	0.02
	15-Feb	7.60	0.84	1.50	-	0.15	0.09	-	0.02
	15-Apr	7.77	0.93	4.45	-	0.10	0.10	-	0.02
	15-Jun	8.00	0.47	1.63	-	0.17	0.07	-	0.02
	15-Aug	7.99	0.45	1.64	-	0.16	0.17	-	0.02
	15-Oct	7.86	0.46	1.28	-	0.13	0.15	-	0.01
	15-Dec	7.30	0.37	0.85	-	0.12	0.10	-	0.02
	16-Feb	7.86	0.35	0.7	-	0.03	0.06	-	0.02
	16-Apr	7.7	0.44	2.2	0.10	0.03	0.01	-	0.01
	16-Jun	7.63	0.38	1.54	-	0.08	0.04	-	0.02
	16-Aug	6.73	0.37	0.47	-	0.04	0.02	-	0.02
	16-Oct	7.17	0.72	3.26	-	0.04	0.02	-	0.01
	16-Dec	7.23	0.76	3.32	-	0.04	0.05	-	0.02
	17-Feb	8.00	0.86	3.80	-	0.08	0.07	-	0.01
	17-Apr	8.10	0.58	2.05	-	0.03	0.04	-	0.02
	17-Jun	7.20	0.36	0.67	-	0.03	0.04	-	0.02
	17-Aug	8.06	0.45	2.04	-	0.07	0.01	-	0.01
	17-Oct	7.88	1.00	4.24	-	0.08	0.05	-	0.02
	17-Dec	7.70	0.91	4.23	-	0.02	0.05	-	0.01

Table B-17: Results of Chemical Analysis of Water Samples from River Jhelum

Sampling Site	Reference Values	9-JUN	1.5	10	2.5	0.2	0.2	5
		Chemical parameters				Trace metals		
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l
Head from Mangla Dam	14-Feb	7.55	0.20	0.3	-	0.10	0.17	0.02
	14-Apr	8.40	0.25	0.16	-	0.06	0.26	0.01
	14-Jun	7.23	0.20	0.09	-	0.12	0.12	0.02
	14-Aug	7.92	0.19	0.09	-	0.10	0.05	0.01
	14-Oct	8.03	0.21	0.09	-	0.07	0.07	0.01
	14-Dec	7.76	0.26	0.08	-	0.11	0.13	0.03
	15-Feb	7.82	0.26	0.08	-	0.12	0.07	0.01
	15-Apr	7.72	0.26	0.09	-	0.12	0.27	0.01
	15-Jun	7.80	0.19	0.20	-	0.17	0.09	0.02
	15-Aug	7.72	0.21	0.33	-	0.07	0.07	0.01
	15-Oct	7.60	0.25	0.08	-	0.11	0.07	0.02
	15-Dec	7.70	0.24	0.16	-	0.15	0.07	0.02
	16-Feb	7.39	0.26	0.08	-	0.03	0.09	0.01
	16-Apr	8.69	0.23	0.19	-	0.05	0.02	0.01
	16-Jun	7.20	0.20	0.09	-	0.08	0.02	0.03
	16-Aug	7.45	0.19	0.23	-	0.03	0.02	0.02
	16-Oct	6.90	0.28	0.27	-	0.05	0.02	0.01
	16-Dec	8.50	0.25	0.20	-	0.06	0.02	0.02
River Jehlum	17-Feb	7.10	0.32	0.00	-	0.04	0.02	0.01
	17-Apr	7.60	0.18	0.10	-	0.04	0.00	0.01
	17-Jun	8.00	0.19	0.11	-	0.03	0.01	0.02
	17-Aug	8.63	0.25	0.86	0.50	0.02	0.04	0.01
	17-Oct	6.99	0.17	0.11	-	0.04	0.09	0.01
	17-Dec	8.00	0.26	0.28	-	0.04	0.04	0.01
Rasool Barrage	14-Feb	7.83	0.27	0.30	-	0.19	0.09	0.02
	14-Apr	8.40	0.25	0.15	-	0.15	0.30	0.01
	14-Jun	7.91	0.20	0.09	-	0.09	0.07	0.02
	14-Aug	7.93	0.25	0.71	-	0.06	0.11	0.03
	14-Oct	7.98	0.23	0.08	-	0.11	0.06	0.01
	14-Dec	7.75	0.26	0.08	-	0.10	0.05	0.02
	15-Feb	7.88	0.26	0.08	-	0.21	0.23	0.02
	15-Apr	7.84	0.28	0.37	-	0.11	0.27	0.01
	15-Jun	7.90	0.19	0.32	-	0.16	0.09	0.01
	15-Aug	7.82	0.21	0.14	-	0.11	0.10	0.01
	15-Oct	7.60	0.24	0.08	-	0.20	0.12	0.02
	15-Dec	7.74	0.25	0.16	-	0.06	0.20	0.01
	16-Feb	7.60	0.27	0.25	-	0.04	0.04	0.01
	16-Apr	8.50	0.25	0.29	-	0.05	0.04	0.01
	16-Jun	7.30	0.18	0.21	-	0.05	0.02	0.01
	16-Aug	7.56	0.19	0.18	-	0.03	0.00	0.02
	16-Oct	7.40	0.25	0.18	-	0.07	0.01	0.01
	16-Dec	8.33	0.25	0.10	-	Missing		
	17-Feb	7.20	0.30	0.16	-	0.05	0.00	0.01
	17-Apr	7.71	0.18	0.21	-	0.09	0.07	0.01
	17-Jun	7.80	0.20	0.10	-	0.04	0.05	0.02
	17-Aug	8.21	0.24	0.05	-	0.04	0.00	0.01
	17-Oct	7.26	0.21	0.10	-	0.03	0.06	0.01
	17-Dec	8.04	0.27	0.37	-	0.04	0.05	0.01

Table B-17: Results of Chemical Analysis of Water Samples from River Indus

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Jinnah Barrage	15-Feb	Not Sampled							
	15-Apr								
	15-Jun	8.13	0.17	0.23	-	0.11	0.17	-	0.01
	15-Aug	7.60	0.24	0.19	-	0.13	0.3	-	0.01
	15-Oct	Not Sampled							
	15-Dec	8.44	0.25	0.45	0.10	0.12	0.07	-	0.02
	16-Feb	7.80	0.32	0.47	-	0.03	0.12	-	0.01
	16-Apr	8.20	0.32	1.00	0.10	0.04	0.04	-	0.01
	16-Jun	8.20	0.33	0.32	-	0.07	0.02	-	0.02
	16-Aug	Not Sampled							
	16-Oct	8.46	0.32	0.33	-	0.05	0	-	0.02
	16-Dec	7.30	0.33	0.07	-	0.03	0.01	-	0.02
	17-Feb	7.60	0.33	0.41	-	0.03	0.10	-	0.01
	17-Apr	8.00	0.35	0.33	-	0.03	0.02	-	0.01
	17-Jun	Not Sampled							
	17-Aug								
	17-Oct								
	17-Dec	7.50	0.30	0.08	-	0.06	0.04	-	0.01
Chashma Barrage	15-Feb	Not Sampled							
	15-Apr								
	15-Jun	8.24	0.24	0.51	-	0.13	0.09	-	0.02
	15-Aug	7.54	0.30	0.90	-	0.14	0.23	-	0.02
	15-Oct	Not Sampled							
	15-Dec	8.45	0.26	0.45	-	0.13	0.01	-	0.01
	16-Feb	7.72	0.33	0.46	-	0.04	0.10	-	0.01
	16-Apr	8.00	0.31	0.31	-	0.03	0.04	-	0.01
	16-Jun	8.00	0.33	0.60	0.30	0.04	0.02	-	0.02
	16-Aug	Not Sampled							
	16-Oct	8.43	0.34	0.41	-	0.06	0	-	0.02
	16-Dec	6.60	0.32	0.08	-	0.03	0.01	-	0.02
	17-Feb	7.80	0.34	0.41	-	Missing			
	17-Apr	8.00	0.35	0.33	-	0.04	0.04	-	0.01
	17-Jun	Not Sampled							
	17-Aug								
	17-Oct								
	17-Dec	7.60	0.29	0.08	-	0.05	0.07	-	0.01

Contd…

Table B-17: Results of Chemical Analysis of Water Samples from River Indus

Sampling site	Reference Values	9-Jun	1.5	10	2.5	0.2	0.2	5	0.02
		Chemical parameters				Trace metals			
	Sampling Season	pH	EC dS/m	SAR	RSC me/l	Cu mg/l	Zn mg/l	Pb mg/l	Ni mg/l
Head Taunsa Barrage	14-Feb	7.98	0.32	0.20	-	0.13	0.22	-	0.02
	14-Apr	8.31	0.33	0.25	-	0.08	0.13	-	0.02
	14-Jun	8.06	0.25	0.34	-	0.07	0.11	-	0.01
	14-Aug	8.13	0.23	0.08	-	0.15	0.13	-	0.02
	14-Oct	8.06	0.25	0.04	-	0.04	0.10	-	0.02
	14-Dec	7.50	0.34	0.50	-	0.06	0.15	-	0.02
	15-Feb	7.80	0.37	0.30	-	0.11	0.26	-	0.01
	15-Apr	Not Sampled							
	15-Jun	7.90	0.26	0.27	-	0.11	0.20	-	0.02
	15-Aug	7.60	0.29	0.25	-	0.09	0.13	-	0.01
	15-Oct	7.88	0.32	0.63	-	0.12	0.06	-	0.01
	15-Dec	7.70	0.37	0.47	-	0.20	0.27	-	0.01
	16-Feb	8.40	0.35	0.51	-	0.03	0.04	-	0.01
	16-Apr	Not Sampled							
	16-Jun	7.00	0.24	0.08	-	0.06	0.05	-	0.02
	16-Aug	8.00	0.28	0.36	-	0.04	0.09	-	0.01
	16-Oct	Not Sampled							
	16-Dec	8.20	0.31	0.33	-	0.04	0.02	-	0.01
	17-Feb	7.20	0.37	0.75	-	0.06	0.05	-	0.01
	17-Apr	8.00	0.34	0.60	-	0.03	0.02	-	0.01
	17-Jun	7.10	0.24	0.08	-	0.03	0.02	-	0.02
	17-Aug	8.46	0.22	0.66	0.10	0.05	0.07	-	0.01
	17-Oct	7.20	0.37	0.75	-	0.06	0.05	-	0.01
	17-Dec	8.00	0.34	0.60	-	0.03	0.02	-	0.01
Indus Barrage River Sindh(Ghazi Chaat Pull)	14-Feb	7.99	0.33	0.10	-	0.14	0.35	-	0.01
	14-Apr	8.50	1.90	3.35	-	0.12	0.06	-	0.01
	14-Jun	8.14	0.24	0.24	-	0.08	0.10	-	0.02
	14-Aug	8.38	0.23	0.08	-	0.07	0.22	-	0.01
	14-Oct	8.22	0.30	0.54	-	0.12	0.09	-	0.02
	14-Dec	7.50	0.34	0.23	-	0.09	0.16	-	0.03
	15-Feb	8.00	0.36	0.14	-	0.08	0.04	-	0.02
	15-Apr	7.57	0.43	1.08	-	0.11	0.22	-	0.01
	15-Jun	8.20	0.25	0.28	-	0.19	0.07	-	0.01
	15-Aug	7.60	0.29	0.16	-	0.12	0.04	-	0.01
	15-Oct	7.78	0.31	0.54	-	0.13	0.07	-	0.02
	15-Dec	7.90	0.37	0.38	-	0.13	0.04	-	0.01
	16-Feb	8.10	0.35	0.51	-	0.03	0.04	-	0.01
	16-Apr	8.00	0.30	0.25	-	0.03	0.01	-	0.01
	16-Jun	7.20	0.22	0.09	-	0.04	0.00	-	0.01
	16-Aug	7.90	0.28	0.36	-	0.03	0.01	-	0.01
	16-Oct	7.22	0.26	0.37	-	0.04	0.01	-	0.01
	16-Dec	8.10	0.30	-	-	0.06	0.06	-	0.02
	17-Feb	7.00	0.37	0.47	-	0.06	0.09	-	0.01
	17-Apr	8.00	0.34	0.51	-	0.04	0.05	-	0.01
	17-Jun	7.60	0.21	0.31	-	0.05	0.01	-	0.02
	17-Aug	8.58	0.21	0.05	-	0.04	0.02	-	0.01
	17-Oct	8.32	0.31	0.06	-	0.03	0.10	-	0.01
	17-Dec	7.26	0.36	0.68	-	Missing			

Source: Directorate of Land Reclamation Punjab

Table B-18: Who Installed the Water Delivery System by Province, 2018-19

Province		Urban	Rural	Total
Punjab	Local Government	42.5	11.0	22.4
	Non-Government	15.8	19.5	18.2
	Household itself:	41.3	69.0	59.0
	Don't Know	0.4	0.4	0.4
	Total	100.0	100.0	100.0
sindh	Local Government	63.8	9.8	36.5
	Non-Government	6.4	25.9	16.2
	Household itself:	29.1	62.7	46.1
	Don't Know	0.7	1.6	1.2
	Total	100.0	100.0	100.0
Kkyber Pakhtunkhawa *	Local Government	47.0	25.9	29.8
	Non-Government	6.0	13.3	12.0
	Household itself:	45.5	59.0	56.5
	Don't Know	1.5	1.8	1.8
	Total	100.0	100.0	100.0
Balochistan	Local Government	69.5	22.5	36.1
	Non-Government	7.3	40.6	30.9
	Household itself:	20.3	32.6	29.1
	Don't Know	2.9	4.3	3.9
	Total	100.0	100.0	100.0
Total	Local Government	49.8	13.9	27.0
	Non-Government	12.1	20.4	17.4
	Household itself:	37.4	64.7	54.8
	Don't Know	0.7	1.0	0.9
	Total	100.0	100.0	100.0

Source: Pakistan Social and Living Standareds Measurement Survey, PBS.
*   In PSLM survey 2018-19 FATA included in KP.

Table B-19: Extent of Water logging and Salinity
 a) Canal Command-Wise Various Depth to Water (Logging)

(000 Hectare)

Description	Area Under Various Depth to Water table Ranges					Total Area
	0-150cm	150-300cm	300-450cm	450-600cm	>600cm	
Punjab	355.35	1552.96	1880.73	1463.96	4711	9964.00
Sindh	597.69	3973.28	781.06	273.89	109.97	5735.89
Balochistan	9.04	167.46	72.59	31.52	118.45	399.06
KP	16.91	130.21	99.42	63.68	277.28	587.5
Total	978.99	5823.91	2833.80	1833.05	5216.70	16686.45

b: Canal Command-Wise Various Depth to Water (Salinity)

(000 Hectare)

Description	Area Under Various Depth to Water table Ranges					Total Area
	0-150cm	150-300cm	300-450cm	450-600cm	>600cm	
Punjab	746.92	1375.60	1883.75	1462.4	4495.34	9964.01
Sindh	3274.21	1898.03	422.63	89.00	52.03	5735.90
KP	16.19	119.32	91.47	52.82	307.7	587.50
Balochistan	221.42	3.46	75.45	65.45	33.32	399.10
Total	4258.74	3396.41	2473.30	1669.67	4888.39	16686.51

Source:- Agricultural Statistics (2017-18)

Table B-20: Summary of Different Types of Pollutants on the Coast of Pakistan, 2015 to 2019

Area	Oil Sliks	Tar on Beaches	Tar Balls	Industrial Waste	Domestic Wastes	Heavy Metal Sediment	Thermal Pollution
Jiwani	+	+	+	---	+	---	---
Gwadar	+	+	+		+	+	----
East Bay	+	+	----	+	+	+	----
West Bay	++	+	+	++	++	+	---
Pasni	++	++	++	----	++	--	---
Ormara	+	+	+	---	---	---	---
Sonmiani Bay	+	+	----	+	+	+	----
Gadani	++	+++	++++	+++	+	++	---
Cape Monze	++	++	+++	++	+	+	----
Paradise Point	++	++	++	+	+	+	+++
Buleji	++	++	++	+	+	+	+
Hawksbay	++	+	+	+	+	+	----
Sandspit	++	+	+	+	+	+	
Manora Island (Open Seaside)	++	----	----	++	++	---	----
Manora Channel	++++	----	----	++++	+++	+++	----
Clifton	+++	++	----	++	+++	+++	---
Korangi Creek	+++	----	+	+++	+++	+++	----
Port Qasim	+++	----	++	+++	++	+++	++
Indus Delta	+++	++	+	++	++	++	--

Source:- National Institute of Oceanography, Karachi.

Note: -

+	= Low
++	= Medium
+++	= High
++++	= Highest
----	= Not Available

Table B-21: Major Natural Disasters in Pakistan

Year	Type of Major Disaster	Persons Died	Population Affected	Houses Destroyed/ Damaged	Cattle Head Lost
2014	Flood	367	2.5M	129,880	1.925
2015	Earthquake Punjab, KP,FATA, AJK	272	-	96,046	-
2018	Earthquake KP	1	-	-	-
2018	Earthquake Balochistan	1	-	2	-
2018	Earthquake FATA	-	-	1	-
2019	Earthquake Mir Pur, Azad Kashmir	39	329483	8315	-
2019	Earthquake North Western Kashmir	-	-	1080	45

Source: National Disaster Management Authority

Table B-22: Heavy Rains / Snowfall in February / March 2019
a.   Damages / Losses

Provinces	Deaths	Injured	Houses Damaged
Balochistan	13	12	2546
Khyber Pakhtunkhwa	43	75	121
Punjab	19	25	20
AJ&K	7	6	90
Gilgit Baltistan	45	81	360
FATA	0	0	7
TOTAL	**127**	**199**	**3,144**

Source: National Disaster Management Authority

b.   Relief Provided to PDMA Balochistan by NDMA

Items	Quantity
Tents	5551
Food packs (10,000 Ration Packs)	422.2 Tons
Blankets	13,796
Plastic Mats	20,000
Buckets	2555
Tarpaulins	300
Water cooler (8 ltr)	80

Source: National Disaster Management Authority

Table B-23:   Monsoon 2019 (June - September 2019)
a.   Damages / Losses

Provinces	Deaths	Injured	Houses Damaged
ICT	2	-	-
Balochistan	12	10	-
Khyber Pakhtunkhwa	78	69	216
Punjab	30	43	123
Sindh	63	17	34
AJ&K	42	18	132
Gilgit Baltistan	8	12	170
TOTAL	**235**	**169**	**675**

Source: National Disaster Management Authority

b.   Relief Provided During Monsoon 2019 by all Stakeholders

Provinces Wise	Tents	Food Items (Tons)	Blankets/Quits	Plastic mats	Sleeping bags	Mosquito nets	Jerry Cans
NDMA	500	2.1	800	0	0	0	0
Punjab	500	54	0	0	0	0	0
Khyber Pakhtunkhwa	227	4.25	100	300	0	100	100
Sindh	7,500	0	0	1,500	0	21,350	2,500
Balochistan	50	1	0	0	0	0	0
Gilgit Baltistan	141	10.91	231	232	0	0	0
AJ&K	150	11	200	200	100	0	0
TOTAL	**9068**	**83.26**	**1331**	**2232**	**100**	**21450**	**2600**

Source: National Disaster Management Authority

Table B-24: Earthquake 2019 Mirpur Kashmir (24 September 2019)

a. Damages / Losses

Category	Quantity
Population affected	329,483
Casualty / Deaths	39
Critically injured	182
Injured	1046
Houses	8,315
Health Facilities	17
Educational infrastructure	151
Roads and Highways (KM)	27
Bridges	4

Source: National Disaster Management Authority

b. Relief Provided During Earthquake by all Stakeholders

Items	Departments					Total
	NDMA	SDMA	DDMA (Mirpur)	PDMA (KP)	PDMA (PB)	
Tents	3,000	480	100	200	1,000	4,780
Shelter Tents	769	0	0	0	0	769
School Tents	420	0	0	0	0	420
Blankets	5,900	200	200	400	0	6,700
Ration Packs	1,300 (21 Kg each)	0	0	0	3,500	4,800
		0	0	0	(9 Kg each)	
Tarpaulins	2,500	0	0	0	0	2,500
Plastic Mats	0	200	60	0	0	260
Mosquito Nets	0	0	0	800	0	800
First Aid Kits	200	0	0	0	0	200
Water Bottles (Ltrs)	50,000	0	0	0	0	50,000
Kitchen Sets	275	0	0	200	0	475
Hygiene Kits	0	0	0	200	0	200
Jerry Cans	0	0	0	200	0	200
Gas Cylinders	0	0	0	200	0	200
Water Coolers	0	0	0	200	0	200
Search Lights	0	0	0	200	0	200
Mattress	0	0	0	400	0	400
Generators	0	5	1	0	0	6

Source: National Disaster Management Authority

Table B-25: Earthquake 2019 North Westren Kashmir (30 December 2019)

a.   Damages / Losses

Category	Quantity
Injured	7
House Pakka Partilly Damage	6
House Kachha Fully Damage	71
House Kachha Partilly Damage	1003
Cattle Shed Damage	375
Livestock	45

Source: National Disaster Management Authority

b.   Relief Provided During Earthquake (30 December 2019) by GBDMA

Items	Quantity
Tents	2,377
CGI Sheets	2442
Blankets	1355
Tarpaulins Sheets	776
Plastic Mats	978
Hygiene Kits	259
Water Cane	1184
Solar Lamps	174
Shelter Tool Kit	171
Wood Burning Stove	259
Food Pack	195
Wheat Flour 20 Kgs / bag	100
Mineral Water	1000 ltrs
Pipe of Various Size for restoration of water supply	2300 feet
Kitchen sets	259
Rice	32 Bags
Ghee	100 tin
Daal	16 Bags
Suger	16 Bags
Quilt (Carton)	20
Cloths	9 Bags
Jackets	156

Source: National Disaster Management Authority

Table B-26: Financial Assistance Provided during Earthquake -30 December 2019 by GBDA

Category	Quantity	Compensation Rate	Total
Injured	7	150,000	1,050,000
House Pakka Partilly Damage	6	50,000	300,000
House Kachha Fully Damage	71	60,000	4,260,000
House Kachha Partilly Damage	1003	30,000	30,090,000
Cattle Shed Fully Damage	50	30,000	1,500,000
Cattle Shed Damage	325	15,000	4,875,000
Livestock (Cow)	5	20,000	100,000
Livestock (Goat)	40	10,000	400,000

Source: National Disaster Management Authorities

Responses to Environmental Impacts

This Section presents a sort of empirical information regarding climate in Pakistan i.e. temperature, rainfall, clouds, wind pressure and related phenomena. It may be kept in view that secular climatic changes unfurl in long intervals of time. So the studies to size up the normal's of say, temperature, air pressure, rainfall and other climatic variables are recorded. The metrological office utilizes these data to issue daily weather forecast. This publication also contains the certain tables on the quality of groundwater in some selected Centres in the four provinces of Pakistan and Gilgit Baltastan (GB). This chapter also cover the information in respect of Forest Area, Share of Forestry in value added of Agriculture Sector.

The following paragraphs provide a generalized scenario regarding climate, temperature, rainfall and air pressure.

C-I   Climate

The following factors characterize the climate of Pakistan:-

1.   The major area of the country is dominated by dry climate while small areas in south experience tropical climate.

2.   The subtropical location of Pakistan extends approximately from 23 $1/2^0$ N to 37^0 N latitudes. This tends to keep the temperature high, particularly in summer.

3.   The oceanic influence of the Arabian Sea keeps down the temperature contrast between summer and winter at the coasts.

4.   The continental effect emphasis the differences in temperature between summer and winter in the interior of the country.

5.   The higher altitudes in the west and north keep down the temperature throughout the year. In the extreme north because of great heights, the mountain tops record freezing temperature all the year round. The hills and mountains also attract more rain than the plains do.

6.   The monsoon winds which come in July and continue to blow upto September bring rainfall. Pakistan receives only the tail-end of the monsoons, therefore the monsoon season is neither as prolonged nor as wet as that in India generally.

7.   The Western Depressions originating from the Mediterranean region and entering Pakistan from the west bring rainfall alongwith cyclones in winter. These cyclones make a long land journey before coming to Pakistan and are thus robbed of most of their moisture by the time they reach Pakistan.

8.   Thunderstorms cause some amount of rainfall particularly in the north.

9.   A temperature inversion layer at a low elevation of approximately 1,500 meters (5,000 feet) in the southern part of Pakistan during the summer season does not allow the moisture-laden air to rise and condensation to take place. (Khan, 1991).

C-II   Temperature

Pakistan has all the four seasons and the temperature varies from one season to another as well as from region to region. The temperature variation can be arranged in the following categories:

Hot: 32^0 C or more   (90^0 F or more)

Warm: 21^0 C to 32^0 C   (70^0 F to 89^0 F)

Mild: 10^0 C to 21^0 C   (50^0 F to 69^0 F)

Cold: 0^0 C to 10^0 C   (32^0 F to 49^0 F)

Cold below: 0^0 C   (32^0 F)

The country can be divided into the following temperature zones:-

1.   **Hot summer and mild winter**:   The temperature varies between 32^0 C to 44^0 or more in summer while 10^0 C to 21^0 C in winter.

2.   **Warmer summer and mild winter:**   Summer temperature lies between 21^0 C and 32^0 C, and winter's between 10^0 C and 21^0 C.

3. **Warm summer and cool winter:**   Summer between 21^0 C and 32 ^{0} C and coolest month temperature   between 0^0 C   and 10^0 C.

4. **Mild summer and cool/cold winter:**   Summer temperature between 10^0 C and 21 ^{0} C and the coolest month (January) temperature less than 0^0 C in some areas and between 0^0 C and 10^0 C in other areas.

Data on temperature (minimum & maximum) and rainfall are recorded at selected station daily by the metrological observators. The metrological observers also record other meterological elements like air pressure, temperature, hummidity etc. Marginal variations of temperature can be review in the country from one year to another as depicted by Table C-02.

C-III   Rain Fall

The major part of Pakistan experiences dry climate. Humid conditions prevail in a small area in the north. The whole of Sindh, most part of Balochistan and major part of Punjab, south of Sahiwal and the central part of northern areas receive less than 250 mm/10 inches of rainfall in a year. Three large areas i.e. i) Northern Sindh and Southern Punjab ii) North Western Balochistan and iii) the central part of the Northern areas have to content with an annual rainfall of less than 125 mm. To the North of Sahiwal rain fall steadily increases and aridity starts to diminish. However, the true humid condition appear after rain fall increase to 750 mm/30 inches on the plains and 625 mm/25 inches on the highlands.

There are two sources of rainfall in Pakistan, the Monsoons and the Western Depressions. The monsoons rainfall takes place from July to September. The Western Depressions bring rainfall primarily from December to March. In the intervening periods October-November and April-June a small quantity of rainfall comes form thunderstorms (Kureshi, 1991).

C-IV   Pressure and Winds

In summer, the land becomes heated and a low-pressure area is created in southwestern Pakistan. In the month of July, atmospheric pressure is lowest in the vicinity of Multan and rises north-ward and southward. This low-pressure area attracts winds from the Indian Ocean. Some colonic storms migrate to this low area all the way across northern Indian Ocean from the Bay of Bengal, although their moisture content decreases as they move westward, it is these storms, which bring most of Pakistan's rainfall. Winds sucked in from the Arabian Sea bring less moisture because these air streams have originated over Arabia, and have lower moisture content. Nevertheless, they do produce some rain in the western mountains.

In winter, the temperatures over the land are relatively low and high pressures areas are established particularly in the month of December and January. The pressure generally decreases from North to South. Thus, while the prevailing direction of the winter monsoons over the sub-continent as a whole is north-east to south-west, over Pakistan it is almost from north to south.   Since these winds blow from the land towards the sea, they are generally dry. (Kureshi, 1991). Certain observations are summarised below, after review/analyses the air pressure and vapour pressure data in Table C-04 & Table-C-05.

- A lowest air pressure (824.7 mbs) at mean station level was recorded in 2011 at Parachinar, which is the lowest air pressure among 15 selected Centres (Table C-04).

- A highest air pressure (1008.2 mbs) at mean station level was recorded in 2019 at Chhor, which is the highest air pressure among 15 selected Centres (Table C-04).

- A lowest vapour pressure (5.6 mbs) was recorded in 2000 at Quetta, which is the lowest vapour pressure among 15 selected Centres (Table C-05).

- A highest vapour pressure (25.0 mbs) was recorded in 2001 at Chhor, which is the highest vapour pressure among 15 selected Centres (Table C-05).

Table C-01: Sunshine Hours at Selected Centres (Percentage of Long Term average)

Year	Karachi (Airport)(22)	Lahore (213)	Peshawar (359)	Quetta (1600)	Jacobabad (55)
1997	58.0	----	----	----	----
1998	66.1	65.5	66.9	----	----
1999	64.8	67.6	63.0	74.6	76.8
2000	64.2	65.6	61.2	77.2	76.1
2001	66.1	67.1	65.4	75.2	67.5
2002	----	66.8	61.1	72.8	61.8
2003	----	64.6	62.5	----	66.7
2004	----	66.3	62.8	----	64.4
2005	----	65.3	59.8	----	70.3
2006	----	64.1	----	----	63.1
2007	64.2	65.1	----	----	70.7
2008	58.2	----	----	78.2	65.7
2009	61.2	65.1	----	79.6	69.8
2010	----	64.3	----	----	----
2011	56.8	65.3	----	76.1	----
2012	52.6	66.4	----	----	----
2013	54.8	57.0	----	----	----
2014	56.3	56.4	----	----	----
2015	58.1	55.0	----	----	----
2016	53.8	53.6	----	----	----
2017	56.8	52.8	----	----	----
2018	----	55.9	----	----	----
2019	----	----	----	----	----

Source: Pakistan Metrological Department
----: Data Not Available

Table C-02: Temperature at Selected Centres (Mean of Maximum)

Year/ Stations	Karachi (Airport)(21)	Nawabshah (37)	Hyderabad (40)	Jacobabad (55)	Lahore (213)	Multan (122)	Islamabad (507)	Jhelum (232)	Sargodha (187)
1997	31.3	34.4	32.8	32.6	28.6	30.9	27.1	28.8	29.5
1998	32.7	36.0	34.2	34.5	30.6	32.7	28.9	30.6	31.6
1999	32.3	36.0	34.1	34.6	31.2	33.2	29.8	31.4	32.8
2000	32.3	36.7	34.4	35.2	30.9	33.3	29.8	31.2	32.2
2001	32.6	36.8	34.6	35.1	30.7	32.8	30.2	31.6	31.8
2002	32.2	37.4	35.0	35.2	31.1	33.5	30.1	31.8	32.3
2003	32.8	36.0	34.0	34.3	29.9	32.7	28.8	30.2	31.1
2004	32.8	37.1	35.0	35.0	30.8	33.1	29.5	31.4	32.3
2005	32.1	35.7	33.9	33.5	29.9	31.7	28.3	30.3	30.7
2006	32.3	36.4	34.1	34.5	30.6	32.9	29.3	30.9	31.7
2007	32.9	36.0	34.3	34.2	30.5	32.5	29.1	30.5	31.5
2008	32.0	35.8	33.7	34.0	30.2	32.0	28.7	30.2	31.3
2009	32.9	36.2	34.3	34.3	31.1	32.8	29.5	31.4	32.2
2010	33.0	36.6	34.7	----	30.8	32.9	29.8	31.5	31.7
2011	32.4	----	33.6	33.6	29.9	32.2	28.9	30.8	31.2
2012	32.0	35.3	33.9	33.5	30.3	32.1	29.2	31.2	31.0
2013	32.4	35.6	33.9	33.7	30.0	32.0	28.8	30.7	30.8
2014	32.7	35.8	33.8	34.0	29.8	31.4	28.3	30.0	29.9
2015	32.9	35.7	33.8	33.1	29.8	31.4	28.2	29.9	29.9
2016	33.0	36.8	34.5	35.0	31.2	32.8	30.1	31.5	31.1
2017	32.8	36.3	34.1	34.7	30.9	32.1	29.5	31.1	30.8
2018	33.4	36.9	35.1	34.1	31.1	32.4	29.6	31.5	31.2
2019	32.2	35.0	33.9	33.7	29.6	30.1	----	29.6	----

Table C-02: Temperature at Selected Centres (Mean of Maximum)

(Centigrades)

Year/ Stations	Faisalabad (183)	Bahawalpur (116)	Peshawar (359)	D.i.Khan (173)	Quetta (1600)	Zhob (1405)	Dalbandin (848)	Khuzdar (1231)	Panjgur (980)
1997	29.3	31.6	28.8	30.3	24.1	26.7	31.0	27.8	29.0
1998	31.1	33.1	30.1	32.0	26.0	----	32.7	29.8	30.6
1999	31.9	33.7	31.2	32.3	25.8	----	32.3	30.1	30.8
2000	31.9	33.7	30.0	32.5	26.2	27.9	32.9	----	31.3
2001	31.3	33.7	30.2	32.2	26.4	28.0	33.3	----	31.4
2002	32.0	34.5	29.6	32.7	25.9	27.6	33.4	30.1	31.3
2003	31.0	33.5	29.1	31.6	25.2	26.8	32.8	29.1	30.3
2004	31.8	34.2	30.2	32.4	26.3	28.5	33.7	30.1	31.4
2005	30.6	32.7	28.7	30.7	24.5	26.1	----	----	30.3
2006	31.5	33.5	29.7	31.8	26.3	27.3	33.8	29.1	31.3
2007	31.5	33.0	29.6	31.4	25.1	26.9	32.8	28.4	29.9
2008	30.9	32.4	29.2	31.4	25.8	27.0	33.1	28.9	30.6
2009	31.7	33.1	29.8	31.9	25.4	26.9	33.0	28.9	31.0
2010	31.6	33.4	30.0	31.6	26.0	27.6	33.7	29.6	31.4
2011	30.7	32.7	29.5	31.2	25.2	27.0	33.0	28.8	31.4
2012	30.9	32.3	28.9	31.0	24.1	25.8	32.5	29.3	30.6
2013	31.1	32.8	28.9	31.5	25.0	26.9	33.3	29.3	31.0
2014	30.4	32.1	28.8	31.2	24.8	26.7	32.6	29.0	29.7
2015	30.3	31.7	28.7	31.1	25.6	26.8	33.2	29.7	30.9
2016	31.7	33.6	30.2	32.5	26.5	28.1	----	----	30.7
2017	31.3	33.0	29.6	32.7	25.1	27.4	33.4	30.4	31.7
2018	31.7	33.1	29.5	33.1	25.7	27.6	33.3	30.3	32.1
2019	29.5	30.5	----	30.4	----	23.4	29.6	26.8	28.4

Table C-02: Temperature at Selected Centres (Mean of Minimum)

(Centigrades)

Year/ Stations	Karachi (Airport)(21)	Nawabshah (37)	Hyderabad (40)	Jacobabad (55)	Lahore (213)	Multan (122)	Islamabad (507)	Jhelum (232)	Sargodha (187)
1997	21.1	----	20.9	19.9	18.6	17.8	14.3	16.7	17.3
1998	21.9	18.4	21.7	20.5	19.3	18.6	14.8	17.1	17.7
1999	21.9	18.0	21.6	20.5	19.7	18.9	15.5	17.8	18.4
2000	21.9	17.9	21.1	19.9	19.4	18.6	15.5	17.4	18.1
2001	22.2	18.6	20.8	20.2	19.5	18.8	15.4	16.9	18.0
2002	21.4	18.7	21.1	20.6	20.1	19.0	15.5	17.8	18.1
2003	21.2	18.0	20.9	20.6	19.5	18.5	14.9	17.5	18.0
2004	21.9	18.7	21.3	21.0	20.3	19.1	15.4	17.8	18.6
2005	21.8	17.9	20.7	20.5	19.4	18.1	14.6	17.1	17.5
2006	22.5	18.9	21.0	21.6	20.3	19.6	16.0	18.4	18.8
2007	22.2	17.4	21.4	21.3	19.8	19.0	15.1	17.1	18.0
2008	21.6	16.1	21.2	20.9	19.8	18.8	15.6	17.2	17.8
2009	22.3	19.0	21.7	21.0	20.0	18.9	15.6	17.3	17.9
2010	21.9	18.3	21.4	----	20.1	19.4	16.2	17.3	18.5
2011	21.7	----	20.7	20.8	19.5	19.3	15.9	17.0	18.2
2012	21.5	18.8	20.0	20.2	18.4	18.7	15.7	16.5	17.7
2013	21.9	19.5	20.7	20.8	17.9	19.7	16.2	17.0	18.3
2014	21.7	19.0	20.6	19.1	17.9	19.0	15.6	16.4	17.3
2015	22.4	19.4	20.9	19.5	18.8	19.3	16.0	16.9	17.5
2016	22.5	19.6	20.8	20.9	19.0	20.4	16.8	17.2	18.0
2017	22.2	19.4	20.6	20.4	19.2	19.9	16.7	17.2	17.7
2018	22.2	19.6	20.7	21.4	19.5	19.7	16.3	17.0	17.6
2019	21.2	18.2	18.8	19.2	17.7	17.5	----	15.3	----

Contd**..**

Table C-02: Temperature at Selected Centres (Mean of Minimum)

<div align="right">(Centigrade)</div>

Year/ Stations	Faisalabad (183)	Bahawalpur (116)	Peshawar (359)	D.i. Khan (173)	Quetta (1600)	Zhob (1405)	Dalbandin (848)	Khuzdar (1231)	Panjgur (980)
1997	16.6	17.7	15.5	15.6	8.7	11.0	14.3	10.9	14.4
1998	17.3	18.2	15.9	16.0	8.4	13.2	15.6	----	15.4
1999	18.0	18.0	16.8	18.0	9.4	13.7	15.4	----	15.6
2000	17.6	18.7	17.1	18.1	8.3	13.4	12.4	16.0	15.7
2001	17.7	18.0	17.3	18.3	8.9	12.7	----	16.0	15.9
2002	18.0	19.0	17.5	17.2	9.1	----	----	16.1	15.8
2003	17.7	18.3	16.7	15.9	8.9	----	----	----	15.9
2004	18.1	19.5	17.3	17.2	9.3	12.0	----	16.5	16.1
2005	17.0	18.4	16.3	16.5	8.8	10.9	----	15.4	14.6
2006	18.5	19.7	17.7	16.8	10.9	10.5	----	15.5	15.6
2007	17.3	19.4	16.9	16.8	8.6	9.8	14.2	15.4	15.3
2008	17.1	18.7	16.6	17.4	8.5	8.7	----	15.8	15.1
2009	17.0	18.6	16.9	17.2	9.4	12.6	15.3	14.8	16.0
2010	17.5	17.8	17.1	17.6	9.5	12.9	14.1	15.6	15.6
2011	17.6	19.1	17.1	17.5	9.7	13.0	14.8	15.5	16.1
2012	17.3	18.4	16.5	16.4	8.4	12.0	13.0	14.8	14.1
2013	18.2	19.3	17.2	16.9	9.7	12.9	14.2	14.7	15.7
2014	17.5	18.8	16.5	15.8	9.2	12.5	13.9	15.2	15.4
2015	18.1	18.7	16.5	15.9	10.0	12.0	13.9	17.0	15.3
2016	18.9	19.6	17.7	17.8	10.5	13.0	----	----	15.1
2017	18.5	18.9	17.4	18.0	9.9	12.8	12.6	15.5	15.6
2018	18.4	19.1	----	18.2	10.5	13.7	14.7	16.7	16.0
2019	16.2	16.8	----	15.3	----	10.3	12.4	13.6	14.3

Source: Pakistan Metrological Department
----: Data Not Available

Figure:1 Mean Monthly Maximum/Minimum Temperature (°C) Islamabad (SRC)

Maximum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	33	18.6	20.3	22.5	28.5	34.6	36.2	33.6	33.4	28.7	23.6	19.8	27.7
2016	35.3	17.7	22	24.1	30.2	37.2	38.7	34.1	34.4	32.4	25.9	23.6	29.6
2017	34.5	16.4	21.8	24.6	31.6	35.9	36	33.6	33.5	32.1	24	20.4	28.7
2018	34.8	20.3	21.7	26.8	30.9	34.2	37.7	33.5	32.8	28.7	23.5	18.9	28.7

Minimum Temperature

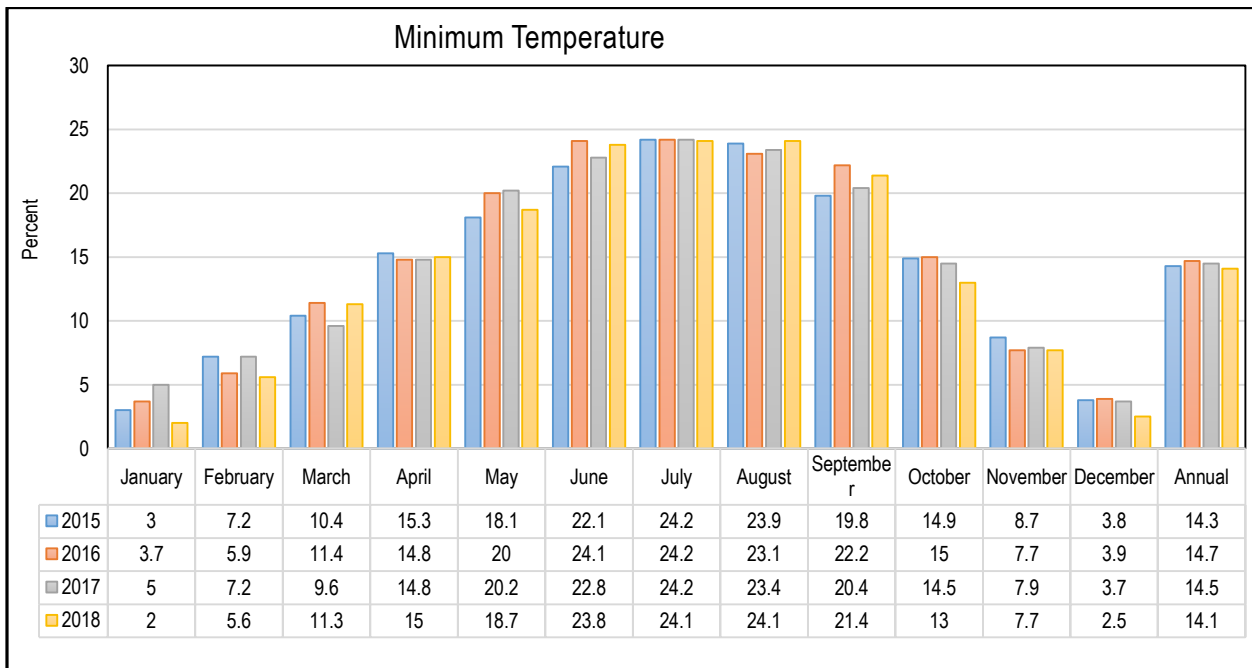|	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	3	7.2	10.4	15.3	18.1	22.1	24.2	23.9	19.8	14.9	8.7	3.8	14.3
2016	3.7	5.9	11.4	14.8	20	24.1	24.2	23.1	22.2	15	7.7	3.9	14.7
2017	5	7.2	9.6	14.8	20.2	22.8	24.2	23.4	20.4	14.5	7.9	3.7	14.5
2018	2	5.6	11.3	15	18.7	23.8	24.1	24.1	21.4	13	7.7	2.5	14.1

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Figure:2 Mean Monthly Maximum/Minimum Temperature (ºC) Lahore (PBO)

Maximum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	34.2	16.6	22.6	25.1	32.7	39.1	38.1	34.6	34.5	32	26.6	21.8	29.8
2016	35.8	17.6	23.6	28	35.6	40.2	39.6	34.1	35.1	33.8	27.7	23.1	31.2
2017	35.6	18.4	24.4	28	36.5	39	36.9	35.4	35	34.2	24.5	22.7	30.9
2018	34.5	20.7	24.3	30.1	35.3	39.3	38.4	35.9	34.7	32.1	26.8	21.4	31.1

Minimum Temperature

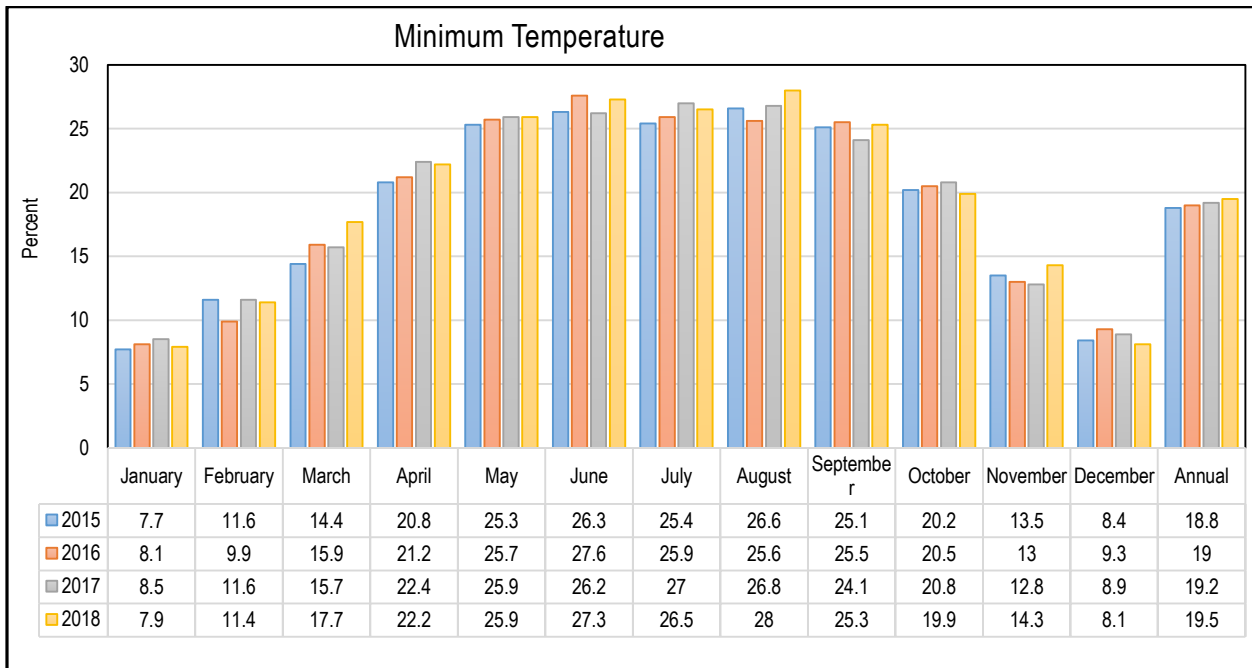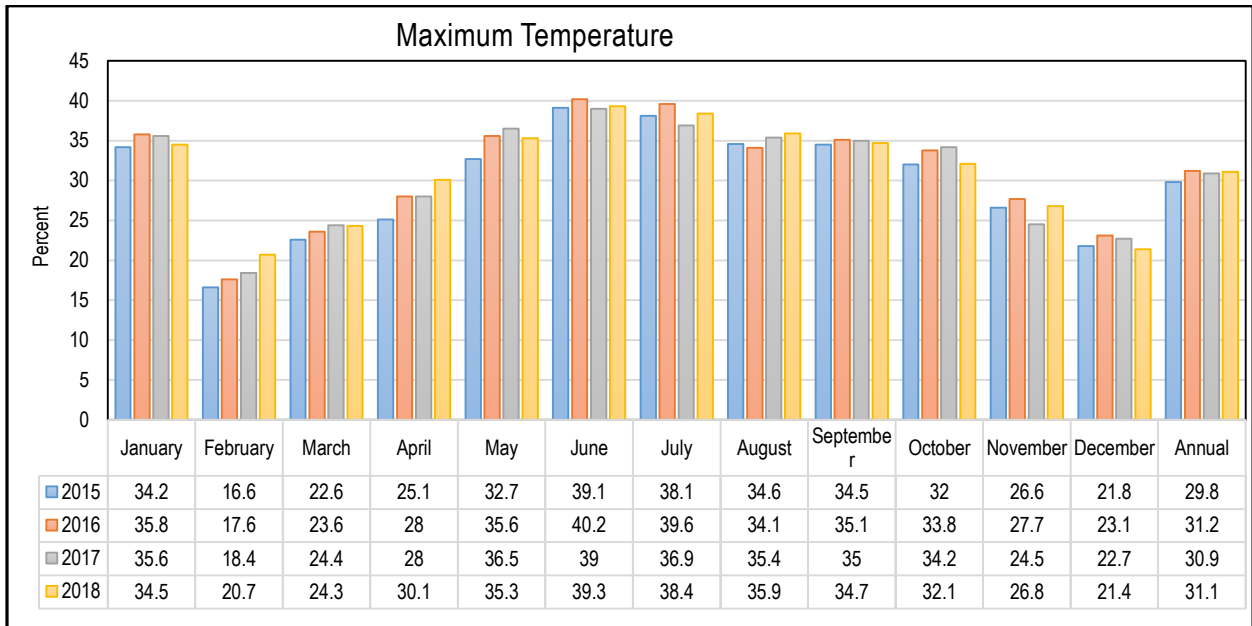|	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	7.7	11.6	14.4	20.8	25.3	26.3	25.4	26.6	25.1	20.2	13.5	8.4	18.8
2016	8.1	9.9	15.9	21.2	25.7	27.6	25.9	25.6	25.5	20.5	13	9.3	19
2017	8.5	11.6	15.7	22.4	25.9	26.2	27	26.8	24.1	20.8	12.8	8.9	19.2
2018	7.9	11.4	17.7	22.2	25.9	27.3	26.5	28	25.3	19.9	14.3	8.1	19.5

Figure:3 Mean Monthly Maximum/Minimum Temperature (ᵒC) Karachi (Airport)

Maximum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	26.3	28.9	31.5	35.9	36	37.7	34.1	32.3	34.6	35.8	33	28.6	32.9
2016	27.8	30.3	33.3	34.7	35.7	36.1	33.6	33	32.9	34	33.3	31	33
2017	25.4	30.2	32.8	35.5	36.2	36.3	33.1	33.8	33.4	36.6	32.3	28.2	32.8
2018	28.5	30.4	34.4	36.2	38.7	35.4	33.8	31.9	32.6	36.8	33.8	28.2	33.4

Minimum Temperature

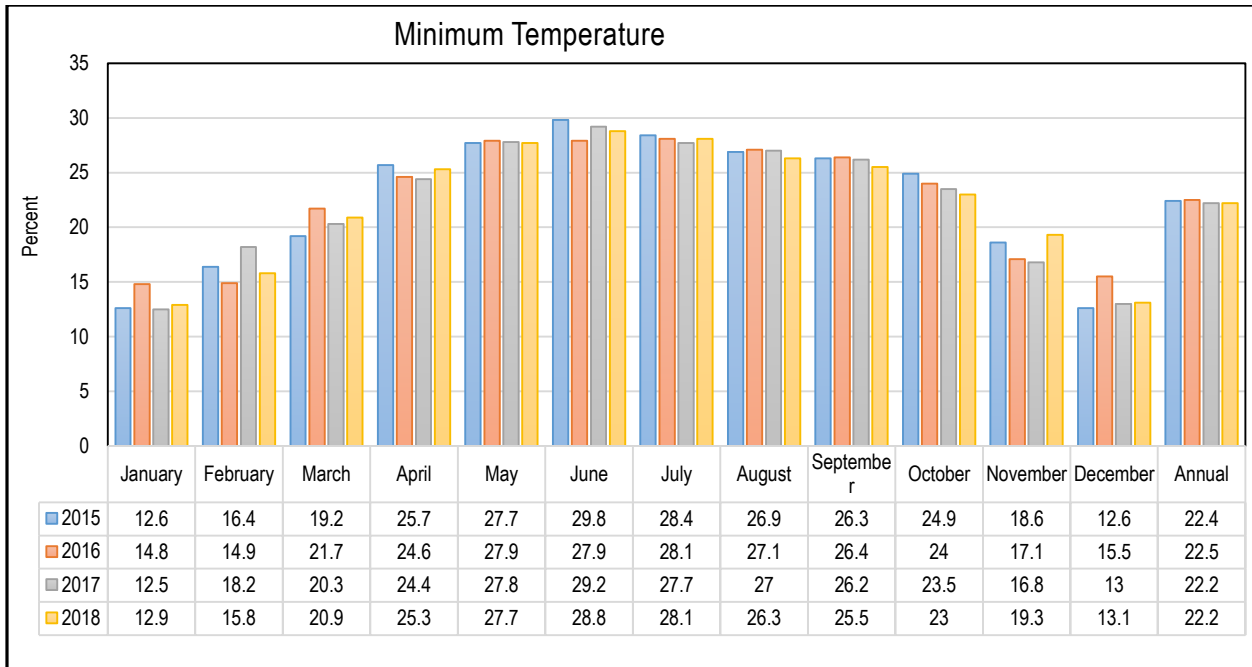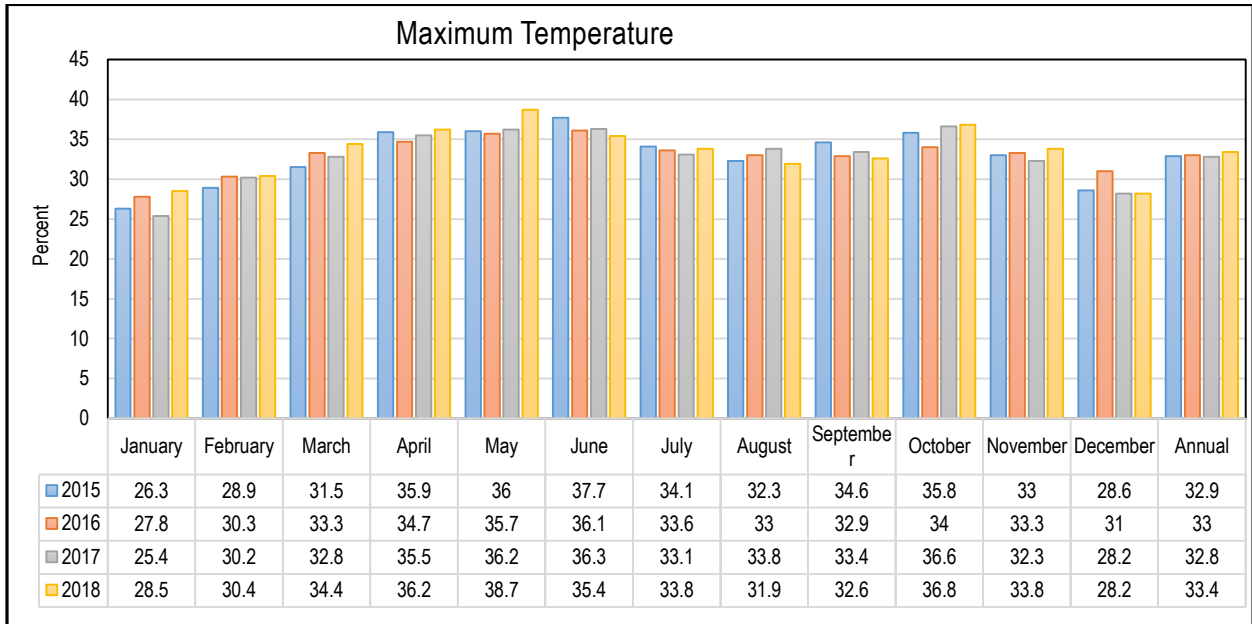|	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	12.6	16.4	19.2	25.7	27.7	29.8	28.4	26.9	26.3	24.9	18.6	12.6	22.4
2016	14.8	14.9	21.7	24.6	27.9	27.9	28.1	27.1	26.4	24	17.1	15.5	22.5
2017	12.5	18.2	20.3	24.4	27.8	29.2	27.7	27	26.2	23.5	16.8	13	22.2
2018	12.9	15.8	20.9	25.3	27.7	28.8	28.1	26.3	25.5	23	19.3	13.1	22.2

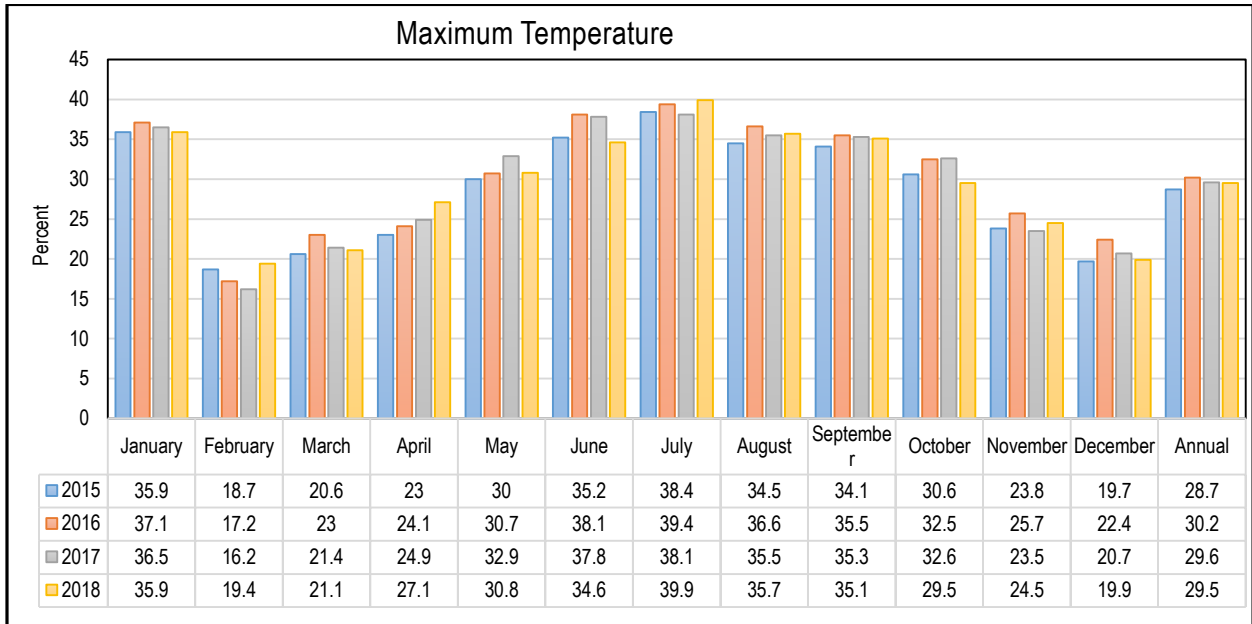**Figure:4 Mean Monthly Maximum/Minimum Temperature (ºC) Peshawar (Airport)**

Maximum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	35.9	18.7	20.6	23	30	35.2	38.4	34.5	34.1	30.6	23.8	19.7	28.7
2016	37.1	17.2	23	24.1	30.7	38.1	39.4	36.6	35.5	32.5	25.7	22.4	30.2
2017	36.5	16.2	21.4	24.9	32.9	37.8	38.1	35.5	35.3	32.6	23.5	20.7	29.6
2018	35.9	19.4	21.1	27.1	30.8	34.6	39.9	35.7	35.1	29.5	24.5	19.9	29.5

Minimum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	5.1	8.9	11.9	17.3	21.8	24.9	26	24.5	21.9	17.7	11.3	6.3	16.5
2016	6.2	8.4	13.4	17.1	24	26.9	27.2	25.5	24.6	19.3	12.1	7.8	17.7
2017	6.6	9	12.3	18.3	24.3	26.1	26.6	25.7	23	18.9	11.3	6.9	17.4
2018	5.4	9.5	14.3	18.4	21.6	26.5	26.1	26.8	23.5	16.5	11.1	5.2	17.1

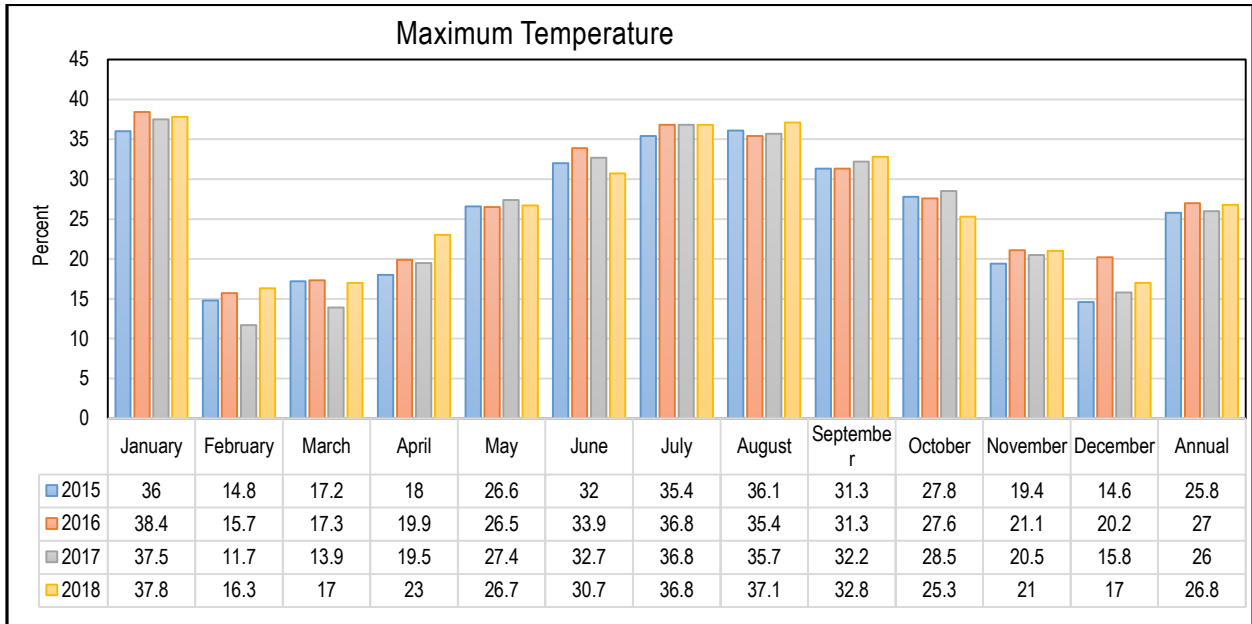**Figure:5 Mean Monthly Maximum/Minimum Temperature (ºC) Quetta (S. MANDA)**

Maximum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	36	14.8	17.2	18	26.6	32	35.4	36.1	31.3	27.8	19.4	14.6	25.8
2016	38.4	15.7	17.3	19.9	26.5	33.9	36.8	35.4	31.3	27.6	21.1	20.2	27
2017	37.5	11.7	13.9	19.5	27.4	32.7	36.8	35.7	32.2	28.5	20.5	15.8	26
2018	37.8	16.3	17	23	26.7	30.7	36.8	37.1	32.8	25.3	21	17	26.8

Minimum Temperature

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
2015	-0.6	3.5	6	11.2	15	20.1	22	19	12.5	9.4	5	-1.5	10.1
2016	0.5	-0.5	7.5	10.1	15.6	20.8	22.5	18.5	12.5	7	1.4	0.7	9.7
2017	-0.6	1.9	5.7	8.9	13.7	18.8	19.7	16	12.7	5.6	1.6	-4.4	8.3
2018	-4.5	-0.2	5.7	10.3	13.2	18.4	21.1	19	11.9	6.1	2.9	-3	8.4

Table C-03: Rainfall at Selected Centres

(Milimeter)

Year/ Stations	Karachi (Airport)(21)	Nawabshah (37)	Hyderabad (40)	Jacobabad (55)	Lahore (213)	Multan (122)	Islamabad (507)	Jhelum (232)	Sargodha (187)
1997	150.1	107.3	57.0	272.1	1232.5	264.2	1413.8	1335.7	628.9
1998	82.4	60.9	49.3	39.3	492.6	135.6	1297.6	961.4	411.3
1999	14.5	20.5	79.4	89.3	473.7	177.2	1006.3	628.3	373.4
2000	46.9	46.0	55.0	19.0	557.3	83.0	999.1	840.4	452.1
2001	100.4	56.5	171.3	17.8	535.7	297.9	1177.7	746.7	611.5
2002	55.8	4.0	9.0	17.1	333.7	101.4	930.5	532.6	529.8
2003	324.9	339.9	405.6	210.0	627.5	159.8	1247.0	961.5	423.9
2004	65.9	30.0	129.5	49.6	495.2	189.8	1026.3	858.9	362.0
2005	97.2	57.9	52.4	61.8	652.2	300.5	979.0	662.2	645.0
2006	301.1	293.6	524.9	94.2	750.8	144.7	1598.0	1232.9	481.0
2007	465.6	243.4	241.9	183.0	660.3	262.0	1796.0	832.7	718.0
2008	121.6	109.1	156.6	187.7	614.0	247.5	1388.0	826.2	591.0
2009	279.9	106.8	202.2	42.8	372.2	119.2	607.0	542.2	266.0
2010	372.9	342.6	214.1	----	540.7	287.0	1088.0	791.3	523.0
2011	290.2	----	71.4	293.3	856.9	186.0	1254.0	748.3	733.0
2012	152.1	182.2	121.0	485.8	582.9	239.0	1029.5	717.4	370.0
2013	168.9	105.5	108.9	345.3	902.8	225.7	1900.0	924.4	424.0
2014	30.7	66.7	24.2	21.3	785.9	257.5	1667.0	939.3	579.0
2015	53.2	115.3	131.2	155.5	857.2	394.6	1779.0	1018.6	647.0
2016	167.7	143.0	165.8	46.0	806.5	196.5	922.0	890.1	750.0
2017	232.2	98.5	121.8	79.0	628.1	237.9	965.1	998.4	505.9
2018	0.8	6.0	8.8	20.2	610.6	59.6	1213.0	715.4	534.0
2019	43.2	48.9	20.2	136.0	235.2	145.5	----	334.0	----

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Table C-03: Rainfall at Selected Centres

<div align="right">(Milimeter)</div>

Year/ Stations	Faisalabad (183)	Bahawalpur (116)	Peshawar (359)	D.i.Khan (173)	Quetta (1600)	Zhob (1405)	Dalbandin (848)	Khuzdar (1231)	Panjgur (980)
1997	806.7	304.2	443.6	277.8	309.0	495.0	121.3	357.0	304.3
1998	332.1	159.4	572.6	253.0	187.0	252.5	74.8	220.5	81.5
1999	187.9	120.6	417.8	182.0	106.0	199.8	74.9	170.0	63.5
2000	212.1	79.3	258.8	256.3	164.5	163.4	3.5	133.2	21.5
2001	371.9	182.4	263.1	327.0	93.5	117.7	32.3	165.3	33.8
2002	274.1	41.9	388.0	148.3	179.3	276.6	7.0	52.3	43.1
2003	379.2	184.6	904.5	249.2	249.5	243.3	173.9	198.9	38.0
2004	376.6	146.8	454.0	304.6	121.8	184.9	86.2	92.3	74.0
2005	518.2	197.3	625.0	497.0	310.5	359.8	----	383.1	165.9
2006	444.4	167.7	497.5	213.2	206.5	303.6	67.1	268.6	123.0
2007	351.7	227.6	685.0	416.4	297.0	357.4	153.8	274.3	162.9
2008	656.8	220.5	779.0	486.1	134.5	304.7	82.7	302.2	75.5
2009	376.9	146.8	623.0	282.1	289.0	269.5	62.4	217.1	59.5
2010	544.7	175.5	839.0	756.3	133.0	301.8	20.0	159.2	53.5
2011	544.9	164.2	568.0	283.3	459.0	109.6	69.3	370.0	139.0
2012	361.3	184.9	461.5	450.1	313.0	262.6	24.1	233.1	64.0
2013	378.1	148.6	596.0	327.4	286.5	220.9	83.4	481.2	124.6
2014	480.7	67.9	360.4	276.9	180.0	191.0	27.0	160.1	74.0
2015	518.5	511.3	825.5	497.4	212.0	368.1	68.5	157.6	61.0
2016	429.8	112.2	360.5	455.4	159.0	120.0	----	176.2	57.0
2017	327.6	143.9	503.0	228.0	192.5	194.7	41.8	228.5	39.0
2018	351.5	103.0	511.9	123.4	122.0	181.0	16.9	110.9	9.0
2019	225.2	124.4	----	226.9	----	208.0	141.2	200.4	47.0

Source: Pakistan Metrological Department

----: Data Not Available,

Table C-04: Air Pressure at Selected Centres

Year/ station	Karachi (Airport)		Hyderabad		Jacobabad	
	Mean Station Level Pressure (Mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)
1997	1006.7	1009.4	1003.1	1008.0	1001.6	1008.0
1998	1006.0	1008.6	1002.1	1007.0	1000.9	1007.3
1999	1005.6	1008.0	1001.5	1006.3	999.9	1006.2
2000	1005.0	1007.7	1001.3	1006.2	999.4	1005.7
2001	1005.4	1007.7	1001.8	1006.7	999.7	1006.4
2002	1006.0	1008.7	1002.2	1007.1	1000.4	1006.7
2003	1006.0	1008.7	1002.3	1007.2	1000.9	1007.2
2004	1005.8	1008.5	1002.4	1007.0	1000.4	1006.7
2005	1006.0	1008.7	1002.5	1007.4	1001.0	1007.3
2006	1005.7	1008.4	1002.0	1006.8	1000.5	1006.7
2007	1005.3	1008.0	1002.0	1006.9	1000.7	1006.7
2008	1005.4	1008.1	1002.0	1006.9	1000.1	1006.4
2009	1005.6	1008.4	1002.2	1005.8	1000.6	1006.9
2010	1005.1	1007.7	1001.7	1006.6	----	----
2011	1004.9	1007.6	1001.3	1006.2	----	----
2012	1005.3	1008.0	1001.5	1006.4	1000.4	1006.6
2013	1005.4	1008.1	1001.8	1006.8	1000.8	1006.8
2014	1006.5	1008.9	1002.8	1007.7	1001.2	1007.5
2015	1006.4	1009.1	1003.2	1008.1	1001.6	1008.0
2016	1005.8	1008.5	1002.3	1007.2	1000.6	1006.9
2017	1005.7	1008.4	1002.3	1007.2	1001.4	1007.3
2018	1005.4	1008.1	1001.9	1006.7	1000.4	1006.7
2019	1007.2	1010.0	1004.1	1009.0	1002.6	1008.9

Contd**..**

Table C-04: Air Pressure at Selected Centres

Year/ Station	Dalbandin		Jiwani		Panjgur	
	Mean Station Level Pressure (Mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)
1997	915.0	1482.3	1002.6	1008.9	902.7	1496.9
1998	915.4	1492.7	1002.0	1008.3	903.0	1501.9
1999	914.6	1486.3	1001.4	1007.8	900.3	1477.9
2000	914.2	1477.7	1000.9	1007.3	899.9	1472.8
2001	914.6	1484.0	1001.3	1007.8	898.4	1477.7
2002	915.1	1486.9	1002.0	1008.4	900.7	1479.7
2003	915.4	1485.5	1002.1	1008.5	900.9	1481.4
2004	915.0	1488.1	1001.7	1008.1	901.1	1485.4
2005	----	----	1001.8	1008.2	900.4	1480.0
2006	914.5	1483.2	1001.5	1007.9	900.2	1476.1
2007	914.7	1483.9	1001.3	1007.7	900.6	1477.0
2008	914.3	1477.9	1001.3	1007.7	900.2	1474.3
2009	914.4	1473.5	1001.2	1007.8	900.6	1480.4
2010	914.4	1480.6	1001.3	1007.6	900.6	1481.3
2011	914.1	1470.5	1000.8	1007.1	900.1	1474.6
2012	914.5	1477.1	1001.2	1007.5	900.4	1478.0
2013	914.5	1484.0	1001.5	1007.9	900.6	1478.4
2014	915.5	1486.0	1002.1	1008.5	900.5	1476.7
2015	916.1	1490.8	1002.3	1008.6	900.3	1475.7
2016	----	----	----	----	898.4	1470.4
2017	915.5	1486.1	1002.0	1008.5	900.2	1475.1
2018	914.9	1483.3	1001.9	1008.3	900.0	1474.6
2019	916.1	1488.7	1004.1	1010.6	902.2	1491.6

Contd**..**

Table C-04: Air Pressure at Selected Centres

Year station	Peshawar		Parachinar		Jhelum	
	Mean Station Level Pressure (Mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)
1997	967.9	1008.5	826.7	1488.9	981.9	1008.5
1998	967.9	1008.0	827.1	1491.2	981.2	1007.3
1999	966.4	1006.6	826.0	1481.6	979.8	1006.2
2000	965.9	1006.2	825.8	1477.4	979.6	1006.0
2001	966.4	1006.7	826.5	1483.9	980.4	1006.9
2002	966.9	1007.3	826.9	1488.5	980.6	1007.1
2003	967.4	1007.8	826.8	1485.0	981.1	1007.6
2004	967.7	1008.1	826.6	1486.3	980.7	1007.2
2005	968.2	1008.7	826.4	1485.3	981.2	1007.8
2006	968.0	1008.3	826.8	1488.8	980.0	1007.5
2007	967.6	1008.0	826.6	1489.7	980.8	1007.3
2008	967.2	1006.4	825.6	1476.8	980.7	1007.3
2009	967.9	1008.2	825.9	1481.2	981.0	1007.4
2010	967.4	1006.5	826.1	1486.3	980.7	1007.1
2011	966.9	1007.3	824.7	1468.4	980.4	1006.9
2012	967.2	1007.6	825.4	1477.7	980.4	1006.9
2013	967.2	1005.6	826.4	1489.4	980.9	1007.4
2014	968.4	1008.9	----	----	981.6	1008.3
2015	968.8	1009.4	----	----	982.1	1008.7
2016	967.8	1008.2	826.3	1485.8	980.8	1007.3
2017	967.8	1005.9	826.3	1484.4	981.0	1007.5
2018	----	----	825.8	1479.0	980.6	1007.1
2019	----	----	827.2	1496.1	982.6	1009.3

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Table C-04: Air Pressure at Selected Centres

Year station	D.I.Khan		Lahore		Quetta	
	Mean Station Level Pressure (Mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)
1997	988.7	1008.3	984.1	1008.5	838.5	1472.3
1998	987.8	1007.4	983.2	1007.6	839.0	1477.0
1999	986.6	1006.1	982.1	1006.4	838.4	1469.6
2000	986.4	1005.8	981.8	1006.0	838.0	1465.5
2001	987.1	1006.6	982.6	1006.8	838.5	1470.6
2002	987.4	1006.9	982.8	1007.0	838.7	1473.6
2003	987.7	1007.3	983.2	1007.5	838.8	1474.5
2004	987.4	1006.9	982.9	1007.1	840.8	1492.7
2005	988.0	1007.6	983.3	1007.6	840.6	1492.9
2006	987.7	1007.2	983.2	1007.5	841.4	1491.7
2007	987.4	1006.9	982.9	1007.2	840.5	1491.9
2008	987.2	1006.8	982.8	1007.1	840.3	1489.1
2009	987.7	1007.3	983.2	1007.4	840.7	1492.1
2010	987.4	1006.9	983.0	1007.2	840.7	1488.8
2011	987.1	1006.7	982.6	1006.9	840.1	1492.1
2012	987.5	1006.7	982.7	1007.0	840.2	1484.9
2013	987.4	1007.2	983.2	1007.6	840.6	1491.4
2014	986.9	1007.7	984.0	1008.4	841.0	1494.4
2015	988.5	1008.1	984.4	1008.7	842.4	1499.6
2016	987.3	1007.0	983.4	1007.7	841.3	1499.2
2017	987.4	1006.8	983.6	1007.9	841.4	1497.7
2018	987.1	1006.6	983.2	1007.5	841.0	1496.3
2019	989.6	1009.3	985.2	1009.6	----	----

Table C-04: Air Pressure at Selected Centres

Year station	Chhor		Zhob		Multan	
	Mean Station Level Pressure (Mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)	Mean Station Level Pressure (mbs)	Mean Sea Level Pressure (Hpa/gpm)
1997	1007.8	1008.5	856.3	1467.3	994.6	1008.7
1998	1006.7	1007.3	856.5	1468.8	993.8	1007.8
1999	1005.8	1006.4	855.6	1459.2	992.5	1006.5
2000	1005.6	1006.3	854.6	1454.6	992.1	1006.0
2001	1006.2	1006.8	855.6	1460.8	992.9	1006.9
2002	1006.7	1007.3	856.0	1461.0	993.2	1007.2
2003	1007.0	1007.7	856.1	1464.8	993.7	1007.7
2004	1006.7	1007.4	855.8	1463.3	993.5	1007.8
2005	1007.0	1007.6	856.0	1463.9	994.1	1008.2
2006	1006.5	1007.1	856.0	1464.5	993.8	1008.1
2007	1006.3	1006.9	855.9	1459.5	993.5	1007.7
2008	1006.3	1006.9	855.6	1460.4	993.4	1007.6
2009	1006.4	1007.0	855.0	1469.1	993.7	1007.9
2010	1005.8	1006.4	856.1	1466.1	993.2	1007.4
2011	1006.0	1006.6	855.3	1457.9	992.8	1007.1
2012	1006.3	1006.9	----	----	992.9	1007.2
2013	1006.5	1007.2	----	----	993.2	1007.4
2014	1007.3	1008.0	----	----	994.2	1008.5
2015	1007.5	1008.1	----	----	994.5	1008.7
2016	1006.8	1007.5	490.1	837.5	993.4	1007.6
2017	1006.7	1007.4	----	----	993.5	1007.8
2018	1006.1	1006.8	856.0	1464.2	993.2	1007.4
2019	1008.2	1008.9	857.8	1481.7	995.5	1009.8

Source: Pakistan Metrological Department

 ----: Data Not Available,

Table C-05: Vapour Pressure at Selected Centres (Mbs)

Year/Station	Peshawar (359)	Parachinar (1725)	Jhelum (232)	Zhob (1405)	D.I.Khan (173)	Lahore (213)	Quetta (1600)	Multan (122)
1997	17.7	10.2	18.0	11.2	18.7	18.5	9.9	18.7
1998	18.4	9.5	19.4	----	18.9	18.8	8.1	18.9
1999	17.6	9.7	18.1	8.8	18.5	18.3	7.4	18.5
2000	16.7	9.7	18.3	7.8	19.0	18.1	5.6	17.8
2001	16.8	9.8	18.1	8.2	20.0	19.2	6.4	19.5
2002	16.4	9.2	17.1	7.4	19.0	18.3	7.1	17.9
2003	18.0	9.2	17.9	7.9	19.5	18.3	8.1	17.7
2004	17.2	9.5	18.1	7.9	19.3	18.7	8.4	18.0
2005	17.3	9.5	17.7	8.4	18.7	18.4	10.5	17.9
2006	17.8	11.0	18.8	9.1	20.6	19.4	11.1	18.4
2007	17.3	10.5	18.9	9.1	20.3	19.1	9.7	18.8
2008	17.3	10.0	18.9	9.2	20.0	19.9	9.0	18.6
2009	16.2	9.8	16.5	9.0	18.7	17.9	9.5	18.7
2010	17.9	10.7	18.0	8.6	19.7	18.9	8.8	19.2
2011	17.5	10.7	19.5	10.1	19.7	19.7	10.8	19.8
2012	15.9	10.2	17.9	8.2	18.3	18.2	11.2	18.1
2013	----	8.2	19.6	10.0	19.9	20.4	9.3	19.5
2014	16.2	----	19.4	10.3	19.7	19.2	9.5	18.8
2015	16.4	----	20.1	9.8	20.9	19.2	9.5	19.2
2016	----	12.7	20.3	11.7	21.7	19.6	6.9	19.8
2017	16.0	11.2	19.6	----	21.0	19.2	6.7	18.7
2018	14.1	12.6	18.7	10.1	21.2	19.2	6.6	18.2
2019	----	9.4	13.4	8.8	15.3	13.6	6.6	13.9

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Table C-05: Vapour Pressure at Selected Centres (Mbs)

Year/ Stations	Dalbandin (848)	Jacobabad (55)	Panjgur (980)	Jiwani (56)	Hyderabad (40)	Chhor (5)	Karachi (22)
1997	7.6	18.7	14.1	22.7	19.8	19.9	21.1
1998	9.1	19.8	12.8	23.3	19.6	21.1	21.4
1999	7.7	19.4	12.2	22.7	18.1	21.4	20.9
2000	8.7	19.2	12.5	23.3	18.5	20.6	21.4
2001	7.1	20.8	11.7	23.0	18.5	25.0	21.3
2002	7.3	19.5	12.1	22.8	18.2	19.1	20.9
2003	7.3	20.8	10.9	23.7	18.6	20.1	20.6
2004	6.2	18.6	13.1	23.5	18.3	20.4	21.0
2005	----	19.4	12.6	22.4	18.4	18.9	20.6
2006	6.7	19.9	11.0	23.3	21.0	22.2	22.6
2007	9.6	19.7	8.9	22.6	20.2	22.6	22.7
2008	8.1	19.0	9.8	22.2	19.2	21.4	21.3
2009	9.5	18.6	10.0	23.5	19.6	21.9	22.7
2010	8.9	----	9.1	22.4	20.2	22.2	22.8
2011	8.7	22.0	8.9	23.9	20.2	24.4	22.3
2012	8.4	20.6	10.6	23.5	19.3	22.5	21.7
2013	10.6	22.1	13.5	23.2	20.1	22.3	21.9
2014	9.1	21.1	11.4	22.7	19.5	21.4	20.7
2015	8.1	21.9	11.1	23.3	20.3	21.9	22.3
2016	----	21.1	10.3	----	21.0	22.3	23.1
2017	6.5	21.9	9.4	19.7	20.7	21.1	21.9
2018	8.0	20.7	8.9	20.4	20.9	17.5	18.9
2019	8.8	14.8	9.0	19.3	16.2	15.6	17.9

Source: Pakistan Metrological Department
 ----: Data Not Available

Table C-06: Area of Crops Covered by Ground Plant Protection Measures in Pakistan

(Area '000 hectares)

| Year | Cropped area | Area sprayed | | Spray hectare |
		Actual	Percent	
2003-04	22,940	7,519	32.77	16,387
2004-05	22,780	7,776	34.13	23,333
2005-06	23,130	7,704	33.30	23,287
2006-07	23,560	16,476	69.90	30,273
2007-08	23,850	16,433	68.90	30,224
2008-09	23,798	18,838	79.15	36,143
2009-10	23,773	18,201	76.56	35,496
2010-11	22,720	15,248	67.05	9,268
2011-12	22,450	20,277	90.32	11,934
2012-13	22,750	20,277	89.12	11,934
2013-14	22,730	21,966	96.64	14,304
2014-15	23,270	19,246	82.71	14,113
2016-17	23,010	18,811	81.75	14,652
2017-18	23,450	19,246	82.07	14,501

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Table C-07:- Area Covered By Ground Plant Protection Measures

Crops	2016-17			2017-18		
	Actual Area Sown	Spray in Hectares	Avg. No. of Sprays	Actual Area Sown	Spray in Hectares	Avg. No. of Sprays
Pakistan						
Paddy	2789.4	1707.7	1.2	2890.6	2529.8	1.6
Cotton	2805.7	2184.3	1.9	2961.4	2640.7	2.5
Sugarcane	1172.5	949.2	1.2	1140.5	991.3	1.6
Maize	1168.5	1324.7	1.1	1142.5	514.4	1.3
Wheat	9199.4	5539.0	0.8	9205.5	6263.39	0.9
Oilseed	571.0	81.5	0.5	570.0	223.5	0.7
Tobacco	49.1	189.4	0.9	53.8	43.1	1.2
Fruit/Veg & Other	1055.7	2676.1	1.4	1281.66	1294.57	1.8
Total	**18811.3**	**14651.9**	**8.8**	**19246.0**	**14500.76**	**11.5**
Punjab						
Paddy	1652.3	1283.2	2.2	2476.5	1832.8	2.1
Cotton	2753.4	2052.8	4.5	2359.9	2076.6	4.5
Sugarcane	806.8	604.8	2.0	966	680.5	2.1
Maize	533.0	403.6	2.1	721.3	503.2	1.9
Wheat	6242.4	3930.4	1.3	7742.1	5436.2	1.2
Oilseed	149.1	67.2	0.8	191.6	119.4	0.9
Tobacco	10.1	8.9	1.0	11.5	10.6	1.0
Fruit/Veg & Other	832.3	748.4	1.9	1256.3	883.7	2.8
Total	**12979.4**	**9099.3**	**15.8**	**15725.2**	**11543**	**16.5**
Sindh (R)						
Paddy	635.8	268.7	0.4	828.292	621.2	2.0
Cotton	153.2	102.1	0.7	611.689	535.3	4.0
Sugarcane	189	115.7	0.6	333.262	250.2	2.0
Maize	2.5	0.0	0.0	3.559	2.6	1.0
Wheat	1049.2	831.8	0.8	1089.587	817.19	1.0
Oilseed	325.0	0.0	0.0	121.718	91.2	1.0
Tobacco	0.1	0.0	0.0	0	0.0	1.0
Fruit/Veg & Other	1378.7	1378.7	1.0	411.856	308.9	2.0
Total	**3733.5**	**2697.0**	**3.5**	**3399.963**	**2626.6**	**14.0**
KP						
Paddy	55.2	107.6	1.2	56.9	27.6	1.2
Cotton	0.25	0.75	1.4	1	0.2	0.4
Sugarcane	117.3	228.6	1.2	112.5	60.5	1.2
Maize	471.0	920.5	1.2	463	8.0	1.2
Wheat	776.8	776.8	1.0	732.6	10.0	1.2
Oilseed	14.3	14.3	1.0	12.9	12.9	1.0
Tobacco	30.0	180.0	1.6	34.5	32.0	1.8
Fruit/Veg & Other	325.0	450	1.5	297	2.97	1.5
Total	**1789.85**	**2678.55**	**10.1**	**1710.4**	**154.17**	**9.5**
Balochistan (R)						
Paddy	179.5	48.2	1.0	174.3	48.2	1.0
Cotton	38.4	28.6	1.0	41.2	28.6	1.0
Sugarcane	0.1	0.1	1.0	0.7	0.1	1.0
Maize	4.8	0.6	1.0	3.5	0.6	1.0
Wheat	399.5	0.0	0.0	385.0	0.0	0.0
Oilseed	22.8	0.0	0.0	20.2	0.0	0.0
Tobacco	1.3	0.5	1.0	1.3	0.5	1.0
Fruit/Veg & Other	262.8	99.0	1.0	252.3	99.0	1.0
Total	**909.2**	**177.0**	**6.0**	**878.5**	**177.0**	**6.0**

Source: Provincial Agriculture Departments.
R= Repeated

Table C-08: Area Irrigated by Different Sources

(Million Hectares)

Year	Total	Canals		Tubewells	Wells	Canal Tubewells	Canal Wells	Tanks	Others
		Government	Private						
1994-95	17.20	7.06	0.45	2.83	0.17	6.41	0.10	(*)	0.18
1995-96	17.58	7.15	0.45	2.89	0.18	6.58	0.11	(*)	0.22
1996-97	17.83	7.35	0.46	2.90	0.18	6.61	0.11	(*)	0.22
1997-98	18.00	7.31	0.48	3.00	0.16	6.74	0.13	(*)	0.18
1998-99	17.95	7.20	0.47	2.98	0.17	6.88	0.09	(*)	0.16
1999-00	18.11	7.10	0.46	3.11	0.18	6.99	0.09	(*)	0.18
2000-01	17.82	6.55	0.43	3.19	0.16	7.22	0.10	(*)	0.17
2001-02	18.04	6.38	0.43	3.45	0.20	7.24	0.16	(*)	0.18
2002-03	18.22	6.62	0.44	3.37	0.21	7.21	0.17	(*)	0.21
2003-04	18.78	6.78	0.44	3.48	0.22	7.50	0.15	(*)	0.21
2004-05	18.84	6.56	0.44	3.46	0.25	7.70	0.19	(*)	0.24
2005-06	19.12	6.54	0.52	3.58	0.28	7.78	0.20	(*)	0.22
2006-07	19.54	6.36	0.42	3.89	0.62	7.78	0.22	(*)	0.25
2007-08	19.29	6.52	0.39	3.83	0.31	7.79	0.17	(*)	0.28
2008-09	19.42	6.43	0.40	3.84	0.30	7.94	0.20	(*)	0.31
2009-10	19.64	6.44	0.39	3.88	0.30	8.07	0.26	(*)	0.30
2010-11	18.67	6.01	0.39	3.92	0.32	7.60	0.25	(*)	0.18
2011-12	18.56	5.59	0.37	4.01	0.32	7.86	0.19	0.02	0.20
2012-13	17.94	5.29	0.43	3.76	0.31	7.76	0.20	(*)	0.19
2013-14	18.59	5.53	0.42	3.71	0.38	8.11	0.26	(*)	0.18
2014-15	18.73	5.59	0.43	3.68	0.47	8.06	0.29	0.00	0.21
2015-16	18.60	5.56	0.40	3.60	0.35	8.15	0.28	0.00	0.26
2016-17	18.22	5.53	0.36	3.62	0.40	7.85	0.29	0.00	0.17
2017-18	18.59	5.61	0.35	3.60	0.44	8.15	0.27	0.00	0.17
2018-19(P)	18.59	5.61	0.35	3.60	0.44	8.15	0.27	0.00	0.17

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research

Note: - (*) Nominal
(P) = Provisional

Table C-09: River Flow Availability (Kharif and Rabi)

(Million Acre Feet)

Year	Kharif				Rabi			
	Jehlum at Mangla	Chenab at Marala	Indus at * Kalabagh	Total	Jehlum at Mangla	Chenab at Marala	Indus at * Kalabagh	Total
1996-97	24.93	27.48	85.08	137.50	4.11	4.41	15.23	23.75
1997-98	16.96	21.74	71.45	110.15	7.06	6.55	18.48	32.10
1998-99	18.11	23.16	83.71	124.98	3.61	4.78	16.18	24.57
1999-00	11.24	18.70	77.51	107.46	3.19	4.35	14.57	22.11
2000-01	10.27	17.20	58.86	86.33	2.28	2.73	11.55	16.56
2001-02	8.23	16.00	55.65	79.88	3.66	2.90	10.72	17.28
2002-03	12.31	18.02	64.64	94.97	5.10	5.47	12.49	23.06
2003-04	17.67	21.50	76.61	115.78	5.00	4.36	12.79	22.15
2004-05	11.74	14.90	55.43	82.07	6.72	6.41	17.32	30.45
2005-06	17.71	21.12	82.37	121.20	5.46	4.02	14.45	23.93
2006-07	16.43	21.38	74.02	111.83	6.78	6.33	17.73	30.84
2007-08	13.51	16.98	75.40	105.89	4.18	3.62	12.39	20.19
2008-09	13.38	16.21	65.89	95.48	5.88	3.61	13.51	23.00
2009-10	16.48	14.46	68.18	99.12	4.57	3.39	13.22	21.18
2010-11	20.31	21.02	91.18	132.51	5.42	4.78	14.52	24.72
2011-12	15.28	18.83	65.85	99.96	4.17	3.60	10.93	18.70
2012-13	14.70	17.14	66.27	98.11	5.38	4.43	15.37	25.18
2013-14	15.22	18.70	82.38	116.30	5.07	4.45	14.88	24.40
2014-15	19.93	21.14	65.88	106.95	6.39	5.47	15.52	27.38
2015-16	20.71	22.83	83.20	126.71	7.87	4.48	17.76	30.12
2016-17	15.15	18.05	76.74	109.94	4.57	3.98	13.93	22.48
2017-18	15.80	20.71	72.32	108.83	2.41	2.84	11.94	17.19
2018-19	11.18	16.82	58.94	86.94	4.71	4.77	12.92	22.40

Year	Total (Kharif & Rabi)			
	Jehlum at Mangla	Chenab at Marala	Indus at Kalabagh	Total
1996-97	29.04	31.89	100.32	161.25
1997-98	24.02	28.29	89.93	142.25
1998-99	21.72	27.94	99.89	149.55
1999-00	14.43	23.05	92.09	129.57
2000-01	12.55	19.93	70.41	102.89
2001-02	11.89	18.90	66.37	97.16
2002-03	17.41	23.49	77.13	118.03
2003-04	22.67	25.86	89.40	137.93
2004-05	18.46	21.31	72.75	112.52
2005-06	23.17	25.14	96.82	145.13
2006-07	23.21	27.71	91.75	142.67
2007-08	17.69	20.60	87.79	126.08
2008-09	19.26	19.82	79.40	118.48
2009-10	21.05	17.85	81.40	120.30
2010-11	25.73	25.80	105.70	157.23
2011-12	19.45	22.43	76.78	118.66
2012-13	20.08	21.57	81.64	123.29
2013-14	20.29	23.15	97.26	140.70
2014-15	26.32	26.61	81.40	134.33
2015-16	28.58	27.31	100.96	156.86
2016-17	19.72	22.03	90.66	132.41
2017-18	18.21	23.55	84.26	126.02
2018-19	15.89	21.59	71.86	109.34

Source:-Pakistan Water and Power Development Authority (WAPDA).   *   Un-regulated

Table C-10: Summary of Protected Areas in Pakistan (based on NCCW data) 2018

(000 ha)

Region/Province	National Parks	Wildlife Sanctuaries	Game Reserves	Community Reserves	Total Protected Area	Total Area Conserved (000ha)
Azad Jammu Kashmir	8	1	11	-	20	119139
Balochistan	3	14	8	3	28	2152676
Punjab	4	37	23	5	69	1859456
Khyber Pakhtunkhwa	6	3	38	106	153	1060555
Sindh	1	34	13	-	48	1720029
Federal Territory	1	1	-	-	2	24386
Gilgit/Baltistan	5	2	4	46	57	3835489
Totals	**28**	**92**	**97**	**160**	**377**	**10771730**

Table C-10: Summary of Protected Areas in Pakistan (based on NCCW data) 2019

(000 ha)

Region/Province	National Parks	Wildlife Sanctuaries	Game Reserves	Community Reserves	Total Protected Area	Total Area Conserved (000ha)
Azad Jammu Kashmir	8	1	11	-	20	119139
Balochistan	3	14	8	3	28	2152676
Punjab	6	37	23	5	71	1868196
Khyber Pakhtunkhwa	6	3	38	106	153	1060555
Sindh	1	34	13	-	48	1720029
Federal Territory	1	1	-	-	2	24386
Gilgit/Baltistan	5	2	4	46	57	3835489
Totals	**30**	**92**	**97**	**160**	**379**	**10780469**

Name of Marine Protected Area	Location	Area
Astola Island Marine Protected Area	Tehsil Pasni, District Gawardar, Balochistan	40,147 ha

Source:- Climate change

Table C-11: Forest Area (2018-19)

(000 Hectares)

Forest Type	Punjab	KP*	Sindh	Balochistan	Azad Kashmir	* Gilgit Batistan	Total
Coniferous Forests	144	760	-	208	408	192	1712
Irrigated Plantations	440	-	82	173	-	43	738
Riverain Forests	143	-	241	104	-	-	488
Scrub Forests	680	308	-	347	9	-	1344
Coastal Forests	-	-	345	174	-	-	519
Linear Plantations	-	2	-	694	-	-	696
Mazri	-	24	-	347	-	-	371
Range Land	203	74	457	226	150	685	1795
Miscellaneous	2971	750	-	510	-	-	4231
Grand Total	**4581**	**1918**	**1125**	**2783**	**567**	**920**	**11894**

Source:- 1. Provincial Forest Department.
2. Agriculture Statistics of Pakistan 2017-18
* = 2017-18

Table C-12: Share of Forestry in Value Added of Agriculture Sector

(Rs. In Million)

Year	GDP-CF	Agriculture	Forestry	% Share of Foresty in Agriculture	% Share of Foresty in GDP
(BASE = 2005-06)					
2010-11	9,404,102	1,977,178	42,121	2.13	0.45
2011-12	9,733,907	2,048,794	42,874	2.09	0.44
2012-13	10,161,854	2,103,600	45,695	2.17	0.45
2013-14	10,636,891	2,156,117	46,555	2.16	0.44
2014-15	11,140,138	2,202,043	40,761	1.85	0.37
2015-16	11,755,824	2,205,433	46,592	2.11	0.40
2016-17	12,408,775	2,253,565	45,505	2.02	0.37
2017-18	13,133,003	2,343,614	46,679	1.99	0.36
2018-19	13,262,866	2,357,095	50,352	2.14	0.38

Source:- Agricultural Statistics of Pakistan, M/O National Food Security and Research
(R) = Revised

Table C-13: Area of Forests by Legal Classification for the year 2018-19

(000Hectares)

Category	Total	Balochistan	KP	Punjab	Sindh	Gilgit Baltistan	AJK
1	2	3	4	5	6	7	8
Total	13125	5992	1883	3298	1136	249	567
State	2916	700	-	1649	-	-	567
Reserved	1213	-	94	796	323	-	-
Protected	1992	109	480	529	802	72	-
Unclassed	391	-	105	281	5	-	-
Resumed Lands	45	-	36	5	4	-	-
Guzara	270	-	270	-	-	-	-
Communal	50	-	50	-	-	-	-
Section 38	219	-	8	34	-	177	-
Chose Act	-	-	-	-	-	-	-
Miscellaneous	6029	5183	840	4	2	-	-

Source:- Provincial Forest Department.

Table C-14: Forest Area under the Control of Forest Departments by Types of Vegetation for the year 2018-19

(000 Hectares)

Category	Total	Balochistan	KP *	Punjab	Sindh	Gilgit Baltistan	AJK
1	2	3	4	5	6	7	8
Total	11273	1585	1918	4628	668	1907	567
Coniferous	2098	286	760	144	-	500	408
Irrigated plantation	606	-	-	440	82	84	-
Riverain	384	-	-	143	241	-	-
Scrub	1831	834	308	680	-	-	9
Coastal	345	-	-	-	345	-	-
Linear Plantation	49	-	2	47	-	-	-
Range Lands	2215	465	74	203	-	1323	150
Mazri	24	-	24	-	-	-	-
Miscellaneous	3721	-	750	2971	*	-	-

Source:- 1. Provincial Forest Department.
2. Agriculture Statistics of Pakistan 2017-18

* =   2017-18

Table C-15: Area Afforested

<div align="right">(000 Hectares)</div>

Year	Total	Balochistan	KP	Punjab	Sindh
1993-94	13.1	N.A	9.9	2.5	0.7
1994-95	14.7	1.8	9.8	1.5	1.6
1995-96	19.1	0.9	13.6	2.7	1.9
1996-97	19.9	N.A	15.1	1.9	2.9
1997-98	20.9	N.A	6.9	2.3	11.7
1998-99	18.9	N.A	8.2	3.9	6.8
1999-00	15.1	N.A	10.5	3.9	0.7
2000-01	22.9	4.5	7.6	3.9	6.9
2001-02	16.5	4.9	6.5	1.1	4.0
2002-03	17.5	4.4	5.7	1.4	6.0
2003-04	21.9	6.9	7.7	1.9	5.4
2004-05	19.9	2.0	11.3	3.2	3.4
2005-06	14.7	0.8	5.5	3.0	5.4
2006-07	19.3	0.8	8.1	4.2	6.2
2007-08	17.2	N.A	7.9	3.6	5.7
2008-09	17.2	1.0	9.3	4.1	3.9
2009-10	12.5	0.5	6.3	3.0	2.7
2010-11	6.3	0.4	-	3.2	2.7
2011-12	16.1	4.8	-	3.4	7.9
2012-13	26.4	3.3	8.0	3.2	11.9
2013-14	16.0	N.A	N.A	4.8	11.2
2014-15	30.5	N.A	N.A	6.8	14.4
2015-16	29.0	N.A	N.A	5.3	17.4
2016-17	26.3	N.A	N.A	11.2	15.1
2017-18	46.3	N.A	17.8	21.7	6.8
2018-19	34.2	12.6	N.A	12.9	0.7

Source: - Provincial Forest Department

NA = Not Available

Table C-16: Area Regenerated

(000 Hectares)

Year	Total	Balochistan	KP	Punjab	Sindh
1993-94	29.3	0.2	1.9	2.3	24.9
1994-95	31.8	N.A	2.0	4.2	25.6
1995-96	31.7	0.1	2.5	4.5	25.6
1996-97	18.1	0.1	1.9	3.6	12.5
1997-98	18.3	N.A	0.6	1.6	16.1
1998-99	19.8	N.A	0.5	1.0	18.3
1999-00	7.0	N.A	0.5	0.6	5.9
2000-01	7.1	N.A	2.6	0.4	4.1
2001-02	16.3	N.A	3.9	0.9	11.5
2002-03	5.5	N.A	2.7	0.8	2.0
2003-04	12.6	N.A	3.4	1.2	8.0
2004-05	11.4	N.A	1.0	0.9	9.5
2005-06	11.4	N.A	1.1	2.5	7.8
2006-07	12.1	N.A	1.4	1.1	9.6
2007-08	10.0	N.A	1.2	0.8	8.0
2008-09	7.6	0.5	3.1	1.0	3.0
2009-10	8.2	0.2	3.0	1.0	4.0
2010-11 (P)	16.7	0.2	3.5	-	13.0
2011-12	N.A	N.A	N.A	N.A	N.A
2012-13	N.A	N.A	N.A	0.8	N.A
2014-15	54.7	N.A	44.4	0.7	9.6
2015-16	271.3	N.A	262.9	0.4	8.0
2016-17	7.6	N.A	-	N.A	3.0
2017-18	8.2	N.A	-	0.1	4.0
2018-19	16.7	2.5	-	*	13.0
2019-20	142.0	-	142.0	-	N.A

Source:- Provincial Forest Department by province
P= Provisional   NA = Not Available
        *   Negligible value

Table C-17: Quality of Ground Water at Various Locations of Faisalabad during 2019

Location	Physical and Biological Parameters							
	Colour	Taste	Smell	Temperature Centigrade	Oxygen Contents mg/l	Conductivity Second	Turbidity NTU	Coliform Per 100ml
1. Well-field area near River Chenab Faisalabad Sample No.1	Colour less	Unobjectio n able	No smell	25	2.9	690	0	0
2. Well-field area near River Chenab Faisalabad Sample No.2		"	"	25	2.7	760	0	0
3. Well-field area near River Chenab Faisalabad Sample No.3		"	"	25	2.9	730	0	0
4. Well-field area near River Chenab Faisalabad Sample No.4		"	"	25	3.0	660	0	0
5. Well-field area near River Chenab Faisalabad Sample No.5		"	"	25	3.0	640	0	0
6. Well-field area near River Chenab Faisalabad Sample No.6		"	"	25	2.7	660	0	0

Location	Chemical Parameters					
	T.D.S (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Carbonates (mg/l)	Bicarbonates (mg/l)	Chloride (mg/l)
1. Well-field area near River Chenab Faisalabad Sample No.1	350	32	46	Nil	296	156
2. Well-field area near River Chenab Faisalabad Sample No.2	390	40	42	Nil	340	172
3. Well-field area near River Chenab Faisalabad Sample No.3	320	59	30	Nil	324	168
4. Well-field area near River Chenab Faisalabad Sample No.4	340	53	33	Nil	300	148
5. Well-field area near River Chenab Faisalabad Sample No.5	320	44	40	Nil	308	92
6. Well-field area near River Chenab Faisalabad Sample No.6	310	59	37	Nil	312	76
6. Madina Town T/W 4.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
7. Mansoor Abad T/W 4.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source:- Faisalabad Development Authority.

Table C-18: Phase out of HCFC 141b Implemented by UNIDO 2015 to 2019

Name of Industry	Phase out in ODP tons	Application	Location	Industrial Sector	Status
United Refrigeration	32.43	Foam	Hyderabad	Refrigeration	Completed
Dawalance	22.40	Foam	Karachi	Refrigeration	Completed
Haier, Lahore	7.68	Foam	Lahore	Refrigeration	Completed
Varioline	5.24	Foam	Lahore	Refrigeration	Completed
Shadman Electronics	3.91	Foam	Karachi	Refrigeration	Completed

Source**:-** National Ozone Unit, Ministry of Climate Change.

Table C-19: Phase out of HCFC 141b Implemented by UNIDO, 2016 to 2020.

Name of Industry	Phase out in ODP tons	Application	Location	Industrial Sector	Status
Shoaibee Industries	10.13	Foam	Karachi	Thermoware	Ongoing
Full Bright Plastic	4.60	Foam	Karachi	Thermoware	Ongoing
Asif Zubair & Co.	4.50	Foam	Karachi	Thermoware	Ongoing
Tropical Plastic	2.96	Foam	Karachi	Thermoware	Ongoing
Unique Plastic	3.20	Foam	Karachi	Thermoware	Ongoing
Delight Plastic	2.80	Foam	Karachi	Thermoware	Ongoing
Decent Plastic	2.28	Foam	Karachi	Thermoware	Ongoing
Pakistan Insulation	7.32	Foam	Karachi	PU Sandwich Panel	Ongoing
Pakistan Air conditioning Engineering Co. (PAECO)	3.52	Foam	Lahore	PU Sandwich Panel	Ongoing
Foster Refrigerators	3.85	Foam	Lahore	PU Sandwich Panel	Ongoing
Kold Kraft	3.97	Foam	Lahore	PU Sandwich Panel	Ongoing
Dawlance	9.38	Air Conditioning	Karachi	Air Conditioning and Servicing	Ongoing

Source: National Ozone Unit, Ministry of Climate Change, Islamabad.

Inventories, Stocks and Background Conditions

This section presents historical background and development in education and health sectors. In addition to the literacy levels, educational infrastructure by type, enrollment at various stages, availability of teachers and student - teacher ratios are worked out. It also highlights availability of health facilities to the population in terms of doctors, nurses, midwives, hospitals, dispensaries, hospitals beds, family planning statistics, immunization coverage, etc. Moreover, the tabular part also includes data on electricity, natural/associated gas reserves, and coal reserves.

D-I Education

Education is the major cause and consequence of economic and social development and considered as the investment in human capital, which is leading factor for building the nation. Government of Pakistan has been making strenuous efforts to improve the literacy rate and to provide education to all school-going children at all levels.

D-I.i Literacy

Literacy is one of the basic driver to catalyze change in socio-economic milieu for better. According to PSLM Survey, literacy rate improved from 57% in 2008-09 to 60% in 2018-19. The comparative literacy rates by sex and area, given in the parenthesis, also scale up, more in the case of females (45%, 49%) than males (69%, 71%) and rural (48%, 51%) than urban 74% with no change. However, the male - female and rural-urban disparities remain quite positive but seem to be converging down the time lane though with sub-optimal speed, more in urban than rural areas. The relevant data has presented in the table (Figure D-1) D-01.

Figure: D-1: Literacy Rates by Sex and Urban-Rural Areas

Urban

Rural
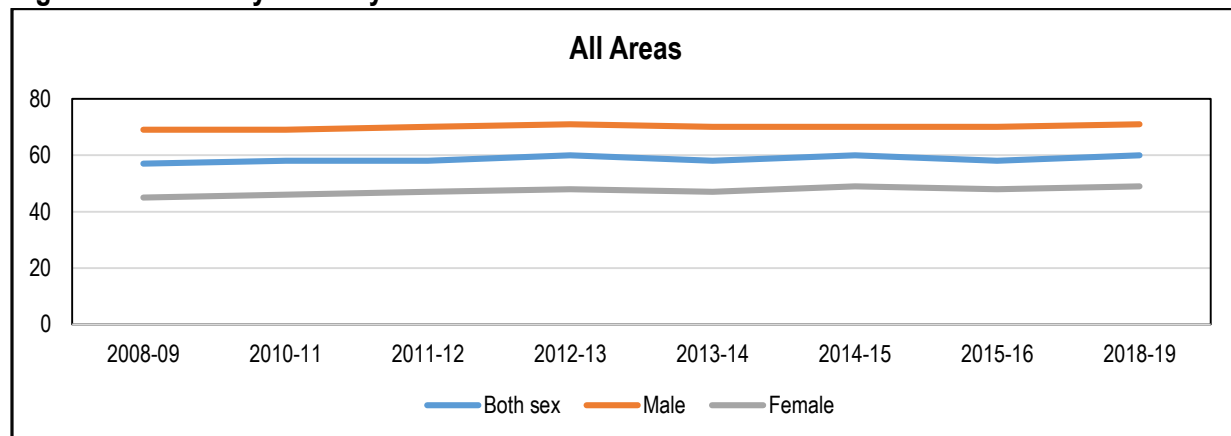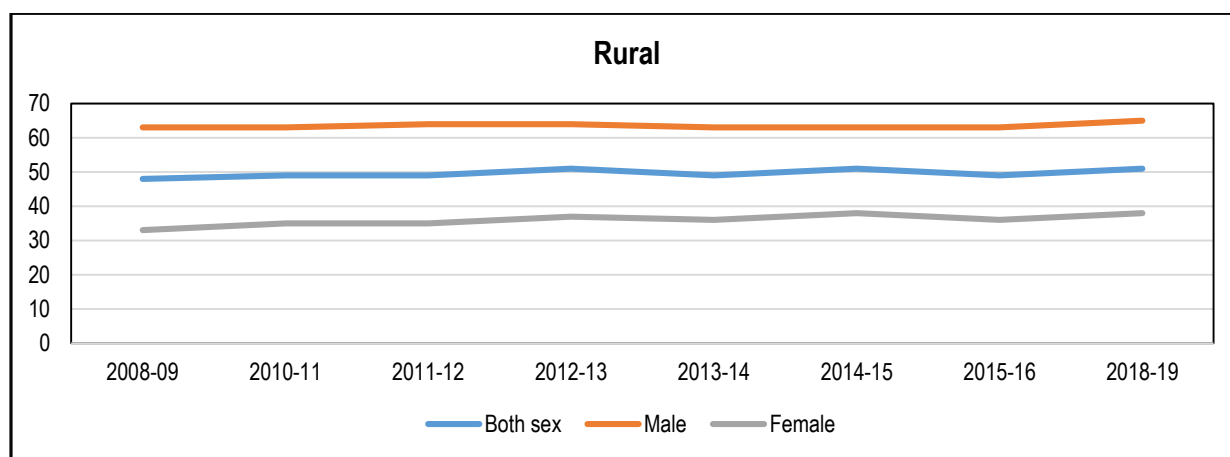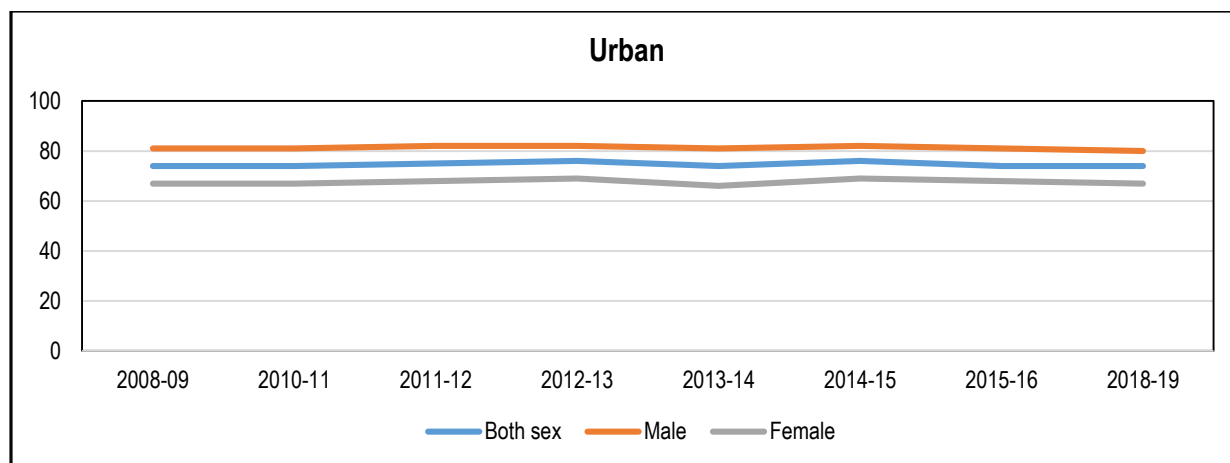
D-I.ii   Enrollment

a.   Primary Schools

At the time of independence, the primary level enrollment (class I-V) was 0.770 million which increased to 37.407 million in 2018-19 (Table D-02). It indicates more than 49 times increase in 72 years. In the linear perspective, the annual average growth rate of primary level enrollment (5.5 percent) is almost double of the population growth rate during this period. Nevertheless, expanse of the base and consequential time series fall short of exhaustive outreach of primary education. This notwithstanding, population per school (Table below, D-I) of the 5-9 year aged, has been decreasing down the time lane from 555 in 1950-51 to 135 in 2018-19.

Figure: D.2: Enrollment in Primary Schools by Sex
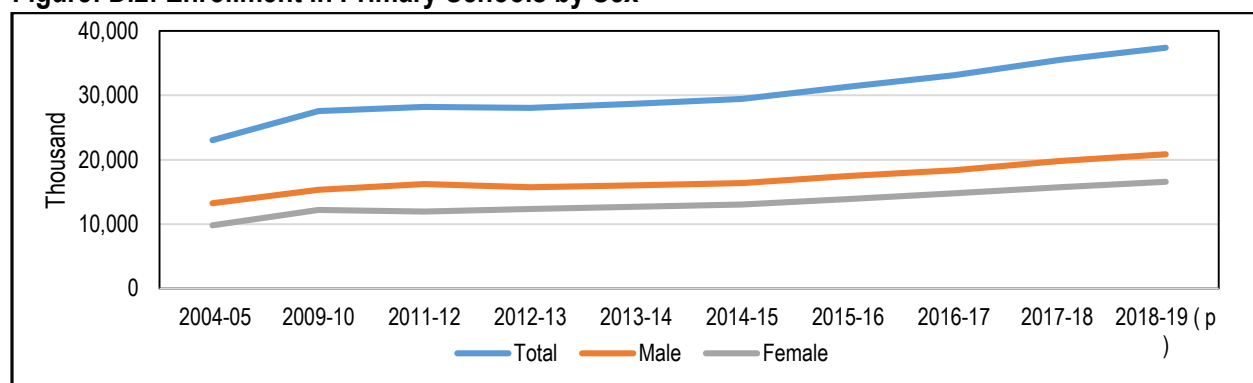
Table D-I: Relationship of Primary Schools and Population Aged (5-9 Years)

Year	Number of Primary Schools	Population 5-9 Years (000)	Population/School
1950-51	9,411	5,225	555
1960-61	20,909	6,472	310
1970-71	45,854	9,853	215
1980-81	59,169	13,434	227
1990-91	114,142	18,301	160
1997-98	156,318	20,215	129
2002-03*	150,809	20,080	133
2007-08	157,407	20,211	125
2008-09	156,654	20,612	127
2009-10	157,466	21,015	128
2010-11	155,495	21,420	131
2011-12	154,650	21,826	133
2012-13	159,680	22,232	132
2013-14	157,936	22,634	133
2014-15	165,914	23,033	139
2015-16	164,630	23,426	142
2016-17	168,864	23,813	141
2017-18	172,519	24,188	140
2018-19	181,855	24,529	135

Source:- Population: i) Population Census Organization ii) Planning & Development Division
            Enrolment: Academy of Educational Planning & Management, Islamabad
*   Pre-Primary Schools figures not included

b.   Middle Schools

The middle level enrollment (class VI-VIII) registered 35 fold rise, from 221 thousand in 1947-48 to 7641 in 2018-19 (Table D-02). The average annual growth rate (5 percent) is slightly lower as compared to that in primary schools enrollment.

As for sex-wise enrollment (Fig D-3) male enrollment during the period increased at an annual growth rate of 4.3 percent vis a vis 7.3 percent of females. Thus, male-female disparity has been receding owing, probably to attitudinal shift.

Figure: D-3: Enrollment in Middle Schools by Sex
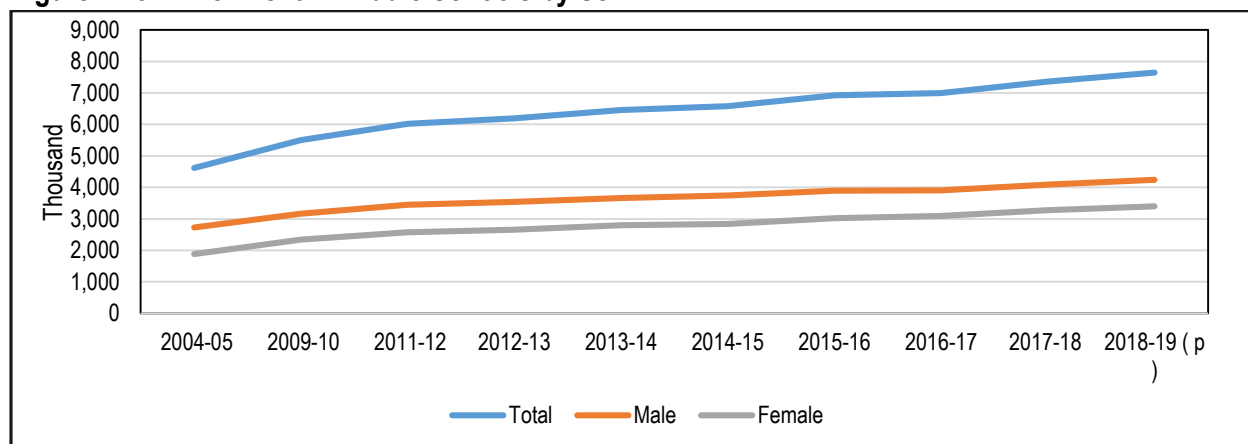
c.   **High and Secondary School Vocational Institutions**

Enrollment in high school or secondary level school (IXth and Xth classes) or equivalent vocational classes indicates increase at an average annual growth rate of 6 percent during 1947-48 to 2018-19. About 62 thousand students were enrolled in high school level classes in 1947-48 compared to 4339 thousand during the year 2018-19 (Table D-02). As for male - female gap (Fig D-4) it has been closing as female enrollment at High School level increased from 14.8 percent of the male enrollments in 1947-48 to 75.6% in 2018-19.

Figure: D-4: Enrollment in Secondary Schools by Sex
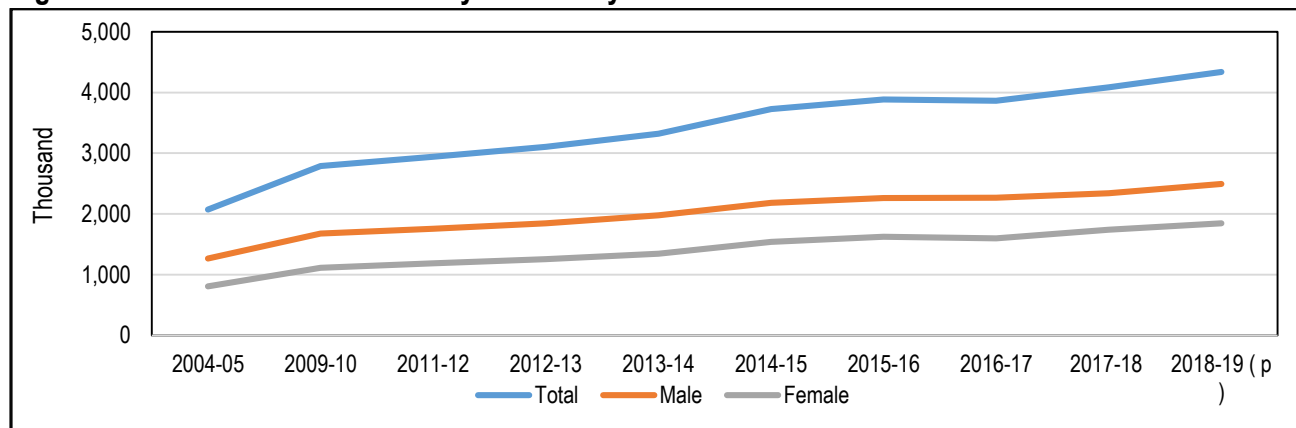
d.   **Arts and Science Colleges**

The arts and science colleges include enrollment of class XI and XII (Intermediate) and B.A/B.Sc. students. The enrollment in arts and science colleges registered 47 fold increase in 65 years from 43 thousand in 1954-55 to 2032 thousand in 2018-19 (Table D-02). This level of trending up augurs well for cultivating progressive socio-cultural attitudes.

Auspiciously, gender gap has been shrinking during the period as females enrollment rose 160 fold, from 16% of males enrollment in 1954-55 to 89 % of the same in 2018-19.

e.   Professional Colleges

The professional colleges focus on the education of Agriculture, Medical, Engineering, Law, Commerce, Tibb and Homeopathy. The enrollment in the professional colleges increased from 4.4 thousand at the time of independence to 294.0 thousand in 2018-19 at an average annual growth rate of 6.0 percent during the period. Gender gap has been receding as female enrollment witnessed 290-fold increase vis a vis 50 fold of males and fared at 42% of males enrollment in 2018-19 in comparison with 7% at the time of independence (Table D-02).

f.   Universities

There were 644 students enrolled in 2 Universities existed in the country at the time of independence. This includes degree and post graduate level enrollments in various subjects. The enrollments in 2018-19 is estimated at about 996.3 thousand in 115 universities of the country (Table D-02). This shows an increase at an annual growth rate of 10.8 percent, the highest among all level of education during the period. Seemingly, university education is more facilitated /subsidized as compared to primary/secondary education. Since university graduate tend to emigrate due to limited opening in the country, the bias in favour of university education is likely to work at the cross purpose of increasing the literacy rate.

D-I.iii   Educational Infrastructure

a.   Primary Level Schools

At the time of independence (1947-48) there were 8,413 primary schools in the country. Their number increased to 175293 during 2018-19. Thus primary schools increased with lower average annual growth rate of 4.3 percent as against 5.5 percent of enrollment therein during the same period. Nevertheless, population per primary school declined from 555 in 1950-51 to 135 population in 2018-19(Table D-I).

The number of primary schools for females (1549) at the time of independence fared at one-fourth of the number of boys primary school (6864). As of 2018-19, the girls primary school have increased 50 fold (76746) vis a vis 14 times (98547) increase in the number of boys primary schools. The former now number more than one-half of the latter's (Figure: D-5).

Figure: D-5: Number of Primary Schools by Sex
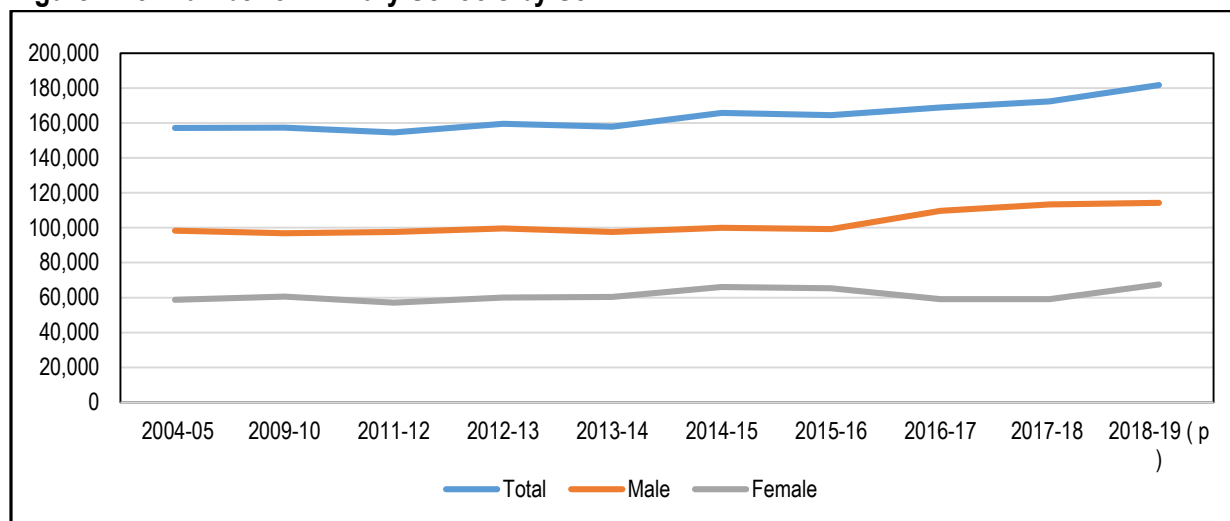
There were about 18 thousand primary school teachers available for 8,413 primary schools in 1947-48 i.e. two teachers per school and-one teacher for 43 students. The number of teachers increased to 545.2 thousand in 2018-19. Thus   ratio of teachers per school has slightly increased to 3 teachers per school though number of students per teacher also increased from 43 in 1947-48 to 69 in 2018-19.

Availability of male primary school teachers increase 17 fold as against 127 fold observed in case of female teachers during 72 years between 1947-48 and 2018-19. The number of teachers per primary school increased from 2.24. to 2.40 in the case of male and also 1.55 to 3.96 in case of female teachers. However, student- teacher ratio has also increased, more for males (43 to 80) than females (46 to 58) (Table D-02).

b.   Middle Schools

The availability of middle schools increased 22 times from 2190 at the time of independence (1947-48) to 47665 schools in 2018-19 (Table D-02). Concomitantly, enrollment per middle school increased from 101 students in 1947-48 to 160 students in 2018-19. Though, number of teachers per middle school increased from 5.5 in 1947-48 to 9.8 teachers in 2018-19, students - teacher ratio also increase in during these years.

Sex wise, the availability of boy middle schools in 1947-48 (2037) fared at 13 times of girls middle schools 153 increased 9.9 times (23756) in 2018-19 vis a vis 156 time of girls middle school (23909) to situate the latter with the former almost equivalently.

Figure: D-6: Number of Middle Schools by Sex
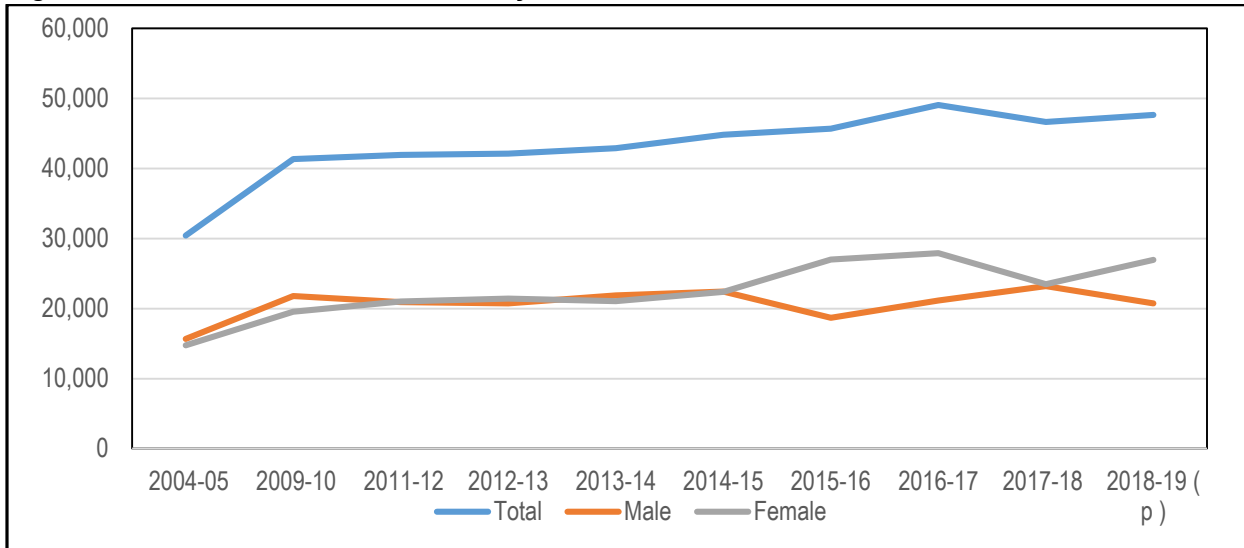

c.   High and Secondary Vocational Institutions

Number of high/secondary schools at the time of independence (454) grew at an average annual growth rate of 6.1 percent to 32725 in 2018-19. The corresponding high school numbers resolve into 372 vs.18611 for boys and 82 vs 14114 for girls. The latter's numbers fare at 22 percent and 76 percent of the former, which betokens receding gender gap.

As for enrollment per school, it decreased from 137 to 133 during the period. The corresponding sex wise figures are 145 vs 133 for boys and 98 vs 132 for girls, which bespeak declining availability of high schools for fair sex. However, number of teachers per school in 2018-19 (18) do indicate higher number per girls high school (25) vis a vis boys high schools (12). This may, interalia, due to lower number of the former (Table D-02).

Figure: D-7: Number of Secondary Schools by Sex
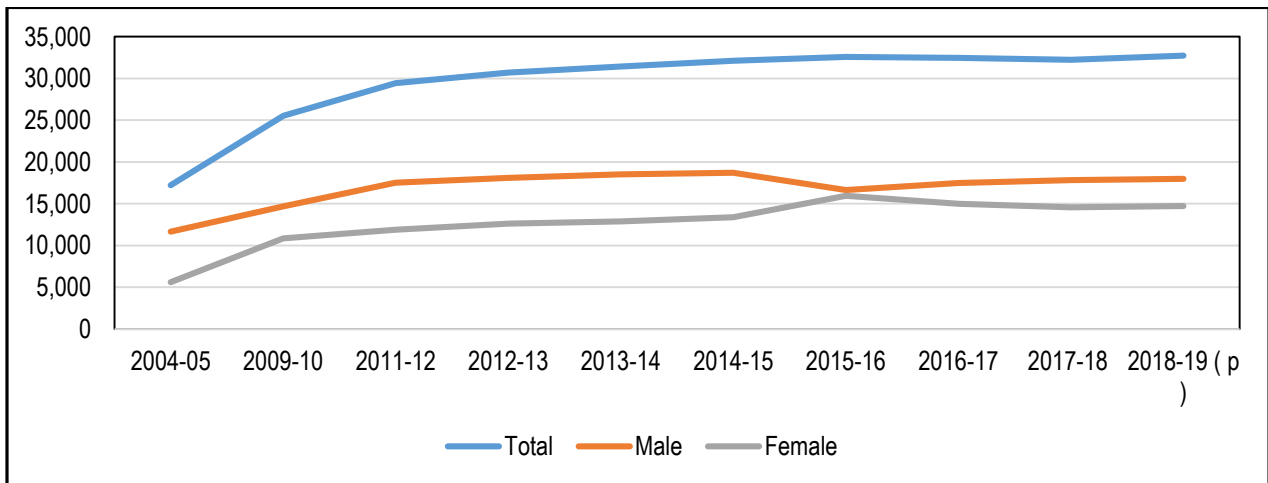
d.   Arts and Science Colleges

The number of arts and science colleges grew 30 fold from 77 in 1954-55 to 2326 in 2018-19 during the span of 65 years. The corresponding number resolves into 58 & 1239 for boys and 19 & 1087 for girls. The latter's relative profile increased from 33 percent to 88 percent of the former. Enrollment per college more than doubled from 558 to 874 during the period. The corresponding figures for girls (316,883) and, boys (638, 866) indicates that former's size more than quadrupled while the latter's more than doubled during the comparative periods (Table D-02).

e.   Professional Colleges

Professional colleges were not available at the time of independence. However, there were 24 professional colleges (Agriculture, Medical, Engineering, Law, Tibb, Commerce and Homeopathic) in the country in 1954-55, which increased 28 fold to 668 in 2018-19. Professional college practice co-education .This notwithstanding, five girls professional colleges were established in 1964-65 which increased to 62 in 2018-19. (Table D-02). Since professional colleges are infrastructure-heavy establishments, their number down the time lane increase modestly (Table D-02). As of 2018-19, there are 31 teachers per college and 14 student per teacher. Out of the total teachers (21300), more than one-third (33%) are females (7000).

f.   Universities

The number of universities increased 58 fold from two (2) in 1947-48 to 115 in 2018-19. The ratio of teachers per university increased from 217 for 6 universities available in 1964-65 to 342 for 115 universities in 2018-19. However, student-teacher ratio also increased from 10 to 25 during the comparative periods. This indicates rising clientele for universities.

D-II   Health

D-II.i   Historical Background

Like other socio-economic sectors, the country inherited very inadequate health infrastructure and manpower at the time of independence. Though a lot of health facilities dot the country's expanse, the related indicators have not improved much. Among the reasons the seminal one is that health sector could not claim a high priority in development plans. This can be judged from the fact that the total expenditure on health & nutrition during 2018-19 was Rs.421.8 billion (1.1 % of GDP), out of which Rs 58.63 billion were allocated for development expenditure. However, following sectors has seeks to improve:-

1.   Health manpower.
2.   Gathering and Using reliable health information.
3.   Strategic use of emerging technologies.
4.   Health status of the population.
5.   Access to essential health services.
6.   Measurable reduction in the burden of diseases.
7.   Protecting the poor and under privileged population.

D-II.ii   Health Infrastructure

a.   Hospitals

At the time of independence there were 292 hospitals in the country i.e. one hospital was available for about 111 thousand population. The number of hospital tripled in 72 years to 1282 in 2019 (Table D-08). The annual average growth rate of hospitals is 2.1 percent, which is below the annual population growth rate in the country during last 72 years. Thus, increasing population, as well as, pacy urbanization result into more pressure on the hospitals which are mainly situated in major urban localities. It is estimated that population per hospital which was 111 thousand per hospital in 1947 raised to 165 thousand per hospital in 2019. (Fig D-8).

However, population per hospital bed declined from 2,360 in 1947 to 1,579 in 2018-19 to indicate availability of more beds in the hospitals (Table D-08).

Figure: D-8: Population per Hospital (000)

(As on Ist January)
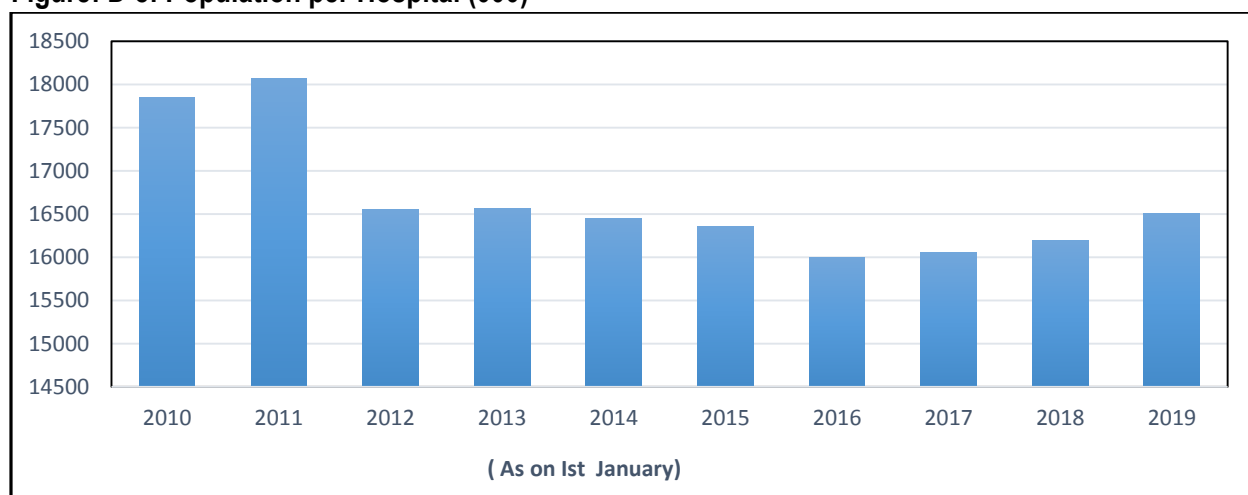
b.   Dispensaries

The dispensaries are normally supervised by an MBBS doctor and supported by a Lady Health Visitor, dispenser, midwife, aya, chowkidar and sweeper. There were 722 dispensaries in 1947, which increased to 5743 in 2019. It shows more than 8 times increase in number of dispensaries in 72 years (Table D-08). The annual average growth rate of dispensaries was higher i.e. 2.9 percent as against 2.1 percent for hospitals.

### c.   Maternal and Child Health Centre (MCH)

The Maternal and Child Health Centres (MCH) are established mostly in the rural areas, to provide services to expectant mothers and new born babies. Centres are supervised by Lady Health Visitors. The number of MCHs increased 8 times from 91 in 1947-48 to 752 in 2019 with an annual average growth rate of 2.9 percent during the comparative periods.

d.   Beds in Hospitals and Dispensaries

The hospitals and dispensaries have the facilities to admit patients in need of continued medical care or surgical treatment. There were about 14 thousand beds in the hospitals and dispensaries in 1947 which increased more than Nine (10) times in last 72 years to 134 thousand in 2019. Similarly, number of hospitals increased from 827 in 1995 to 1282 in 2019.

Figure: D-9: Number of Registered Doctors and Nurses During 2010 to 2019
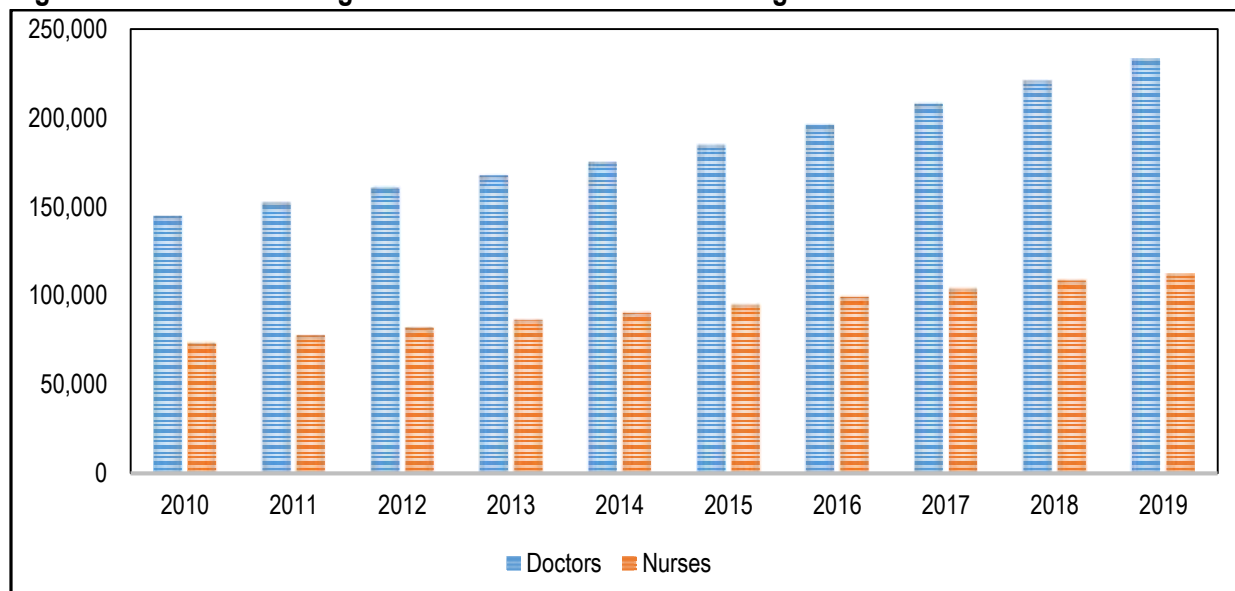
D-II.iii   Health Manpower

a.   Doctors

There were only 48,342 registered doctors in 1989 in the country for about 132 million population i.e. one doctor for twenty-seven hundred persons. However, as of 2019 there are more than 233 thousand registered doctors in the public and private sectors in the country, translating into one doctor for 1073 persons (Table D-07). The number of registered doctors grew with an average annual growth rate of 5.3 percent during 1989 to 2019.

b.   Nurses

The nurses play very important role in the health care services. The number of registered nurses grew with an average annual growth rate of 6.0 percent from 15861 in 1989 to 112123 in 2019. This translates impressively in to improved availability of nurses from one per 132.85 million people in 1998 to one per 8375 people. However, the number of nurses is one-half of the number of doctors in 2019(Table D-07) which falls short of the desirable calculus of health manpower.

c.   Dentists

The number of registered dentists registered 13-fold increase with an annual growth rate of 8.9 percent from 1911 in 1989 to 24930 in 2019. This translates into one dentist for about thirty-nine thousand population in 1998 as against 24 thousand per dentist in 2019 (Table D-07). However, population per dentist is still very high. The dentists are available mainly in big hospitals and large cities, and as such, rural population which is almost 57percent of the total population in the country seems short shifted in this regard.

D-II.iv   Basic Health Indicators

Table below (D-II) gives a comparison of some basic demographic indicators of a few Asian countries for 2017. It indicates that infant mortality rate is higher in Pakistan as compared to other countries, even higher than Bangladesh, Nepal and India. The life expectancy at birth is slightly higher in China, Srilanka, Bangladesh and Thailand.

Table D-II: **Basic Health Indicators, Pakistan and Other Countries of Region**

Country	Life Expectancy (year 2017)	Infant Mortality Rate per 1000 (year 2017)	Under 5 Mortality Rate per 1000 (year 2017)	Maternal Mortality Rate Per 100000 (2015)	Population Growth Rate (%) 2017
Pakistan	**67**	**61**	**75**	**178**	**2.0**
India	69	32	39	174	1.1
Bangladesh	73	27	32	176	1.0
Sri Lanka	75	08	09	30	1.1
Nepal	71	28	34	258	1.1
Bhutan	71	26	31	148	1.2
China	76	08	09	27	0.6
Malaysia	75	07	08	40	1.4
Indonesia	69	21	25	126	1.1
Philippines	69	22	28	114	1.5
Thailand	75	08	10	20	0.3

Source:- World Bank

D-III   Family Planning

The Family Planning Programme in the country was first introduced in 1953 by a non-governmental organization " Family Planning Association of Pakistan". However, the Population Welfare Programme in the public sector has been operating since 1960. The achievement of family planning programme has been modest but seem to be attracting more people in matrimonial bond. The last population census indicates decline in fertility as intercensal growth rate decreased from 3.06 during 1972-81 to 2.4 during 1998-2017.

At present the population welfare programme is operating both in the public and private sectors and a net-work of service delivery out-lets of Ministries of Population Welfare and Health as well as Social Marketing of Contraception (Private Sector) is providing family planning services to the desirous clients.

D-III.i   Knowledge of Methods

The knowledge of specific method has substantially increased during last few years. According to "Pakistan Demographic and Health Survey" conducted in 2006-07, the knowledge of at least one method was 95.9 percent which has increased to 98 percent in 2017-18. Table below (D-III) presents method specific knowledge of currently-married women aged 15-49 years.

Table D-III: Currently Married Women age 15-49 by Knowledge of Specific Method

(Percent)

Contraceptive Method	PRHFPS 2000-01	SWRHFPS 2003	PDHS 2006-07	PDHS 2012-13	PDHS 2017-18
Any Method	95.7	95.4	95.9	98.9	98.1
Female Sterilization	88.8	85.9	86.7	90.9	88.2
Male Sterilization	31.6	41.5	40.7	51.0	35.7
Injectables	90.2	88.2	89.5	95.5	92.7
IUD	84.4	82.1	74.8	86.0	81.1
Pill	91.1	90.7	91.7	95.4	93.0
Condom	69.9	65.2	68.1	82.3	84.2
Implants	19.9	26.9	32.1	33.6	52.3
Rytehm	23.8	25.4	49.2	41.9	46.3
Withdrawal	42.4	35.7	48.9	67.1	72.4
Other Method	1.9	1.7	2.9	1.8	0.9

Source:-   National Institute of Population Studies

D-III.ii Contraceptive Performance and Use

The population welfare programme in the country is providing services of contraception through public or private sector out lets. The modern methods like pills, IUD, injectable, Sterilization, Condom are being dispensed to the visiting clients at the service delivery points. The performance of contraceptive delivery services through population welfare programme is given in table D-IV. According to the latest survey conducted in 2017-18, the contraceptive prevalence rate among the currently married women aged 15-49 years was 34.2 percent. Table below gives contraceptive prevalence rates by method.

Table D-IV: Current Contraceptive Prevalence Rates by Method and Sources

(Percent)

Method	PFFPS 1996-97	PRHFPS 2000-01	SWRHFPS 2003	PDHS 2006-07	PDHS 2012-13	PDHS 2017-18
Any Method	23.7	27.6	32.1	29.6	35.4	34.2
Method for Women	12.5	-	18.7	-	-	-
Pill	1.6	1.9	3.1	2.1	1.6	1.7
IUD	3.4	3.5	4.4	2.3	2.3	2.1
Injectables	1.4	2.6	3.4	2.3	2.7	2.5
Vaginal Methods	0.1	0.0	-	-	-	-
Female Sterilization	6.0	6.9	7.5	8.2	8.7	8.8
Implant	-	-	0.3	0.1	-	0.4
Method for men	8.8	-	11.5	-	-	-
Condom	4.2	5.5	6.4	6.8	8.9	9.2
Withdrawl	4.6	5.3	4.9	4.1	8.6	8.0
Male Sterilization	-	-	0.2	0.1	0.3	-
Method for either use	2.4	-	2	-	-	0.3
Periodic Abstinence	1.9	1.6	1.7	-	-	-
Other	0.5	0.5	0.3	0.2	0.1	0.1
Rythm	-	-	-	3.6	0.7	1.0

Source:- National Institute of Population Studies

D-IV   Extended Programme of Immunization (EPI)

This programme was launched in 1979 on a very comprehensive scale with the prime objective to reduce morbidity and mortality resulting from six deadly diseases (Polio, Diphtheria, Whooping Cough, Tetanus, Measles and Tuberculosis) through immunizing children of less than one year of age and Tetanus immunization to all women of the child-bearing age. The programme extends service delivery from all health facilities in public and private sectors and by special out reach and mobile approach. Twice in a year, special campaigns are launched to boost up immunization coverage in the country. The data on immunization is not easy to collect or interpret as coverage is often reported on the basis of respondent's recollection than written records. The service statistics also falls short of adequacy and reliability.

D-V   COVID-19

1.   The first human case of COVID-19 was reported officially in Wuhan city of China in December, 2019 which spread across the country to worldwide with the high rate. WHO on March 11 declared COVID-19 a pandemic. Since then, the virus has engulfed the entire world, disrupting the supply chains and paralyzing the continents. The pandemic is not only inflicting unprecedented damage to human lives but it has also taken a heavy toll on global economic activity. In particular, various necessary measures to control the spread has brought much of the global economic activity to a halt. Consequently, countries are now facing multiple crises, a health crisis, a financial crisis, and a collapse in commodity prices.

2.   On one hand, the pandemic has put the whole world in a Lockdown and changed the dynamics of ongoing and future economic activities, while on the other, the pandemic wiped out any mentionable economic performance of any economy. "The Lockdown", is shaping up into the worst crises since The Great Depression of 1930s.

3.   Global value chains have been disrupted stock and commodity prices are falling around the world. Long term bond yields are heading south in fear of global recession. Airlines and tourism business are facing massive losses. Most of these businesses are SMEs, there will be loss of employment and small business

owners will faced reduced liquidity. Many businesses face problem in managing the cash flow. In this scenario, key focus areas of the government are health, social safety industry and trade etc. The government is constantly monitoring the COVID-19 situation in the country and taking all necessary steps to control the adverse effect on economy. The World Economic Outlook (April, 2020) projects global growth to contact sharply by 3 percent in 2020 and the loss to global GDP over 2020 and 2021 could be around 9 trillion dollars due to the pandemic crisis. This is the first time in hundred years that the world in facing a rapidly spreading the fatal virus. For which no authentic prevention/treatment to overcome the pandemic. No country is safe from the pandemic until a specific vaccine is available against the virus.

4.   Pakistan also follow rigorous measure like designed special hospitals, laboratories for testing, quarantine facilities, awareness campaign and smart lock down to control the spread of virus in the affected areas. The government has constituted a high-level National Coordination Committee (NCC) headed by the Prime Minister that evaluates the evolving situation on day to day basis to effectively curb the spread of the virus in the country. The National Disaster Management Authority (NDMA) and NHSRC have leading roles in combating the spread of a pandemic. A Command and Control Centre has also been established to ensure effective coordination among the federal and provincial governments to control COVID-19.

5.   The disease outbreak information management system has been strengthened, and a comprehensive hospital information management system has been ensured as the basis for the early detection of outbreaks. Disease surveillance & Response Units (DSRU) has also been strengthened at the district level and collaborated with Emergency Operations Centres (EOC) at the provincial level. Hospitals and laboratories in the major cities have been designated to collect the sample from suspected cases on bio-safety and bio-security standards. Quarantine facilities have been established all over the country to prevent the spread of the pandemic.

6.   The pandemic was confirmed to have reached Pakistan on 26th February, 2020, on the same day another case confirmed by the Pakistan Federal Ministry of Health in Islamabad and within fifteen days the total confirmed cases of COVID-19 reached to twenty. When the first patient in Karachi tested positive while returning from Iran. Since then, the pandemic has spread through foreign and domestic transfusion. However, due to timely measures taken by the government in collaboration with provinces, the outbreak has so far been prevented from getting worse. Till August 18, 2020, so fare 290,958 confirmed cases with 272,804 recoveries and 6,209 deaths recorded in the country. Most of the confirmed cases are reported in the Sindh province i.e 127,060 as compare to other provinces. Punjab comes after the Sindh where the total cases are reported as 95800 till 18th August 2020 and least cases are reported in Azad Jammu & Kashmir. The government is employing available public, community, and private sector capacity to rapidly scale up the health system to prevent the spread of COVID-19

Table D-V: Province wise detail of COVID-19 from March, 2020 to 18th August-2020

	Confirmed Cases	Recoveries	Active Cases	Deaths
Punjab	95800	90210	3404	2186
Sindh	127060	120493	4224	2343
Balochistan	12403	11273	991	139
Khyber Pakhtunkhawa	35468	32711	1515	1242
Azad Kashmir	2219	2057	101	61
Gilgit-Baltistan	2583	2224	296	63
Islamabad	15425	13836	1414	175
Total	**290958**	**272804**	**11945**	**6209**

The share wise distribution of COVID-19 confirmed cases can be seen in Figure 10(a). It indicates that the most of cases are reported in Sindh and Punjab comes after the Sindh. Figure 10(b) shows the % share deaths reported by area wise. It indicates that most of deaths are reported in Sindh Province.

Figure: D-10(a): Confirmed Cases of COVID-19 till 18th August 2020
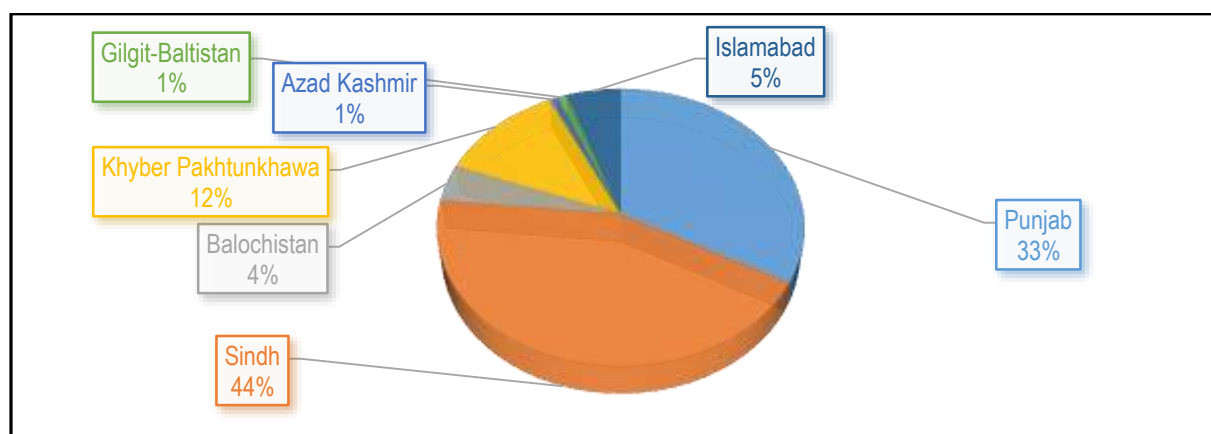
Figure: D-10(b): Deaths in COVID-19 till August, 2020
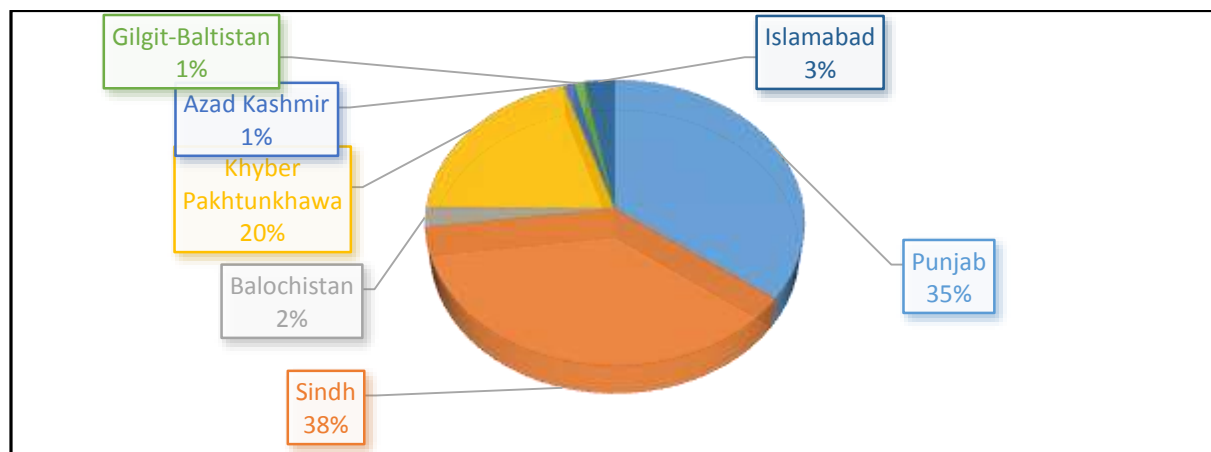
Table D-01 Literacy Rates (10 years & above) by Province, Sex and Area

Year/Area	Total			Urban			Rural		
	Both sex	Male	Female	Both sex	Male	Female	Both sex	Male	Female
PAKISTAN									
2008-09	57	69	45	74	81	67	48	63	33
2010-11	58	69	46	74	81	67	49	63	35
2011-12	58	70	47	75	82	68	49	64	35
2012-13	60	71	48	76	82	69	51	64	37
2013-14	58	70	47	74	81	66	49	63	36
2014-15	60	70	49	76	82	69	51	63	38
2015-16	58	70	48	74	81	68	49	63	36
2018-19	60	71	49	74	80	67	51	65	38
PUNJAB									
2008-09	59	69	50	76	82	71	51	63	39
2010-11	60	70	51	76	80	71	53	64	42
2011-12	60	70	51	75	80	70	52	65	41
2012-13	62	71	54	77	82	72	55	66	45
2013-14	61	71	52	76	82	71	53	65	43
2014-15	63	71	55	77	82	73	55	65	45
2015-16	62	72	54	77	82	73	55	66	44
2018-19	64	73	57	77	82	73	57	67	47
SINDH									
2008-09	59	71	45	73	81	65	43	61	22
2010-11	59	71	46	75	82	68	42	60	22
2011-12	60	72	47	78	85	70	41	58	23
2012-13	60	72	47	77	84	70	42	59	22
2013-14	56	67	43	72	80	63	37	53	21
2014-15	60	70	49	76	82	70	40	55	24
2015-16	55	67	44	73	80	65	36	51	19
2018-19	57	68	44	72	79	64	39	55	21
KHYBER PAKHTUNKHWA									
2008-09	50	69	31	62	76	48	47	67	27
2010-11	50	68	33	63	77	50	48	67	29
2011-12	52	72	35	65	80	51	50	70	31
2012-13	52	70	35	66	78	52	49	69	31
2013-14	53	72	36	68	81	55	49	70	32
2014-15	53	71	35	66	80	52	50	69	31
2015-16	53	72	36	64	77	52	50	70	33
2018-19	57	76	40	67	81	53	55	74	37
BALOCHISTAN									
2008-09	45	62	23	64	78	47	38	57	16
2010-11	41	60	19	61	79	40	35	54	13
2011-12	46	65	23	62	79	44	40	60	16
2012-13	44	62	23	65	81	47	37	55	15
2013-14	43	59	25	59	74	45	36	54	17
2014-15	44	61	25	61	78	42	38	54	17
2015-16	41	56	24	61	76	44	33	48	15
2018-19	40	54	24	56	70	41	34	48	17

Source Pakistan Bureau of Statistics, PSLM
Note:- Due to Census,2017 survey was not conducted in 2016-17 & 2017-18

Table D-02: Number of Institutions, Enrollment and Number of Teachers by Sex and Level of Educational Institutions

Institute/Year	Number of Institutions			Enrollment (000. No.)		
	Total	Male	Female	Total	Male	Female
	1	2	3	4	5	6
Primary Schools						
1947-48	8,413	6,864	1,549	770	660	110
1974-75	51,744	36,066	15,678	4,971	3,541	1,430
1984-85	73,812	52,261	21,551	6,828	4,576	2,252
1994-95	139,634	95,234	44,400	14,264	8,626	5,638
1999-00	162,076	107,032	55,044	19,148	12,104	7,044
2004-05	157,157	98,414	58,743	23,051	13,218	9,833
2009-10	157,466	96,894	60,572	27,534	15,328	12,206
2011-12	154,650	97,608	57,042	28,191	16,245	11,946
2012-13	159,680	99,620	60,060	28,075	15,709	12,366
2013-14	157,936	97,623	60,313	28,709	16,027	12,682
2014-15	165,914	99,901	66,013	29,436	16,395	13,041
2015-16	164,630	99,316	65,314	31,342	17,467	13,875
2016-17	168,864	109,793	59,071	33,123	18,350	14,773
2017-18	172,519	99,053	73,466	35,506	19,798	15,708
2018-19 (P)	175,293	98,547	76,746	37,407	20,837	16,570
Middle Schools						
1947-48	2190	2037	153	221	200	21
1974-75	4,713	3,447	1,266	1,196	917	279
1984-85	6,132	4,315	1,817	1,805	1,359	446
1994-95	12,571	6,888	5,683	3,816	2,469	1,347
1999-00	18,435	10,868	7,567	4,112	2,497	1,615
2004-05	30,418	15,662	14,756	4,612	2,727	1,885
2009-10	41,340	21,793	19,547	5,504	3,167	2,337
2011-12	41,945	20,928	21,017	6,020	3,447	2,573
2012-13	42,147	20,729	21,418	6,188	3,535	2,653
2013-14	42,920	21,863	21,057	6,461	3,663	2,798
2014-15	44,818	22,423	22,395	6,582	3,739	2,843
2015-16	45,680	18,682	26,998	6,922	3,896	3,026
2016-17	49,090	21,171	27,919	6,996	3,908	3,088
2017-18	46,665	23,204	23,461	7,362	4,089	3,273
2018-19 (P)	47,665	23,756	23,909	7,641	4,215	3,426
Secondary Schools						
1947-48	454	372	82	62	54	8
1974-75	3,199	2,288	911	504	390	114
1984-85	4,920	3,566	1,354	702	534	168
1994-95	10,005	6,626	3,379	1,611	1,082	529
1999-00	13,211	9,601	3,610	1,817	1,147	670
2004-05	17,233	11,644	5,589	2,074	1,265	809
2009-10	25,548	14,694	10,854	2,789	1,678	1,111
2011-12	29,426	17,534	11,892	2,942	1,754	1,188
2012-13	30,702	18,095	12,607	3,103	1,847	1,256
2013-14	31,437	18,535	12,902	3,322	1,977	1,345
2014-15	32,113	18,722	13,391	3,724	2,185	1,539
2015-16	32,589	16,639	15,950	3,886	2,261	1,625
2016-17	32,456	17,476	14,980	3,863	2,267	1,596
2017-18	32,246	18,402	13,844	4,083	2,341	1,742
2018-19 (P)	32,725	18,611	14,114	4,339	2,471	1,868

i) Primary Schools include pre-primary schools data as well
ii) Secondary Schools include both high school and secondary vocational institutions
iii) Schools include Public & Private sector data
iv) P = Provisional data
 P= Provisional

Table D-02: Number of Institutions, Enrollment and Number of Teachers by Sex and Level of Educational Institutions

Institute/Year	Number of Institutions			Enrollment (000. No.)		
	Total	Male	Female	Total	Male	Female
	1	2	3	4	5	6
Arts and Science Colleges						
1947-48	40	35	5	-	-	-
1954-55	77	58	19	43	37	6
1974-75	361	265	96	208	150	58
1984-85	467	314	153	373	256	117
1994-95	678	421	257	704	428	276
1999-00	889	531	358	792	420	372
2004-05	1174	659	515	1009	514	495
2009-10	1497	824	673	1306	689	617
2011-12	1556	838	718	1316	686	630
2012-13	1610	873	737	1470	794	676
2013-14	1646	897	749	1544	828	716
2014-15	1731	919	812	1620	872	748
2015-16	1806	937	869	1645	857	788
2016-17	1934	993	941	1757	910	847
2017-18	1994	1019	975	1844	956	888
2018-19 P	2326	1239	1087	2032	1072	960
Professional Colleges						
1947-48	-	-	-	4.4	4.1	0.3
1954-55	24	24	0	8.2	7.4	0.8
1964-65	45	40	5	17.4	14.4	3.0
1974-75	83	75	8	44.7	36.6	8.1
1984-85	99	91	8	59.2	49.5	9.7
1994-95	167	157	10	101.0	73.3	27.7
1999-00	324	309	15	161.0	120.0	41.0
2004-05	408	387	21	186.8	138.5	48.3
2009-10	512	487	25	229.6	162.6	67.0
2011-12	549	521	28	208.6	144.9	63.7
2012-13	534	506	28	196.6	134.1	62.5
2013-14	616	570	46	223.3	155.4	67.9
2014-15	714	659	55	258.7	181.0	77.7
2015-16	717	649	68	243.8	172.1	71.7
2016-17	712	652	60	293.6	197.2	96.4
2017-18	722	639	83	319.1	222.8	96.3
2018-19	668	606	62	294.0	207.2	86.8
Universities						
1947-48	2	(a)	(a)	0.6	0.5	0.1
1954-55	4	(a)	(a)	2.0	1.9	0.1
1964-65	6	(a)	(a)	13.2	10.5	2.9
1974-75	10	(a)	(a)	21.4	16.9	4.5
1984-85	21	(a)	(a)	54.0	45.6	8.4
1994-95	25	(a)	(a)	80.6	59.5	21.1
1999-00	26	25	1	114.0	86.6	27.4
2004-05	52	49	3	234.1	145.0	89.1
2009-10	72	67	5	357.5	230.1	127.4
2011-12	76	70	6	477.0	303.8	173.2
2012-13	84	76	8	559.0	350.2	208.8
2013-14	91	83	8	658.5	408.0	250.5
2014-15	98	87	11	737.2	455.1	282.1
2015-16	104	92	12	779.0	467.9	311.1
2016-17	104	94	10	837.6	506.1	331.5
2017-18	115	102	13	893.3	527.5	365.7
2018-19	115	102	13	996.2	579.9	416.3

Note:- (a) There is co-education system in universities
Arts & Science colleges, Professional Colleges & Universities contain public sector data only.
P = Provisional

Table D-02: Number of Institutions, Enrollment and Number of Teachers by Sex and Level of =Educational Institutions

Institute/Year	Number of Teachers (000 No.)			Student Per Teacher		
	Total	Male	Female	Total	Male	Female
	7	8	9	10	11	12
Primary Schools						
1947-48	17.8	15.4	2.4	43	43	46
1974-75	125.5	83.1	42.4	40	43	34
1984-85	179.0	121.8	57.2	38	38	39
1994-95	375.2	228.5	146.7	38	38	38
1999-00	402.4	232.6	169.8	48	52	42
2004-05	450.1	243.6	206.5	51	54	48
2009-10	441.7	232.8	208.9	62	66	58
2011-12	427.4	228.8	198.6	66	71	60
2012-13	428.8	219.7	209.1	66	71	59
2013-14	420.1	210.6	209.5	68	76	60
2014-15	430.9	212.0	218.9	68	77	60
2015-16	444.6	218.3	226.3	70	80	61
2016-17	475.2	216.3	258.9	70	85	57
2017-18	522.4	238.4	284.0	68	83	55
2018-19 (P)	545.2	240.9	304.3	69	80	58
Middle Schools						
1947-48	12.0	11.2	0.8	18	18	26
1974-75	43.5	30.7	12.8	27	30	22
1984-85	57.4	40.4	17.0	31	34	26
1994-95	144.6	63.7	80.9	26	39	17
1999-00	193.9	76.3	117.6	21	33	14
2004-05	246.7	95.2	151.5	19	29	12
2009-10	331.5	114.9	216.6	17	28	11
2011-12	351.4	117.5	233.9	17	29	11
2012-13	362.6	121.1	241.5	17	30	11
2013-14	364.8	121.2	243.6	18	30	11
2014-15	380.8	124.8	256.0	18	30	11
2015-16	394.2	123.9	270.3	17	30	11
2016-17	455.4	129.7	325.7	18	31	11
2017-18	448.1	128.3	319.8	15	30	9
2018-19 (P)	469.2	128.7	340.5	16	32	10
Secondary Schools						
1947-48	6.8	6.0	0.8	9	9	10
1974-75	53.6	37.7	15.9	9	10	7
1984-85	82.7	57.3	25.4	8	9	7
1994-95	234.5	130.1	104.4	7	8	5
1999-00	257.1	139.3	117.8	7	8	6
2004-05	290.8	150.3	140.5	7	8	6
2009-10	457.3	224.8	232.5	6	8	5
2011-12	469.4	195.9	273.5	6	9	4
2012-13	501.8	212.0	289.8	6	9	4
2013-14	511.0	212.2	298.8	7	9	5
2014-15	528.2	219.1	309.1	7	10	5
2015-16	538.8	218.9	319.9	7	10	5
2016-17	570.6	226.1	344.6	7	10	5
2017-18	574.0	227.9	346.1	7	10	5
2018-19 (P)	591.2	232.9	358.3	7	10	5

Table D-02: Number of Institutions, Enrollment and Number of Teachers by Sex and Level of Educational Institutions

Institute/Year	Number of Teachers (000 No.)			Student Per Teacher		
	Total	Male	Female	Total	Male	Female
	7	8	9	10	11	12
Arts and Science Colleges						
1964-65	5.4	4.0	1.4	24	26	17
1974-75	9.6	7.0	2.6	22	21	22
1984-85	14.0	9.7	4.3	27	26	27
1994-95	22.8	14.7	8.1	31	29	34
1999-00	27.7	17.1	10.6	29	25	35
2004-05	31.0	18.0	13.0	33	29	38
2009-10	39.6	23.5	16.0	33	29	38
2011-12	40.3	23.1	17.2	33	30	37
2012-13	44.3	25.7	18.6	33	31	36
2013-14	44.7	25.9	18.8	34	32	38
2014-15	46.4	27.4	19.0	35	32	39
2015-16	49.7	28.6	21.1	33	30	37
2016-17	56.8	31.0	25.8	31	29	33
2017-18	55.7	30.0	25.7	33	32	35
2018-19 P	60.7	33.4	27.3	34	32	35
Professional Colleges						
1964-65	1.2	1.0	0.2	15	14	15
1974-75	2.6	2.1	0.5	17	17	16
1984-85	3.9	3.3	0.6	15	15	16
1994-95	6.6	5.2	1.4	15	14	19
1999-00	9.0	7.2	1.8	18	17	23
2004-05	10.0	8.0	2.0	19	18	24
2009-10	14.1	10.3	3.8	16	16	18
2011-12	14.6	10.4	4.2	14	14	15
2012-13	13.3	9.0	4.3	15	15	15
2013-14	16.6	11.3	5.3	14	13	14
2014-15	18.3	12.3	6.0	14	15	13
2015-16	17.6	11.8	5.8	14	15	12
2016-17	19.4	12.6	6.8	15	16	14
2017-18	21.1	14.3	6.8	15	16	14
2018-19	21.3	14.3	6.9	14	14	12
Universities						
1964-65	1.3	1.2	0.1	10	9	27
1974-75	2.5	2.2	0.3	9	8	15
1984-85	3.6	3.1	0.5	15	15	17
1994-95	5.3	4.4	0.9	15	14	23
1999-00	5.9	4.7	1.2	19	18	23
2004-05	13.2	9.6	3.6	18	15	25
2009-10	19.6	13.8	5.8	18	17	22
2011-12	23.0	15.8	7.2	21	19	24
2012-13	23.5	15.8	7.7	24	22	27
2013-14	32.0	21.0	11.0	21	19	23
2014-15	33.2	21.8	11.4	22	21	25
2015-16	34.6	22.3	12.3	23	21	25
2016-17	36.8	23.6	13.2	23	21	25
2017-18	37.6	23.1	14.5	24	23	25
2018-19	39.3	24.4	14.9	25	24	28

Source:- 1 Central Bureau of Education   2. Pakistan Bureau of Statistics
3. Academy of Educational Planning & Management, Ibd.   4. Provincial Bureaus of Statistics.
Note:-   Professional Colleges include Agriculture, Engineering, Medical, Commerce, Law, Home Economics, Education, Educational
          Research, Physical Education, Tibb, Homeopathic and Fine Arts Institutions.   P = Provisional

Table D-03: Professional Colleges by Type and Sex

(Number)

Year	All Professional Colleges Total	All Professional Colleges Female	Agricu- lture (a) Total	Engin- eering (b) Total	Medical (c) Total	Medical (c) Female	Comm- erce (d) Total	Law Total	Home Econo- mics Total	Education (e) Total	Education (e) Female	Others (f) Total
1999-00	324	15	5	11	28	2	80	50	4	22	4	124
2000-01	352	18	5	12	27	2	84	50	4	22	4	148
2001-02	374	20	5	13	28	2	87	53	4	22	4	162
2002-03	382	19	4	13	29	2	88	54	4	22	4	168
2003-04	416	20	5	16	30	2	100	56	4	22	4	183
2004-05	408	21	4	15	30	2	100	56	4	20	4	179
2005-06	432	23	4	13	31	2	105	58	4	23	4	194
2006-07 *	416	19	4	*3	33	3	95	58	4	21	3	198
2007-08	447	23	4	2	33	3	117	62	4	24	3	201
2008-09	460	21	4	2	33	3	128	62	4	24	1	203
2009-10	512	25	4	2	38	3	164	62	4	27	2	211
2010-11	598	39	4	3	35	2	241	62	4	40	3	209
2011-12	549	28	4	2	41	2	215	47	4	43	2	193
2012-13	534	28	4	2	44	2	242	42	4	39	3	157
2013-14	616	46	4	2	50	2	254	49	4	74	18	179
2014-15	714	55	4	2	51	3	303	59	4	92	16	199
2015-16	717	68	4	2	52	3	313	58	4	92	18	192
2016-17	712	60	4	2	64	3	291	70	4	78	17	199
2017-18	722	83	4	3	65	3	272	85	4	81	25	208
2018-19	668	62	4	3	68	4	238	83	5	70	18	197

Source:- i) Central Bureau of Education   ii) Provincial Bureaus of Statistics
Note:-
(a)   Includes Forestry and Animal Husbandry Colleges
(b)   Includes colleges of Textile Technology.
(c)   Includes colleges of Dentistry and Institute of Hygiene and Preventive Medicines
(d)   Includes Institute of Business Administration, University of Karachi.
(e)   Includes Institutes of Educational Research of the University of Punjab, Sindh and also Colleges of Physical Education.
(f)   Includes Tibb, Homoeopathic and Fine Arts.
* Decrease in Number of Engineering Colleges is due to excluding of Polytechnic Colleges of Punjab province.

Table D-04: Teachers in Professional Colleges by Type and Sex

(Number)

Year	All Types		Agriculture		Engineering		Medical		Commerce	
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
2004-05	9,961	2,048	126	5	873	36	2,805	684	1,908	194
2005-06	11,158	2,706	82	3	843	29	3,558	1,114	2,350	310
2006-07	11,049	2807	111	3	162	10	3,829	1,133	2,380	323
2007-08	12,211	3174	124	8	91	16	3,634	984	3,142	651
2008-09	1,206	3,533	124	8	91	16	3,869	1,130	3,114	719
2009-10	14,127	3,835	125	8	85	20	4,796	1,316	3,791	761
2010-11	14,911	3,857	126	8	125	6	4,253	1,307	5,058	1,034
2011-12	14,630	4,242	148	9	54	3	5,069	1,970	4,432	902
2012-13	13,249	4,256	126	10	65	4	5,630	2,209	4,212	874
2013-14	16,606	5,334	150	11	79	4	6,855	2,824	4,481	930
2014-15	18,337	6,008	160	30	89	6	7,155	3,073	5,114	1,221
2015-16	17,645	5,762	158	12	100	6	6,895	2,963	5,216	1,174
2016-17	19,454	6,820	171	12	89	6	8,393	3,810	4,454	1,052
2017-18	21,081	6,836	105	13	182	10	8,734	3,840	4,639	1,129
2018-19	21,290	6,938	183	17	163	9	9,404	3,974	4,443	1,129

Year	Law		Home Economics		Education		All Others (a)	
	Total	Female	Total	Female	Total	Female	Total	Female
2004-05	978	127	232	230	510	225	2,529	547
2005-06	955	127	255	253	612	229	2,503	641
2006-07	965	161	243	241	520	202	2,839	734
2007-08	968	161	227	225	455	211	3,570	918
2008-09	934	174	213	213	400	203	3,461	1,070
2009-10	986	167	224	224	570	320	3,550	1,019
2010-11	1,106	159	218	218	685	385	3,340	740
2011-12	946	162	228	228	729	387	3,024	581
2012-13	631	113	240	240	624	323	1,721	483
2013-14	892	164	223	223	1,138	561	2,788	617
2014-15	839	143	232	232	1,510	686	3,238	617
2015-16	604	132	243	242	1,415	641	3,014	592
2016-17	1,142	224	246	246	1,528	847	3,431	623
2017-18	1,639	290	251	251	1,018	373	4,513	930
2018-19	1,311	254	233	233	989	240	4,564	1,082

Source:- Provincial Bureaus of Statistics
(a)   = All others include Tibb, Homoeopathic and Fine Arts.

Table D-05: Number of Secondary Vocational Institutions by Kind

Year	Commerce/ Commercial	Industrial / Vocational	Polytechnics / Technical
1999-00	216	194	55
2000-01	218	196	71
2001-02	200	192	70
2002-03	164	209	78
2003-04	181	235	87
2004-05	178	234	91
2005-06	180	220	103
2006-07	182	222	104
2007-08	181	234	98
2008-09	180	265	100
2009-10	187	282	125
2010-11	186	284	134
2011-12	188	289	136
2012-13	188	346	135
2013-14	191	351	136
2014-15	193	366	136
2015-16	193	318	173
2016-17	196	322	222
2017-18	196	326	185
2018-19	203	541	170

Source:- i). Provincial Bureaus of Statistics
       ii). Provincial Directorates of Technical Education

Table D-06: Enrollment in Secondary Vocational Institutions by Kind and Sex

(Number)

Year	Commerce/Commercial			Industrial/Vocational			Polytechnic/Technical		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1999-00	22,947	22,283	664	8,305	1,933	6,372	33,350	30,782	2,568
2000-01	22,305	21,612	693	8,053	1,719	6,334	31,435	28,760	2,675
2001-02	24,750	24,175	575	,412	1,549	6,863	31,423	28,597	2,826
2002-03	24,270	23,579	691	10,596	3,452	7,144	33,663	30,943	2,720
2003-04	26,924	26,002	922	17,424	7,611	9,813	33,122	30,227	2,895
2004-05	39,180	37,846	1,334	21,885	9,834	12,051	46,292	42,521	3,771
2005-06	54,570	52,514	2,056	33,566	12,529	21,037	60,937	56,222	4,715
2006-07	58,796	56,777	2,019	23,413	6,644	16,769	62456	58,601	3,855
2007-08	68,823	65,830	2,993	28,974	8,531	20,443	73,626	68,959	4,667
2008-09	66,055	63,218	2,837	25,396	10,679	14,717	69,382	65,189	4,193
2009-10	66,060	63,882	2,178	29,489	12,007	17,482	79,572	75,672	3,900
2010-11	64,192	61,638	2,554	19,154	6,347	12,807	77,291	73,469	3,822
2011-12	64,047	58,631	5,416	22,601	6,023	16,578	74,456	71,982	2,474
2012-13	60,176	57,806	2,370	33,216	8,829	24,387	78,272	74,643	3,629
2013-14	63,154	60,658	2,496	31,295	8,955	22,340	85,217	81,457	3,760
2014-15	45,234	43,082	2,152	36,104	9,123	26,981	101,144	96,836	4,308
2015-16	62,790	60,127	2,663	36,391	8,899	27,492	95,992	91,530	4,462
2016-17	63,864	60,547	3,317	41,152	6,547	34,605	130,608	122,675	7,933
2017-18	64,269	61,404	2,865	36,866	5,882	30,984	96,572	91,358	5,214
2018-19	62,396	58,981	3,415	48,528	23,544	24,984	83,915	79,043	4,872

Source:- i)   Provincial Bureaus of Statistics
ii)   Provincial Directorates of Technical Education

Table D-07: Medical Personnel in Pakistan

Year	Doctors	Dentists	Nurses	Qualified Lady Health visitors	Registered Midwives	Pharmacists
1995	71,718	2,747	22,299	4,185	20,910	5,820
1996	75,239	2,933	24,776	4,407	21,662	6,015
1997	79,474	3,154	28,661	4,589	21,840	6,855
1998	83,696	3,434	32,938	4,959	22,103	7,723
1999	88,117	3,857	35,979	5,299	22,401	8,515
2000	92,838	4,165	37,528	5,443	22,525	9,620
2001	97,260	4,612	40,019	5,669	22,711	10,515
2002	102,644	5,058	44,520	6,397	23,084	11,320
2003	108,164	5,531	46,331	6,599	23,318	12,120
2004	113,309	6,128	48,446	6,741	23,559	13,330
2005	118,113	6,734	51,270	7,073	23,897	15,225
2006	123,146	7,438	57,646	8,405	24,692	16,565
2007	128,042	8,215	62,651	9,302	25,261	18,320
2008	133,925	9,012	65,387	10,002	25,534	19,215
2009	139,488	9,822	69,313	10,731	26,225	20,350
2010	144,901	10,508	73,244	11,510	27,153	21,565
2011	152,368	11,649	77,683	12,621	30,722	22,850
2012	160,880	12,692	82,119	13,678	31,503	23,975
2013	167,759	13716	86,183	14,388	32,677	25,340
2014	175,223	15,106	90,276	15,325	33,687	26,522
2015	184,711	16,652	94,766	16,448	34,668	29,536
2016	195,896	18,333	99,228	17 ,384	36,326	33,540
2017	208,007	20,463	103,777	18,400	38,060	36,931
2018	220,829	22,595	108,474	19,910	40,272	40,207
2019	233,261	24,930	112,123	20,565	41,810	42,016

Source:- i. PMDC and Nursing Council
          ii. Pakistan Pharmacy Council.

Table D-08: Hospitals, Dispensaries, Maternity & Child Health Centres and Beds

(Number)

Year (As on Ist January)	Hospitals	Dispen-saries	Maternity and Child Health Centres	Rural Health Centre	Basic Health Unit/Sub Health Centre	T.B. Clinic	Total Beds
1995	827	4,253	859	498	4,986	260	85,805
1996	858	4,513	853	505	5,143	262	88,454
1997	865	4,523	853	513	5,121	262	89,929
1998	872	4,551	852	514	5,155	263	90,659
1999	879	4,583	855	530	5,185	264	92,174
2000	876	4,635	856	531	5,171	274	93,907
2001	907	4,625	879	541	5,230	272	97,945
2002	906	4,590	862	550	5,308	285	98,264
2003	906	4,554	907	552	5,290	289	98,684
2004	916	4,582	906	552	5,301	289	99,908
2005	919	4,632	907	556	5,334	289	101,490
2006	924	4,712	906	560	5,336	288	102,073
2007	945	4,755	903	562	5,349	290	103,285
2008	948	4,794	908	561	5,310	293	103,037
2009	968	4,813	906	572	5,345	293	103,708
2010	972	4,842	909	577	5,344	304	104,137
2011	980	5,039	851	579	5,449	345	107,537
2012	1,092	5,176	628	640	5,478	326	111,802
2013	1,113	5,413	687	667	5,471	329	118,378
2014	1,143	5,448	670	669	5,438	334	118,170
2015	1,172	5,695	733	684	5,478	339	119,548
2016	1,243	5,971	755	668	5,473	345	124,821
2017	1,264	5,654	727	688	5,505	431	131,049
2018	1,279	5,671	747	686	5,527	441	132,227
2019	1,282	5,743	752	670	5,472	412	133,707

Source :- i. Provincial Health Directorate
ii. Punjab Bureau of Statistics

Table D-09: Electricity Balances (Public Utilities only)

(GWh)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Total Generation	95091	96122	103670	106966	111300	123118	131275	128532
Auxiliary Consumption	2382	3340	3767	3984	4123	4502	3793	2792
Net purchases from PASMIC	(168)	4	9	21	0	0	0	0
Imported	274	375	419	443	463	496	556	487
Net Supply	92815	93161	100340	103445	107640	119112	128037	126226
Consumption	76761	76789	83409	85818	90431	95530	106927	109461
T & D Losses	16054	16372	16932	17627	17209	23582	21110	16765
(as % of Net Supply)	17.3%	17.6%	16.9%	17.0%	16.0%	19.8%	16.5%	13.3%

Source:- Pakistan Energy Year Book-2019 published by Hydrocarbon Development Institute of Pakistan

Table D-10: Natural Gas Reserves as on June 30th, 2019

(Trillion Cubic Feet)

	Non Associated Gas Fields	Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
1	Savi Ragha	BGBalochistan	0.03000		0.03000	1159
2	Zamzama	OPPLSindh	1.77509	1.63154	0.14355	805
3	Rodho (L.G)	Dewan Petr. Punjab	0.27486	0.02798	0.24688	1000
4	Rodho (Chiltan)	"	0.52055	0.05474	0.46581	875
5	Badhra	Eni PakSindh	0.31200	0.24900	0.06300	920
6	Bhit	"	1.68200	1.63800	0.04400	840
7	Kadanwari	"	0.68300	0.67100	0.01200	882
8	Lundali	"	0.00211	0.00211		777
9	Aqeeq	MPCL Sindh	0.00325	0.00187	0.00139	1035
10	Mari HRL	"	8.72000	5.52450	3.19550	735
11	Mari SML/SUL	"	0.08700	0.03224	0.05476	860
12	Mari PKL	"	0.05970	0.02080	0.03890	710
13	Mari Deep	"	1.63300	0.19913	1.43387	560
14	Mari SML/SUL (SML-1I)	"	0.02120	0.01706	0.00414	865
15	Mari SML/SUL (Shahbaz)	"	0.02760		0.02760	840
16	Mari SML/SUL (Shaheen)	"	0.06790		0.06790	865
17	Mari-Tipu	"	0.11890	0.00003	0.11887	470
18	Kalabagh	"	0.01336	0.00376	0.00960	1115
19	Koonj	"	0.00395	0.00388	0.00007	870
20	Sujawal	"	0.02146	0.01502	0.00644	1020
21	Sujjal	"	0.05352	0.02312	0.03041	1035
22	Zarghun South	MPCLBalochistan	0.07672	0.02392	0.05280	923
23	Makori	MOL KP	0.05400	0.05300	0.00100	1109
24	Makori Deep	"	0.01100	0.00400	0.00700	1123
25	Tolanj	"	0.00600	0.00400	0.00200	998
26	Tolanj West	"	0.02700	0.00600	0.02100	1013
27	Manzalai	"	0.51700	0.47100	0.04600	1020
28	Mamikhel	"	0.10700	0.09500	0.01200	1091
29	Maramzai	"	0.57500	0.29800	0.27700	1087
30	Mardankhel	"	0.18100	0.03800	0.14300	1104
31	Aradin	OGDCL Sindh	0.00226		0.00226	851
32	Bagla	"	0.01485	0.00946	0.00539	950
33	Baloch	"	0.00359	0.00234	0.00125	1148
34	Bhal Syedan	OGDCL Punjab	0.00403	0.00343	0.00060	1156
35	Bhambra	OGDCL Sindh	0.03849		0.03849	781
36	Bitrism West	"	0.01954	0.00022	0.01932	1230
37	Bahu	OGDCL Punjab	0.03520	0.03514	0.00006	467
38	Bobi	OGDCL Sindh	0.03453	0.03322	0.00131	1303
39	Chak-2	"	0.04550	0.02981	0.01569	1125
40	Chak-7A	"	0.00241	0.00219	0.00022	1176
41	Chak-63	"	0.01027	0.00486	0.00541	1211
42	Chak-63 SE	"	0.00428	0.00392	0.00036	1261
43	Chak-66	"	0.00137		0.00137	768
44	Chak-66 NE	"	0.00468	0.00125	0.00343	1280

Table D-10: Natural Gas Reserves as on June 30th, 2019

(Trillion Cubic Feet)

	Non Associated Gas Fields	Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
45	Chak-5 Dim South	OGDCL Sindh	0.02763	0.02535	0.00228	1182
46	Chandio	"	0.02084	0.00024	0.02060	1176
47	Chabaro	"	0.02523		0.02523	1080
48	Chhutto	"	0.02354	0.00293	0.02061	1096
49	Dakhni/Deep	OGDCLPunjab	0.40100	0.29635	0.10465	1065
50	Dars	OGDCLSindh	0.01217	0.00476	0.00741	1078
51	Dars Deep	"	0.01184	0.00602	0.00582	1095
52	Dars West	"	0.03640	0.00699	0.02941	1045
53	Daru	"	0.02111	0.01960	0.00151	1168
54	Dachrapur	"	0.02405	0.01316	0.01089	928
55	Dhamraki	"	0.00771	0.00771		1182
56	Dhodak	OGDCLPunjab	0.24995	0.24695	0.00300	1143
57	Dhodak Deep	"				678
58	Gopang	OGDCL Sindh	0.00402	0.00036	0.00366	1254
59	Gundanwari	"	0.02355		0.02355	1275
60	Hakeem Daho	"	0.04792	0.01291	0.03501	1050
61	Hundi	"	0.03223	0.03028	0.00195	860
62	Jand	"	0.01060	0.00047	0.01013	959
63	Jhal Magsi South	OGDCLBalochistan	0.03678		0.03678	934
64	Khamiso	OGDCLSindh	0.00726	0.00196	0.00530	697
65	Kunar Deep	"	0.78820	0.21256	0.57564	1029
66	Kunar West	"	0.07770	0.01922	0.05848	1029
67	Kunar South	"	0.04225	0.00800	0.03425	1066
68	Lala Jamali	"	0.01420	0.00663	0.00757	1331
69	Loti	OGDCLBalochistan	0.42232	0.37538	0.04694	836
70	Maru	OGDCLSindh	0.01376	0.00668	0.00708	787
71	Maru East	"	0.00170	0.00162	0.00008	695
72	Maru South	"	0.00666	0.00522	0.00144	760
73	Mela	OGDCLKP	0.19684	0.05576	0.14108	1170
74	Mithrao	OGDCLSindh				1182
75	Mithri	"	0.00655		0.00655	911
76	Moolan	"	0.01610	0.00056	0.01554	1150
77	Nashpa	OGDCLKP	0.65577	0.21782	0.43795	1130
78	Nim	OGDCLSindh	0.00166	0.00119	0.00047	1233
79	Nim West	OGDCL Sindh	0.00349		0.00349	953
80	Nandpur	OGDCL Punjab	0.16932	0.16655	0.00277	227
81	Norai Jagir	OGDCL Sindh	0.01086	0.01063	0.00023	1202
82	Nur	"	0.01284	0.00168	0.01116	1233
83	Pakhro	"	0.00450	0.00297	0.00153	970
84	Panjpir	OGDCL Punjab	0.05654	0.05622	0.00032	227
85	Pasakhi Deep	OGDCL Sindh	0.46200	0.08372	0.37828	895
86	Pasakhi East	"	0.02660	0.00724	0.01936	1012
87	Pasakhi WD	"	0.03500	0.00029	0.03471	1142
88	Pirkoh	OGDCLBalochistan	1.05735	1.05379	0.00356	870

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Table D-10: Natural Gas Reserves as on June 30th, 2019

(Trillion Cubic Feet)

Non Associated Gas Fields		Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
89	Qadirpur	OGDCL Sindh	4.71760	3.55030	1.16730	887
90	Resham	"	0.00120	0.00102	0.00018	1215
91	Reti	"	0.00991	0.00684	0.00307	763
92	Saand	"	0.01470		0.01470	813
93	Sadkal	OGDCL Punjab	0.07932	0.07687	0.00245	1162
94	Sari	OGDCL Sindh	0.01999	0.01953	0.00046	860
95	Shah	"	0.02030	0.00851	0.01179	1284
96	Shekhan	"	0.00168	0.00168		1040
97	Soghri	"	0.03241	0.01220	0.02021	1050
98	Suleman	"	0.04230		0.04230	873
99	Tando Allah Yar	"	0.01575	0.00878	0.00697	888
100	Tando Allah Yar North	"	0.00157		0.00157	888
101	Tando Allah Yar SW	"	0.02939		0.02939	1023
102	Thal East	"	0.02853		0.02853	767
103	Thal West	"	0.01119		0.01119	925
104	Thora Deep	"	0.03761	0.00794	0.02967	1028
105	Uch	OGDCL Balochistan	5.16000	1.88649	3.27351	425
106	Unar	OGDCL Sindh	0.03080	0.00724	0.02356	1034
107	Zin	OGDCL Balochistan	1.13224		1.13224	517
108	Latif	OMV Sindh	0.39433	0.23644	0.15789	1007
109	Miano	"	0.74899	0.65807	0.09092	997
110	Sawan	"	1.59534	1.51172	0.08362	1007
111	Tajjal	"	0.05500	0.05069	0.00431	1007
112	Ratana	OPL Punjab	0.19950	0.06758	0.13192	1106
113	Aminah	PEL Sindh	0.00970		0.00970	995
114	Ayesha	"	0.00960		0.00960	967
115	Ayesha North	"	0.00850		0.00850	967
116	Badar	"	0.09340	0.07200	0.02140	572
117	Kandra	"	1.85800		1.85800	143
118	Khanpur	"	0.00910	0.00900	0.00010	851
119	Hamza	"	0.00900		0.00900	644
120	Hasan	"	0.07140	0.06870	0.00270	639
121	Sadiq	"	0.00430	0.00330	0.00100	654
122	Zainab	PEL KP	0.00670		0.00670	1201
124	Adhi	PPL Punjab	0.57096	0.31609	0.25487	1200
125	Adhi (Sakessar)	"	0.02360	0.01438	0.00922	1220
126	Adhi South	"	0.04880	0.00065	0.04815	1220
127	Adam	PPL Sindh	0.02790	0.02299	0.00491	879
128	Adam West	"	0.03706	0.02037	0.01669	986
129	Badeel	"	0.03003		0.03003	777
130	Chachar	"	0.02770	0.02312	0.00458	785
131	Faiz	"				750
132	Fazl	"	0.01370		0.01370	1010
133	Hadaf	"	0.04949		0.04949	1102
134	Kandhkot	PPL Sindh	1.98202	1.40634	0.57568	820

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Table D-10: Natural Gas Reserves as on June 30th, 2019

<div align="right">(Trillion Cubic Feet)</div>

	Non Associated Gas Fields	Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
135	Kinza	PPL Sindh	0.00370	0.00044	0.00326	890
136	Mazarani	"	0.04871	0.04848	0.00023	1008
137	Shahdad	"	0.04083	0.01382	0.02701	1040
138	Sharf	"	0.35800	0.05387	0.30413	650
139	Sui Deep	PPL Balochistan				
140	Sui-SML	"	11.31800	10.45801	0.85999	955
141	Sui-HRL	"	0.07800	0.02888	0.04912	375
142	Sui-pab	"	0.16700	0.13127	0.03573	911
143	Sui-Sul	"	0.84600	0.65390	0.19210	996
144	Kabir	PPL Sindh	0.01620	0.00076	0.01544	1190
145	Zafir	"	0.09750		0.09750	760
146	Rehmat	OMV Maurice Sindh	0.03900	0.03900		978
147	Mehar	"	0.09529	0.03270	0.06259	1079
148	Mitha	"	0.00860	0.00215	0.00646	997
149	Saqib	"	0.02020	0.02020		941
150	Sofiya	"	0.03133	0.00593	0.02539	1079
151	Bela	POL Punjab	0.00800	0.00159	0.00641	1031
152	Sara	Spud Energy Sindh	0.02753	0.02673	0.00080	797
153	Suri	"	0.03208	0.02920	0.00288	815
154	Haseeb	Hycarbex	0.17000	0.01200	0.15800	810
155	Ali	UEPL Sindh	0.02108	0.01792	0.00317	1063
156	Ahmed	"	0.00052	0.00052		944
157	Amdani	"	0.00000	0.00000		617
158	Ali-2	"	0.01944	0.00263	0.01681	1002
159	Babarki	"	0.00098	0.00079	0.00019	1033
160	Bago	"	0.00077	0.00015	0.00063	869
161	Bakhsh Deep	"	0.01155	0.01056	0.00099	899
162	Baqar Deep	"	0.00601	0.00601		1023
163	Baudero	"	0.00196	0.00088	0.00109	961
164	Bhanoki	"	0.00182	0.00182		1087
165	Bilal/Bilal North/Siraj South	"	0.01915	0.01915		986
166	Bhatti/Nakurji	"	0.08069	0.08061	0.00008	1092
167	Bukhari	"	0.09698	0.09698		1007
168	Bukhari Deep	"	0.02371	0.02200	0.00171	1056
169	Buzdar Unit	"	0.18531	0.18439	0.00093	1026
170	Buzdar South	"	0.00282	0.00207	0.00075	943
171	Buzdar South Deep	"	0.03920	0.03027	0.00893	1084
172	Chaman	"	0.00275	0.00272	0.00003	1014
173	Fatehshah	"	0.00263	0.00263		1026
174	Fatehshah North	"	0.00481	0.00481		1076
175	Gagani	"	0.00009	0.00009		900
176	Golarchi	"	0.08221	0.08215	0.00006	1041
177	Hakro	"	0.00188	0.00064	0.00124	1104
178	Haider Deep	"	0.00083	0.00057	0.00025	971
179	Hayat	"	0.00172	0.00158	0.00014	1152

Table D-10: Natural Gas Reserves as on June 30th, 2019

(Trillion Cubic Feet)

	Non Associated Gas Fields	Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
180	Jabo	UEPL Sindh	0.01493	0.01493		912
181	Jalal	"	0.03459	0.03459		1030
182	Jarar Deep	"	0.00781	0.00781		1070
183	Jhaberi	"	0.00617	0.00428	0.00189	734
184	Jhok	"	0.00010	0.00010		1093
185	Jogwani	"	0.06177	0.06177		981
186	Junathi South	"	0.00485	0.00485		1020
187	Kamal North	"	0.01229	0.00870	0.00359	1261
188	Kamal North 3	"	0.00004	0.00004		1251
189	Kausar/Usman	"	0.11385	0.11140	0.00245	949
190	Kato	"	0.00685	0.00680	0.00004	1268
191	Khaskheli North	"	0.00052	0.00052		1170
192	Khorewah	"	0.17917	0.16943	0.00973	1132
193	Khorewah Deep	"	0.01177	0.01027	0.00150	1080
194	Koli	"	0.01653	0.01653		115
195	Korai	"	0.02036	0.01433	0.00603	1097
196	Korai North	"	0.00000	0.00000		1025
197	Kumbh	"	0.00190	0.00123	0.00068	927
198	Liari Deep	"	0.01020	0.01015	0.00005	1146
199	Limu	"	0.00033	0.00033		1044
200	Limu East	"	0.00001	0.00001		1075
201	Limu North	"	0.00404	0.00404		1034
202	Lodano	"	0.01180	0.00418	0.00761	1054
203	Lodano Deep	"	0.00400	0.00339	0.00061	1058
204	Mahi	"	0.00485	0.00485		1038
205	Malah	"	0.00131	0.00050	0.00082	1154
206	Mewa	"	0.00062	0.00057	0.00006	1033
207	Makrani	"	0.00235	0.00018	0.00217	1158
208	Malkani	"	0.00003	0.00003		1151
209	Missri	"	0.01337	0.01194	0.00143	753
210	Mulaki	"	0.00341	0.00341		1099
211	Makhdumpur	"	0.05657	0.05375	0.00282	1136
212	Makhdumpur Deep	"	0.02695	0.02311	0.00385	1100
213	Matli	"	0.05035	0.05023	0.00012	1022
214	Mohib	"	0.00470	0.00123	0.00347	992
215	Mohri	"	0.00139	0.00139		1124
216	Mor	"	0.00195	0.00195		928
217	Moroja	"	0.00280	0.00249	0.00031	1085
218	Niamat Basal	"	0.04830	0.04102	0.00727	1007
219	Naimat Basal 2X	"	0.00111	0.00067	0.00044	1310
220	Naimat West	"	0.46920	0.19277	0.27643	742
221	Nando	"	0.00024	0.00024		1135

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Table D-10: Natural Gas Reserves as on June 30th, 2019

(Trillion Cubic Feet)

	Non Associated Gas Fields	Operator Company	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu. Ft
222	Nurpur Deep	UEPL Sindh	0.00265	0.00265		962
223	Oderolal	"	0.00122	0.00122		1136
224	Pir	"	0.00816	0.00816		1041
225	Pir Apan	"	0.00502	0.00502		847
226	Piaro Deep	"	0.00337	0.00332	0.00005	1149
227	Piaro Deep Basal	"	0.00375	0.00223	0.00152	1052
228	Qasim Deep	"	0.00863	0.00697	0.00166	938
229	Raj	"	0.00407	0.00136	0.00271	966
230	Rajani	"	0.37949	0.23578	0.14371	992
231	Ragni Deep	"	0.00065	0.00065		919
232	Rajpari	"	0.00000	0.00000		1223
233	Rind	"	0.00252	0.00252		1101
234	Rahim	"	0.01130	0.00578	0.00552	1005
235	Ramdiani	"	0.00214	0.00016	0.00198	1096
236	Rawal	"	0.00047	0.00023	0.00023	1117
237	Roshnai	"	0.00250	0.00209	0.00041	1192
238	Sahu	"	0.00190	0.00092	0.00097	1025
239	Sajan	"	0.00393	0.00355	0.00038	1071
240	Sakhi Deep	"	0.03154	0.02943	0.00211	1629
241	Sakhi South Deep	"	0.02292	0.02292		985
242	Salamat	"	0.04324	0.04040	0.00284	1004
243	Saman	"	0.00014	0.00004	0.00010	1140
244	Shah Dino	"	0.00056	0.00056		820
245	Sonro	"	0.03237	0.03179	0.00058	1118
246	Sohrab Deep	"	0.11517	0.09879	0.01638	1099
247	Suhrat	"	0.00174	0.00091	0.00083	1072
248	Sumar Deep	"	0.01828	0.01457	0.00371	1161
249	Sutiari Deep	"	0.29256	0.13327	0.15929	725
250	Tangri Deep	"	0.00991	0.00944	0.00047	1110
251	Tando Ghulam Ali	"	0.01567	0.01307	0.00261	986
252	Tharo	"	0.00898	0.00600	0.00298	1040
253	Tharo West	"	0.00065	0.00065		1098
254	Thebo	"	0.00362	0.00323	0.00038	1077
255	Turk	"	0.16886	0.16617	0.00270	1141
256	Turk Deep	"	0.12111	0.11312	0.00799	1109
257	Umar	"	0.01611	0.00848	0.00764	1139
258	Warar	"	0.00006	0.00006		1041
259	Wassayo	"	0.00047	0.00047		1004
260	Zaur	"	0.03410	0.03387	0.00023	1613
261	Zaur Deep	"	0.02443	0.01556	0.00887	1152
262	Zaur West	"	0.00060	0.00060		1127
263	Zaur South	"	0.00135	0.00135		1162
264	Rizq	POGC Sindh	0.13664	0.01295	0.12369	927
265	POGC Rehman	"	0.14149	0.02643	0.11506	933
	Associated Gases	-	2.02059	1.39959	0.62100	
	TOTAL: TCF	-	61.1959280	39.750295	21.445633	
	Normalized TCF at 900 but/cu.ft.	-	55.65712	39.03270	16.62442	
	Million:TOE	-	1,195.64	838.51	357.13	

Source:- Pakistan Energy Year Book-2019 published by Hydrocarbon Development Institute of Pakistan

Table D-11: Associated Gas Reserves as on 30th June, 2019

(Trillion cubic feet)

Oil Field	Operator	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu.ft
01 Makori East	MOL	0.38100	0.16000	0.22100	1171
02 Buzdar North	OGDCL	-	-	-	1319
03 Chak- Naurang	"	-	-	-	-
04 Chanda	"	0.04927	0.03768	0.01159	1150
05 Fimkassar	"	0.01334	0.01300	0.00034	1250
06 Jakhro	"	0.00796	0.00597	0.00199	845
07 Kal	"	0.00243	0.00229	0.00014	1326
08 Kunar	"	0.07436	0.05493	0.01943	1202
09 Lashari Centre	"	0.00264	0.00264		1120
10 Missakaswal	"	0.02196	0.02186	0.00010	1220
11 Missan	"	0.00003	0.00003		1078
12 Pali	"				953
13 Pali Deep		0.00002	0.00002		
14 Pasakhi	"	0.01070	0.00838	0.00232	1334
15 Rajian	"	0.01236	0.00405	0.00831	1335
16 Sono	"	0.00289	0.00289		1553
17 Tando Alam	"	0.00304	0.00304		1046
18 Thora	"	0.00256	0.00256		1040
19 Toot	"	0.05864	0.05833	0.00031	1127
20 Bhangali	OPL	0.01665	0.00928	0.00737	1319
21 Dhurnal	"	0.15153	0.13215	0.01938	1288
22 Jhandial	POL	0.29206	0.00453	0.28753	1105
23 Dhulian	"	0.22602	0.22005	0.00597	1240
24 Meyal	"	0.28713	0.28337	0.00376	1265
25 Pariwali	"	0.09490	0.08678	0.00812	1141
26 Pindori	"	0.07888	0.07289	0.00599	1219
27 Turkwal	"	0.00404	0.00370	0.00034	1258
28 Dhok Sultan	PPL	0.00127	-	0.00127	1300
29 Ali Zaur	UEPL	0.00196	0.00196	-	1513
30 Aassu	"	0.00049	0.00049	-	-
31 Bachal	"	0.00234	0.00229	0.00005	1034
32 Bijoro	"	0.00012	0.00012	-	-
33 Bukhari North	"	0.00133	0.00096	0.00037	1045
34 Dabhi	"	0.03264	0.03264	-	1017
35 Dabhi North	"	0.00116	0.00095	0.00020	907
36 Dabhi South	"	0.01677	0.01670	0.00007	1064
37 Dang	"	0.00001	0.00001	-	1000
38 Dhani	"	0.00046	0.00006	0.00040	1048
39 Duphri	"	0.00942	0.00942	-	1024
40 Gharo	"	0.00034	0.00034	-	-
41 Ghunghro	"	0.00182	0.00182	-	-

Contd..

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Table D-11: Associated Gas Reserves as on 30th June, 2019

(Trillion cubic feet)

Oil Field	Operator	Original Recoverable Reserves	Cumulative Production	Balance Recoverable Reserves	Heating Value Btu/cu.ft
42 Gormani	UEPL	0.00153	0.00026	0.00127	821
43 Gulsher	"	0.00003	0.00003		
44 Guni	"	0.00006	0.00006		1098
45 Halipota	"	0.00817	0.00482	0.00335	1061
46 Jan	"	0.00001	0.00001	-	-
47 Jagir	"	0.00227	0.00223	0.00004	1184
48 Jhaberi South	"	0.00491	0.00491	-	999
49 Khaskeli	"	0.00934	0.00934	-	1129
50 Khaskheli DT	"	0.00009	0.00009	-	-
51 Laghari	"	0.00697	0.00697	-	-
52 Liari	"	0.00304	0.00304	-	1172
53 Mazari	"	0.01564	0.01441	0.00123	989
54 Mazari South	"	0.00523	0.00482	0.00040	1071
55 Mazari South Deep	"	0.00758	0.00522	0.00236	1106
56 Mohano	"	0.00062	0.00010	0.00051	-
57 Murid	"	0.00030	0.00030	-	-
58 M.Ismail Deep	"	0.04169	0.04097	0.00072	1050
59 Nari	"	0.01009	0.00805	0.00204	996
60 Rahim North	"	0.00457	0.00455	0.00002	882
61 Rawat	"	0.00014	0.00014	-	1174
62 Sakhi	"	0.00864	0.00864	-	1283
63 Saleh	"	0.00333	0.00145	0.00188	1279
64 Shekhano	"	0.00730	0.00730	-	1090
65 Shekhano Deep	"	0.00005	0.00005	-	-
66 Sukhi	"	0.00031	0.00031	-	1051
67 Sukhi South	"	0.00004	0.00004		
68 Tajedi	"	0.00016	0.00016	-	-
69 Tangri	"	0.00588	0.00538	0.00050	1102
70 Umer-2	"	0.00223	0.00189	0.00034	1157
71 Akri North	"	0.00088	0.00088	-	-
72 Bari	"	0.00122	0.00122	-	1052
73 Keyhole G	"	0.00008	0.00008	-	-
74 Meyun Ismail	"	0.00072	0.00072	-	1061
75 Muban	"	0.00229	0.00229	-	-
76 Paniro	"	0.00064	0.00064	-	1033
77 Rajo	"	0.00005	0.00005	-	-
TOTAL: TCF		**2.020593**	**1.39959**	**0.62100**	-
Normalized TCF at 900 btu/cu.ft.		**2.13699**	**1.63409**	**0.50290**	-
Million TOE		45.91	35.10	10.80	-

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan
 (*)   Includes Mazari South and "Mazari South Deep
 (**)   Includes Akri North, Bari, Keyhole G, M Ismail, Muban, Paniro and Rajo

Table D-12: Pakistan Coal Resources as on 30th June, 2019

Province Coal Field	Seam Thickness Range (Metres)	Resources (Million Tonnes)					Status
		Total	Measured Reserved	Indicated	Inferred	Hypothetical	
1	2	3	4	5	6	7	8
Balochistan							
Barkhan-Chamalang	0.3-2.0	6	1	-	5	-	Dev.
Duki	0.2-2.3	50	14	11	25	-	Dev.
Mach-Abegum	0.6-1.3	23	9	-	14	-	Dev.
Sor Range-Degari	0.3-1.3	50	15	-	19	16	Dev.
Pir Ismail Ziarat	0.4-0.7	12	2	2	8	-	Dev.
Khost-Sharig-Harnai	0.3-2.3	76	13	-	63	-	Dev.
Sub-Total:	-	217	54	13	134	16	
Punjab							
Makarwal	0.3-2.0	22	5	8	9	-	Dev.
Salt Range	0.15-1.2	213	50	16	2	145	Dev.
Sub-Total:	-	235	55	24	11	145	-
Sindh							
Lakhra	0.3-3.3	1328	244	629	455	-	Dev.
Sonda-Thatta	0.3-1.5	3700	60	511	2197	932	Non-Dev.
Jherruck	0.3-6.2	1823	106	810	907	-	Non-Dev.
Ongar	0.3-1.5	312	18	77	217	-	Non-Dev.
Indus East	0.3-2.5	1777	51	170	1556	-	Non-Dev.
Meting-Jhimpir	0.3-1.0	161	10	43	108	-	Dev.
Badin	0.55-3.1	850	150	0	200	500	Non-Dev.
Thar Coal*	0.2-22.81	175505	7025	17130	38650	112700	Non-Dev.
Sub-Total:	-	185456	7664	19370	44290	114132	-
Khyber Pakhtunkhwa							
Hangu/Orakzai	.043-0.6	82	1.0	4.5	76	-	Dev.
Cherat/Gulla Khel	0.8-1.2	9	0.5	-	8	-	Dev.
Sub-Total		90	1.5	4.5	84	-	-
Azad Kashmir							
Kotli	0.25-1.0	9	1	1	7	-	Dev.
Sub-Total:	-	9	1	1	7	-	-
Total:	-	186007	7775.5	19412.5	44526	114293	-

Contd..

* Measured reserved to Thar have been reduced by GSP after drilling and recalculation to remove overlaps in previous estimates. For Block-wise reserve/resources of Thar

hvAb: High volatile A bituminous coal	SubA: Sub bituminous A coal	LigA: Lignite A coal
hvBb: High volatile B bituminous coal	SubB: Sub bituminous B coal	LigB: Lignite B coal
hvCb: High volatile C bituminous coal	SubC: Sub bituminous C coal	LigC: Lignite C coal

Table D-12: Pakistan Coal Resources as on 30th June, 2019

Province Coal Field	Coal Quality Proximate Analysis (%)					Rank as per ASTM Classification	Heating Value Range (mmmf) (Btu/lb)
	Moisture	Volatile Matter	Fixed Carbon	Ash	Total Sulphur		
1	9	10	11	12	13	14	15
Balochistan							
Barkhan-Chamalar	1.1-2.9	24.9-43.5	19.4-47.1	9.1-36.5	3.0-8.5	hvCb to hvAb	12500-14357
Duki	3.5-11.5	32.0-50.0	28.0-42.0	5.0-38.0	4.0-6.0	SubB to hvAb	10131-14164
Mach-Abegum	7.1-12.0	34.2-43.0	32.4-41.5	9.6-20.3	3.2-7.4	SubA to hvCb	11110-12937
Sor Range-Degari	3.9-18.9	20.7-37.5	41.0-50.8	4.9-17.2	0.6-5.5	SubA to hvBb	11245-13900
Pir Ismail Ziarat	6.3-13.2	34.6-41.0	19.3-42.5	10.3-37.5	3.2-7.4	SubA to hvCb	10786-11996
Khost-Sharig-Hamal	1.7-11.2	9.3-45.3	25.5-43.8	9.3-34.0	3.5-9.55	SubB to hvAb	9637-15499
Punjab							
Makarwal	2.8-6.0	31.5-48.1	34.9-44.9	6.4-30.8	2.8-6.3	SubA to hvAb	10688-14029
Salt Range	3.2-10.8	21.5-38.8	25.7-44.8	12.3-44.2	2.6-10.7	SubC to hvAb	9472-15801
Sindh							
Lakhra	9.7-38.1	18.3-38.6	9.8-38.2	4.3-49.0	1.2-14.8	LigB to SubC	5503-9158
Sonda-Thatta	22.6-48.0	16.1-36.9	8.9-31.6	2.7-52.0	0.2-15.0	SubC to hvBb	8878-13555
Jherruck	9.0-39.5	20.0-44.2	15.0-58.8	5.0-39.0	0.4-7.7	SubC to hvCb	8800-12846
Ongar	9.0-39.5	20.0-44.2	15.0-58.8	5.0-39.0	0.4-7.7	LigB to SubA	5219-11172
Indus East	9.0-39.5	20.0-44.2	15.0-58.8	5.0-39.0	0.4-7.7	LigA to SubC	7782-8660
Meting-Jhimpir	26.6-36.6	25.2-34.0	24.1-32.2	8.2-16.8	2.9-5.1	LigA to SubC	7734-8612
Badin	-	-	-	-	-	-	11415-11521
Thar Coal*	29.6-55.5	23.1-36.6	14.2-34.0	2.9-11.5	0.4-2.9	LigB to SubA	6244-1104
Khyber Pakhtunkhwa							
Hangu/Orakzai	0.2-2.5	16.2-33.4	21.8-49.8	5.3-43.3	1.5-9.5	SubA to hvAb	10500-14149
Cherat/Gulla Khel	0.1-7.1	14.0-31.2	37.0-76.9	6.1-39.0	1.1-3.5	SubC to hvAb	9386-14171
Azad Kashmir							
Kotli	0.2-6.0	5.1-32.0	26.3-69.5	3.3-50.0	0.3-4.8	LigA to hvCb	7336-12338

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan
     mmmf: Moist mineral matter free

Table D-13: Bunkering of Petroleum Products

Products	Year							
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
JP-1	199921	183527	198705	196225	209183	240240	271330	288182
	206239	189326	204984	202426	215793	247832	279904	297289
	(230.99)	(202.65)	(213.73)	(170.82)	(111.37)	(142.56)	(190.78)	(230.61)
HSD	8028	9183	6994	5172	5148	8636	5567	2931
	8440	9654	7353	5437	5412	9079	5853	3081
	(14.71)	(10.15)	(7.76)	(4.24)	(2.81)	(5.56)	(3.87)	(2.22)
LDO	961	199	-	-	-	-	-	-
	1001	207	-	-	-	-	-	-
	(0.85)	(0.18)	-	-	-	-	-	-
Furnace Oil	91130	84462	88733	60059	46348	39141	33196	29981
	88733	82241	86399	58479	45129	38112	32323	29192
	(65.14)	(56.62)	(56.39)	(42.19)	(12.88)	(14.74)	(14.04)	(13.93)
Total	300040	277371	294432	261456	260679	288017	310093	321094
	304413	281429	298736	266342	266334	295022	318080	329562
	(311.69)	(269.60)	(277.88)	(217.25)	(127.06)	(162.86)	(208.69)	(246.76)

Source:- Pakistan Energy Year Book, Hydrocarbon Development Institute of Pakistan

Table D-14: Immunization Coverage

(000 Number)

Year	B.C.G	Polio				D.P.T			
		I	II	III	BR	I	II	III	BR
2005	5,203	7,484	4,387	4,160	49	4,581	4,127	3,919	-
2006	5,364	8,097	4,870	4,739	33	5,275	4,886	4,756	-
2007	5,790	8,743	5,179	5,070	47	1,711	1,523	1,479	-
2008	5,884	8,985	5,034	4,819	61	-	-	-	-
2009	6,133	9,535	5,403	5,277	36	-	-	-	-
2010	5,925	9,626	5,527	5,422	81	-	-	-	-
2011	5,813	9,543	5,356	5,218	86	-	-	-	-
2012	6,062	10,023	5,446	5,330	-	-	-	-	-
2013	6,186	10,369	5,539	5,398	-	-	-	-	-
2014	6,151	10,585	5,495	5,369	-	-	-	-	-
2015	5,848	10,540	5,388	5,257	-	-	-	-	-
2016	6,234	11,111	5,538	5,379	-	-	-	-	-
2017	6,357	11,422	5,618	5,455	-	-	-	-	-
2018	6,608	11,957	6,138	5,672	-	-	-	-	-
2019	7,262	12,839	6,249	6,116	-	-	-	-	-

Year	HBV			T.T					Measles
	I	II	III	I	II	III	IV	V	
2005	4,458	4,065	3,841	4,539	2,858	793	519	157	4,387
2006	5,053	4,692	4,571	4,069	3,133	895	286	176	5,050
2007	1,618	1,441	1,401	3,878	3,048	810	239	141	5,386
2008	-	-	-	4,307	3,385	866	279	152	5,278
2009	-	-	-	4,920	3,792	938	285	169	7,104
2010	-	-	-	5,051	4,065	897	268	165	8,099
2011	-	-	-	5,090	4,121	812	234	127	8,211
2012	-	-	-	5,362	4,279	815	230	128	9,086
2013	-	-	-	5,157	4,235	787	312	130	10,113
2014	-	-	-	4,536	3,702	577	185	106	6,701
2015	-	-	-	5,048	4,063	587	158	87	9,386
2016	-	-	-	4,570	3,935	398	98	57	10,301
2017	-	-	-	4,690	3,994	191	52	27	10,317
2018	-	-	-	4,875	4,103	192	58	31	10,189
2019	-	-	-	5,272	4,561	251	71	37	11,709

Year	PENTAVALENT**			PNEUMOCCAL(PCV10)		
	I	II	III	I	II	III
2009	5,925	5,461	5,339	-	-	-
2010	5,863	5,555	5,407	-	-	-
2011	5,606	5,267	5,129	-	-	-
2012	5,773	5,400	5,276	-	-	-
2013	5,922	5,553	5,412	3,589	3,195	3,008
2014	5,844	5,491	5,371	5,526	5,197	5,072
2015	5,713	5,353	5,226	5,642	5,389	5,176
2016	5,933	5,532	5,372	5,884	5,506	5,375
2017	6,009	5,625	5,472	5,994	5,605	5,470
2018	5,527	6,139	5,676	5,529	6,136	5,673
2019	6,726	6,361	6,231	6,725	6,357	6,229

Source:- i.Health Division ii. National Institute of Health
Note:-   Since 2002 data for HBV started instead of DT
B.C.G=   Bacillus + Calamus + Guerin   D.P.T= Diphtheria, Prtussis and Tatanus   T.T=   Tetanus + Toxoid
H.B.V= Hepatitis B Vaccine

Table D-15: Performance of Contraceptive Delivery Services through Population Welfare Programme, Pakistan

Year	IUD (No. of cases)	Sterilization (No. of cases male/female)	Oral Pills (No. of cycles)	Condom (In gross)	Injectable (vials)	Foam (bottles)	Couple year of Protection (CYP)
1991-92	750,125	79,663	1,018,360	599,659	841,088	53,943	-
1992-93	638,901	85,164	860,765	296,548	662,298	16,382	-
1993-94	542,999	85,436	844,065	305,289	878,776	89,198	-
1994-95	713,922	93,553	1,017,405	564,158	1,026,290	116,483	-
1995-96	692,474	99,336	1,235,905	666,150	1,079,867	27,475	-
1996-97	632,880	96,652	1,477,514	807,304	1,196,998	3,285	-
1997-98	873,326	105,513	2,467,032	980,404	1,646,392	5,334	-
1998-99	1,047,634	126,589	2,828,628	817,371	1,968,686	-	-
1999-00	979,342	139,024	3,411,784	646,628	2,101,028	-	-
2000-01	891,726	121,595	4,237,238	832,420	1,714,953	-	-
2001-02	1,056,743	124,412	4,189,899	852,058	1,873,495	-	-
2002-03	1,146,786	130,412	5,562,431	970,112	2,014,536	-	-
2003-04	1,043,951	143,328	6,641,867	995,932	1,972,259	-	-
2004-05	872,302	157,228	8,066,826	702,560	2,143,917	-	6,687,540
2005-06	975,015	170,968	8,022,341	958,427	2,536,885	-	7,550,278
2006-07	1,262,249	187,724	8,820,538	1,133,404	3,086,735	-	9,103,208
2007-08	1,365,465	205,440	6,681,477	1,151,950	3,096,786	-	9,563,867
2008-09	1,309,420	187,542	5,335,096	920,282	2,792,802	-	8,761,760
2009-10	1,317,609	178,374	5,752,340	1,127,155	3,190,884	-	8,990,128
2010-11	1,208,367	120,302	5,802,085	1,123,281	2,996,993	-	8,031,124
2011-12	1,315,298	119,582	6,223,180	1,036,655	2,705,346	-	8,090,921
2012-13	1,420,464	103,842	6,573,102	1,308,691	2,986,989	**Implant (Pieces)**	8,613,944
2013-14	1,666,406	112,224	6,791,654	1,341,667	2,840,378	9,626	9,621,805
2014-15	1,787,502	216,081	15,003,584	1,794,173	7,303951	54,993	15,096,730
2015-16	1,821,158	186,222	15,037,055	1,895,972	6,702,686	58,436	15,061,332
2016-17	1,891,463	169,615	19,133,954	1,902,353	9,258,681	89,998	16,185,079
2017-18	1,828,543	173,686	16,849,976	1,880,603	8,170,274	133,152	15,755,706
2018-19 (P)	1,993,897	159,327	17,781,767	2,018,602	7,942,245	81,508	16,384,477

Note:- Total figures of Pakistan do not tally due to inclusion of the performance of Islamabad, AJK & GB

Table D-15: Performance of Contraceptive Delivery Services through Population Welfare Programme, Balochistan

Year	IUD (No. of cases)	Sterilization (No. of cases male/female)	Oral Pills (No. of cycles)	Condom (In gross)	Injectable (vials)	Foam (bottles)	Couple year of Protection (CYP)
1991-92	21,401	643	38,795	10,087	21,459	493	-
1992-93	14,932	845	24,096	2,327	11,570	279	-
1993-94	13,435	894	30,190	4,040	22,349	2,868	-
1994-95	12,872	1,136	47,597	5,883	21,567	4,274	-
1995-96	11,590	1,299	53,733	5,012	23,532	696	-
1996-97	12,537	1,467	71,612	5,051	32,215	-	-
1997-98	19,250	1,642	85,762	6,372	51,448	-	-
1998-99	19,162	1,772	91,776	9,278	50,217	-	-
1999-00	19,140	1,398	109,341	11,859	52,371	-	-
2000-01	13,868	1,282	126,766	14,170	38,999	-	-
2001-02	16,114	1,453	89,456	10,113	39,783	-	-
2002-03	13,700	1,528	83,495	9,263	36,796	-	-
2003-04	11,995	1,674	101,020	10,575	35,233	-	-
2004-05	14,640	2,201	128,722	13,096	42,216	-	108,874
2005-06	15,759	2,163	156,161	15,559	44,728	-	117,109
2006-07	18,805	2,069	173,168	17,537	46,758	-	130,113
2007-08	19,769	1,984	193,104	19,948	46,334	-	136,079
2008-09	20,254	2,017	191,533	19,732	46,824	-	137,968
2009-10	18,689	1,876	190,636	17,447	47,594	-	128,536
2010-11	16,738	1,400	170,075	17,047	44,140	-	115,859
2011-12	16,842	1,377	133,821	15,043	41,349	-	108,394
2012-13	16,085	1,083	114,043	14,798	38,155	-	99,867
2013-14	16,611	1,181	126,875	14,590	39,309	**Implant (Pieces)**	103,812
2014-15	29,413	7,154	681,164	33,093	261,165	333	345,124
2015-16	33,780	7,529	559,610	28,098	164,942	399	336,817
2016-17	27,386	3,294	453,848	25,909	200,154	695	264,991
2017-18	24,951	2,084	511,698	27,338	179,278	1,153	245,536
2018-19 (P)	24,910	1,770	653,820	34,442	215,778	2,376	275,256

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Table D-15: Performance of Contraceptive Delivery Services through Population Welfare Programme, Khyber Pakhtunkhwa

Year	IUD (No. of Cases)	Sterilization (No. of cases male/female)	Oral Pills (No. of cycles)	Condom (In gross)	injectable (vials)	Foam (bottles)	Couple year of Protection (CYP)
1991-92	73,535	6,781	145,997	23,531	83,763	1,121	-
1992-93	74,877	6,447	94,953	7,238	60,554	808	-
1993-94	64,724	7,969	124,041	9,334	101,082	9,340	-
1994-95	68,454	8,252	137,922	17,220	113,730	12,934	-
1995-96	62,259	9,822	174,655	19,111	114,198	2,633	-
1996-97	48,911	8,738	208,787	16,786	156,110	2	-
1997-98	61,330	8,492	263,079	23,145	225,533	-	-
1998-99	67,389	10,154	316,978	29,341	277,552	-	-
1999-00	60,057	9,121	346,383	38,200	285,208	-	-
2000-01	52,380	9,870	457,649	48,571	253,881	-	-
2001-02	62,472	9,763	281,624	31,853	202,032	-	-
2002-03	109,556	9,341	341,424	35,627	240,611	-	-
2003-04	73,515	8,215	305,502	31,508	220,939	-	-
2004-05	76,093	7,021	342,512	35,394	282,955	-	468,907
2005-06	87,572	6,439	436,662	46,659	341,848	-	531,129
2006-07	118,928	6,509	587,885	61,555	396,873	-	677,733
2007-08	140,219	6,482	639,163	66,995	454,519	-	772,301
2008-09	151,725	6,298	626,712	67,378	435,459	-	806,013
2009-10	152,678	5,257	716,291	63,611	457,117	-	802,872
2010-11	159,894	4,815	700,801	66,524	443,333	-	823,665
2011-12	186,785	4,506	784,569	82,799	390,370	-	923,250
2012-13	169,178	4,319	901,828	98,586	412,654	-	887,349
2013-14	219,294	4,413	950,509	113,389	442,067	**Implant (Pieces)**	1,087,861
2014-15	365,032	9,066	2,239,158	209,775	2,211,988	6,283	2,670,133
2015-16	344,737	6,524	2,218,521	243,870	2,205,252	4,393	2,601,633
2016-17	340,812	6,009	2,928,467	240,394	3,156,804	2,729	2,852,786
2017-18	285,210	5,439	2,628,446	171,221	2,786,357	5,903	2,431,536
2018-19 (P)	316,089	4,587	2,888,012	192,566	2,550,942	7,335	2,553,259

Table D-15: Performance of Contraceptive Delivery Services through Population Welfare Programme, Punjab

Year	IUD (No. of cases)	Sterilization (No. of cases male/female)	Oral Pills (No. of cycles)	Condom (In gross)	Injectable (vials)	Foam (bottles)	Couple year of Protection (CYP)
1991-92	462,997	36,147	292,356	163,846	397,372	3,007	-
1992-93	363,654	33,030	154,660	40,756	202,097	2,736	-
1993-94	266,844	39,198	244,794	47,650	300,291	40,895	-
1994-95	357,210	44,445	416,405	79,264	377,963	55,498	-
1995-96	345,987	46,711	497,152	76,901	374,429	13,445	-
1996-97	318,784	45,089	636,946	75,309	407,535	337	-
1997-98	464,161	52,951	746,898	95,138	546,292	-	-
1998-99	603,346	68,944	1,023,433	135,317	714,728	-	-
1999-00	559,556	77,577	1,065,448	162,027	679,719	-	-
2000-01	505,955	66,190	1,370,707	193,520	512,517	-	-
2001-02	659,455	75,432	930,506	149,724	559,610	-	-
2002-03	685,222	72,094	829,974	129,767	590,236	-	-
2003-04	558,320	86,033	806,209	128,377	543,668	-	-
2004-05	462,311	90,711	699,573	112,807	492,206	-	3,009,862
2005-06	489,508	92,236	701,847	107,497	534,462	-	3,127,407
2006-07	587,937	104,470	1,049,896	165,002	629,555	-	3,724,560
2007-08	679,185	107,897	1,449,589	226,019	705,671	-	4,189,653
2008-09	659,179	97,777	1,391,853	222,681	705,266	-	3,985,863
2009-10	550,804	80,059	1,405,201	191,841	712,742	-	3,356,621
2010-11	463,347	79,626	1,446,485	206,437	642,741	-	2,895,870
2011-12	508,034	80,109	1,493,212	245,096	506,005	-	3,225,326
2012-13	476,805	66,542	1,533,147	268,878	481,899	-	2,968,060
2013-14	483,432	70,096	1,614,040	275,465	470,440	**Implant (Pieces)**	3,045,367
2014-15	1,038,799	134,841	9,112,198	1,,165,166	3,349,774	25,296	8,811,276
2015-16	1,074,524	111,987	9,119,580	1,223,006	3,002,234	30,639	8,799,267
2016-17	1,128,850	116,923	10,791,649	1,190,221	3,507,850	41,673	9,298,011
2017-18	1,152,811	116,841	8,384,932	1,214,344	2,888,154	43,347	9,207,573
2018-19 (P)	1,339,833	108,522	8,865,955	1,300,680	2,854,539	33,672	10,060,297

Contd…

Table D-15: Performance of Contraceptive Delivery Services through Population Welfare Programme, Sindh

Year	IUD (No. of cases)	Sterilization (No. of cases male/female)	Oral Pills (No. of cycles)	Condom (In gross)	Injectable (vials)	Foam (bottles)	Couple year of Protection (CYP)
1991-92	118,955	14,861	267,900	76,981	144,125	1,170	-
1992-93	85,216	15,845	140,947	13,288	78,091	1,146	-
1993-94	99,637	17,191	201,545	26,999	164,336	19,669	-
1994-95	167,677	18,016	221,132	37,075	187,896	25,420	-
1995-96	121,343	20,210	262,835	32,872	174,090	1,995	-
1996-97	117,605	20,644	268,095	34,055	209,426	-	-
1997-98	166,370	20,317	333,670	42,118	305,773	-	-
1998-99	206,741	21,559	399,956	47,095	349,547	-	-
1999-00	173,298	25,936	428,736	55,184	363,742	-	-
2000-01	135,975	26,077	514,530	67,746	259,830	-	-
2001-02	119,524	22,044	382,851	50,302	237,352	-	-
2002-03	120,120	32,349	362,405	48,912	242,415	-	-
2003-04	121,401	32,625	406,786	58,482	248,273	-	-
2004-05	112,342	37,762	432,566	62,494	243,740	-	1,005,302
2005-06	129,563	43,013	499,424	70,611	302,468	-	1,155,533
2006-07	175,419	42,912	602,928	84,844	413,412	-	1,358,088
2007-08	193,369	45,462	651,746	94,148	480,752	-	1,478,814
2008-09	181,391	45,300	616,985	91,322	481,131	-	1,429,800
2009-10	141,763	38,492	758,353	83,779	491,690	-	1,209,995
2010-11	129,140	23,983	788,688	92,915	491,977	-	1,070,892
2011-12	128,776	22,860	805,184	112,114	371,559	-	976,571
2012-13	88,045	18,008	691,497	117,148	342,839	**Implant (Pieces)**	765,073
2013-14	88,218	23,464	666,378	127,446	349,675	9,626	867,989
2014-15	267,155	62,950	2,125,110	315,225	1,124,822	22,551	2,627,741
2015-16	273,497	58,275	2,154,093	324,773	1,010,360	22,326	2,640,176
2016-17	254,692	40,067	4,194,746	367,655	2,093,911	43,795	2,881,597
2017-18	241,931	41,479	4,369,317	420,907	1,982,809	81,449	3,021,303
2018-19 (P)	232,156	43,179	4,564,789	442,101	2,067,112	36,799	2,936,332

Source:- i) Population Welfare Statistics Section ii) Pakistan Bureau of Statistics
(P) Provisional

REGIONAL COMPARISON

Table 1: Midyear Population

ADB Regional Member	Population (million)				Population Growth Ratesa (%)			
	2000	2005	2010	2018	2000	2005	2010	2018
Developing ADB Member Economies								
Central and West Asia	230.0	251.7	276.8	331.9	2.1	1.8	2.0	2.5
Afghanistanb	19.5	22.1	24.5	30.1	5.0	1.9	2.1	6.6
Armenia	3.2	3.1	3.0	3.0 *	-0.3	-0.6	-0.7	-0.3*
Azerbaijan	8.1	8.5	9.1	9.9	1.0	1.2	1.2	0.9
Georgia	4.1	3.9	3.8	3.7	-1.9	-0.6	-0.7	-0.0
Kazakhstan	14.9	15.1	16.3	18.3	-0.3	0.9	1.4	1.3
Kyrgyz Republicb	4.9	5.1	5.4	6.3	1.4	1.2	1.3	1.9
Pakistan	140.0	156.0	173.5	212.8	2.4	2.2	2.1	2.4
Tajikistan	6.2	6.8	7.5	9.0	2.3	1.2	2.5	2.1
Turkmenistan	4.5	4.8	5.1	5.9	1.1	1.1	1.6	1.6
Uzbekistan	24.7	26.2	28.6	33.0	1.4	1.2	2.9	1.8
East Asia	1,345.7	1,387.8	1,423.4	1,481.2	0.8	0.6	0.5	0.4
China, People's Republic ofb	1,267.4	1,307.6	1,340.9	1,395.4	0.8	0.6	0.5	0.4
Hong Kong, China	6.7	6.8	7.0	7.5	0.9	0.4	0.7	0.8
Korea, Republic of	47.0	48.2	49.6	51.6	0.8	0.2	0.5	0.4
Mongolia	2.4	2.5	2.7	3.2	1.3	1.1	1.8	1.9
Taipei,China	22.2	22.7	23.1	23.6	0.8	0.4	0.3	0.1
South Asia	1,189.6	1,290.5	1,382.6	1,548.6	1.6	1.5	1.4	1.2
Bangladesh	129.3	138.6	148.6	164.6	1.4	1.4	1.3	1.2
Bhutan	0.6	0.6	0.7	0.7	1.3	1.3	1.8	1.0
Indiab	1,019.0	1,106.0	1,186.0	1,332.0	1.8	1.5	1.4	1.2
Maldives	0.3	0.3	0.4	0.5	1.5	3.3	2.3	4.2
Nepal	21.0	25.3	26.3	29.1	3.0	2.3	1.4	1.4
Sri Lanka	19.4	19.6	20.7	21.7	1.3	0.9	1.0	1.1
Southeast Asia	512.3	547.8	588.0	648.9	1.4	1.3	1.9	1.1
Brunei Darussalam	0.3	0.4	0.4	0.4	2.5	1.8	1.8	3.0
Cambodia	12.5	13.3	14.1	15.6	1.3	1.3	1.3	1.3
Indonesia	206.3	219.9	237.6	265.0	1.2	1.3	2.7	1.3
Lao People's Democratic Republic	5.1	5.6	6.0	6.8	2.0	2.0	1.5	1.4
Malaysia	23.5	26.0	28.6	32.4	2.5	2.1	1.8	1.1
Myanmarb	46.1	48.5	50.2	53.9	1.2	0.9	0.7	0.9
Philippines	76.8	84.7	93.1	106.6	2.3	1.9	2.3	1.6
Singapore	4.0	4.3	5.1	5.6	1.7	2.4	1.8	0.5
Thailand	60.7	63.2	65.9	67.8	0.8	0.8	0.8	0.3
Viet Nam	77.1	81.9	86.9	94.7	1.4	1.2	1.1	1.0
The Pacificc	8.0	9.2	10.4	12.8	4.5	2.7	2.8	2.6
Cook Islands	18.0	21.5	23.7	18.6	9.1	5.9	4.9	-4.6
Fiji	802.0	827.0	850.7	886.2	0.6	0.7	0.6	0.6
Kiribatib	84.5	92.5	103.1	113.0	1.7	1.8	2.2	-0.1
Marshall Islands	51.2	51.2	52.9	54.6	0.8	1.4	1.2	0.4
Micronesia, Federated States ofb	107.0	105.6	102.8	102.6(2017)	0.2	-0.3	-0.5	0.1 d
Nauru	10.1	9.5	9.7	11.4	1.0	-2.2	1.9	1.6
Niueb	1.9	1.6 (2006)	1.6 (2011)	1.7(2017)	-3.7e	...	...	1.1 d
Palau	18.9	19.8	18.3	17.5	0.3	0.8	-1.9	-2.0
Papua New Guinea	5,190.8	6,051.7	7,055.4	9,018.9	3.3	3.1	3.1	3.1
Samoa	175.2	179.9	186.4	197.7	0.9	0.5	0.8	0.7
Solomon Islands	418.6	470.1	555.5	667.0	2.3	2.3	2.6 f	2.1
Timor-Leste	871.6	1,026.5	1,109.6	1,324.0	1.0	3.0	1.6	2.1
Tonga	99.1	101.2	102.8	99.6	0.4	0.4	0.2	-0.5
Tuvalu	9.5	10.3	11.1	11.6	1.3	3.1	0.5	1.2
Vanuatu	190.9	214.0	239.7	284.6	2.3	2.3	2.4	2.2
Developed ADB Member Economies	149.7	152.1	154.5	156.4	0.3	0.2	0.3	0.1
Australia	19.0	20.2	22.0	25.0	1.2	1.2	1.6	1.6
Japan	126.8	127.8	128.1	126.5	0.2	0.0	0.0	-0.2
New Zealand	3.9	4.1	4.4	4.9	0.6	1.1	1.1	1.9
DEVELOPING ADB MEMBER ECONOMIESg	3,285.6	3,487.0	3,681.2	4,023.4	1.3	1.1	1.2	1.0
ALL ADB REGIONAL MEMBERSg	3,435.3	3,639.1	3,835.6	4,179.9	1.2	1.1	1.1	1.0
WORLD	6,143.5	6,541.9	6,956.8	7,631.1	1.3	1.2	1.2	1.1

0.0 = magnitude is less than half of unit employed, * = preliminary, ADB = Asian Development Bank.
a The annual population growth rate is calculated as the percentage change in population when comparing the reference year with the year prior. For example, the population growth rates under the column heading "2018" refer to population growth from 2017 to 2018.
b Estimates of population size are as of 1 January for the Kyrgyz Republic; 11 March for Niue; 10 June for Afghanistan; 1 April for 2000, 4 April for 2010, and 30 September for 2005 and 2017 for the Federated States of Micronesia; 1 October for India and Myanmar; 7 November for Kiribati; and 31 December for the People's Republic of China.
c Estimates of population size for ADB developing member economies in the Pacific are expressed in thousands, while the total population for the Pacific region is expressed in millions.
d Refers to 2017 annual population growth rate.   e Refers to 2001 annual population growth rate.   f Refers to 2011 annual population growth rate.   g For reporting economies only.
Sources: Economy sources; and United Nations. World Population Prospects 2019. https://population.un.org/wpp/Download/Standard/Population/ (accessed 22 July 2019).

Table 2: Migration and Urbanization

ADB Regional Member	Net International Migration Rate_a (per 1,000 population)				Urban Population (% of total population)			
	2000–2005	2005–2010	2010–2015	2015–2020	2000	2005	2010	2018
Developing ADB Member Economies								
Central and West Asia								
Afghanistan	6.4	-7.6	3.3	-1.7	21.3	21.5	23.2	25.0
Armenia	-10.6	-12.5	-2.1	-1.7	64.8	64.0	63.5	63.8
Azerbaijan	0.9	1.2	0.2	0.1	51.1	52.5	53.0	52.9
Georgia	-6.9	-5.8	-4.7	-2.5	55.1	56.5	56.5	58.5
Kazakhstan	0.6	-0.4	1.9	-1.0	56.5	57.1	54.5	58.0
Kyrgyz Republic	-6.9	-2.9	-3.3	-0.6	34.7	34.8	34.1	33.9
Pakistan	-0.9	-0.4	-1.1	-1.1	33.0	34.6	36.3	36.4
Tajikistan	-4.5	-4.1	-3.4	-2.2	26.6	26.4	26.4	27.1
Turkmenistan	-5.4	-2.5	-1.9	-0.9	45.9	47.1	48.5	51.6
Uzbekistan	-1.9	-1.0	-0.4	-0.3	37.2	36.1	51.3	50.6
East Asia								
China, People's Republic of	-0.3	-0.3	-0.2	-0.2	36.2	43.0	50.0	59.6
Hong Kong, China	1.9	2.6	2.1	4.0	100.0	100.0	100.0	100.0
Korea, Republic of	0.3	-0.6	1.6	0.2	79.6	81.3	81.9	81.5
Mongolia	-1.2	-0.8	-0.3	-0.3	56.6	61.9	69.2	67.9
Taipei,China_b	1.8	2.2	1.5	1.3	55.8	57.7	59.3	62.5
South Asia								
Bangladesh	-2.2	-4.5	-3.0	-2.3	23.1	24.2	25.9	36.6
Bhutan	2.0	-3.3	0.1	0.4	21.0	30.9	34.8	40.9
India	-0.3	-0.4	-0.4	-0.4	27.7	28.8	29.9	34.0
Maldives	11.6	10.5	28.4	22.8	27.7	33.8	36.4	39.8
Nepal	-6.2	-7.4	-15.1	1.5	14.1	14.6	16.6	20.8
Sri Lanka	-4.7	-5.2	-4.7	-4.6	18.4	18.3	18.2	18.5
Southeast Asia								
Brunei Darussalam	0.2	-1.2	-0.4	–	71.2	73.2	75.0	77.6
Cambodia	-0.6	-4.3	-2.0	-1.9	18.6	19.2	20.3	23.4
Indonesia	-1.1	-1.1	-0.4	-0.4	42.0	45.9	49.9	50.2
Lao People's Democratic Republic	-5.3	-3.7	-3.5	-2.1	22.0	27.2	30.1	35.0
Malaysia	5.5	5.7	1.7	1.6	62.0	66.5	71.0	75.6
Myanmar	-5.1	-5.4	-2.0	-3.1	27.0	27.9	28.9	30.0
Philippines	-3.0	-3.4	-1.7	-0.6	46.1	45.7	45.3	46.9
Singapore	4.5	30.7	11.8	4.7	100.0	100.0	100.0	100.0
Thailand	1.2	0.2	0.5	0.3	31.1	32.5	43.4	50.1
Viet Nam	-1.6	-1.9	-0.9	-0.8	24.2	27.1	30.5	35.7
The Pacific								
Cook Islands	...	...	...	...	65.2	71.0	73.3	75.1
Fiji	-14.4	-5.6	-12.0	-7.0	47.9	49.9	52.2	56.9
Kiribati	-4.4	-0.6	-7.7	-6.9	43.0	43.6	47.4	54.1
Marshall Islands	...	...	...	...	68.6	71.1	73.6	77.0
Micronesia, Federated States of	-23.0	-23.5	-5.7	-5.4	22.3	22.3	22.3	22.6 (2017)
Nauru	...	...	...	...	100.0	100.0	100.0	100.0
Niue	...	...	...	...	33.1	35.2	38.7	44.8
Palau	...	...	...	...	69.5	77.4	77.0	78.7 (2015)
Papua New Guinea	-2.7	1.1	-0.1	-0.1	13.2	13.1	13.0	13.2
Samoa	-17.7	-16.5	-12.8	-14.3	20.0	22.1	21.0	19.0
Solomon Islands	-3.8	-5.7	-2.8	-2.5	15.8	17.8	20.0	23.7
Timor-Leste	-5.9	-7.3	-4.9	-4.3	24.3	26.0	27.7	30.6
Tonga	-15.8	-15.2	-25.4	-7.7	23.0	23.2	23.4	22.8
Tuvalu	...	...	...	...	46.0	49.7	54.8	62.4
Vanuatu	-2.6	-2.9	1.4	0.4	21.8	23.2	24.4	25.0
Developed ADB Member Economies								
Australia	6.0	11.4	8.6	6.4	84.1 (2001)	84.6	85.7	86.8
Japan	0.3	0.4	0.6	0.6	78.6	86.0	90.8	91.6
New Zealand	6.7	2.9	4.0	3.2	83.5	83.8	83.7	84.1

... = data not available, – = magnitude equals zero, ADB = Asian Development Bank.
a Refers to annual average. The United Nations' population estimates and projections are based on all available sources of data on population size, and levels of fertility, mortality, and international migration. Statistics on international migration are sourced from population registers and other administrative sources. These estimates and projections are made for 235 distinct national economies or areas comprising the total population of the world.
b For urban population, refers to localities of 100,000 or more inhabitants.
Sources: Economy sources; United Nations. World Urbanization Prospects: The 2018 Revision – Data Query. https://esa.un.org/unpd/wup/DataQuery/ (accessed 20 July 2019); and United Nations. World Population Prospects 2019. https://population.un.org/wpp/Download/Standard/Migration/ (accessed 20 July 2019).

Table 3: Agriculture Land Use (% of total land area)

ADB Regional Member	Agricultural Land				Arable Land				Permanent Cropland			
	2000	2005	2010	2016	2000	2005	2010	2016	2000	2005	2010	2016
Developing ADB Member Economies												
Central and West Asia												
Afghanistan	57.8	58.1	58.1	58.1	11.8	12.0	11.9	11.8	0.1	0.2	0.2	0.3
Armenia	46.5	56.4	60.9	58.9	15.8	16.0	15.8	15.7	1.3	1.8	1.9	2.0
Azerbaijan	57.4	57.6	57.7	57.7	22.1	22.3	22.8	24.2	2.9	2.7	2.8	2.9
Georgia	43.2	36.3	35.4	34.5	11.4	6.8	5.7	5.0	3.9	1.6	1.8	1.6
Kazakhstan	79.8	78.6	80.4	80.4	11.2	10.6	10.6	10.9	0.1	0.0	0.0	0.0
Kyrgyz Republic	55.9	56.0	55.3	55.0	7.1	6.7	6.7	6.7	0.3	0.4	0.4	0.4
Pakistan	47.6	46.7	45.7	47.8	40.3	39.1	38.1	40.3	0.9	1.0	1.1	1.0
Tajikistan	32.7	33.4	34.0	34.1	5.6	5.4	5.3	5.3	0.7	0.8	1.0	1.0
Turkmenistan	75.5	74.2	72.4	72.0	4.1	4.3	4.1	4.1	0.1	0.1	0.1	0.1
Uzbekistan	64.2	62.9	62.7	62.9	10.5	10.3	10.2	10.3	0.8	0.8	0.8	0.9
East Asia												
China, People's Republic of	55.6	55.1	54.8	56.2	12.6	12.0	11.4	12.7	1.2	1.3	1.5	1.7
Hong Kong, China	6.7	6.7	5.2	4.8	4.8	4.8	3.3	2.9	1.0	1.0	1.0	1.0
Korea, Republic of	20.5	19.4	18.2	17.4	17.8	17.0	15.5	14.6	2.1	1.9	2.1	2.3
Mongolia	84.0	73.0	73.1	71.5	0.8	0.4	0.4	0.4	0.0	0.0	0.0	0.0
Taipei,China	24.0	23.5	23.0	22.4	17.5	17.0	16.9	16.6	6.5	6.5	6.1	5.8
South Asia												
Bangladesh	72.2	71.5	71.0	70.6	64.1	60.8	59.9	59.6	3.5	6.1	6.5	6.4
Bhutan	13.3	15.6	13.6	13.6	2.7	4.4	2.6	2.6	0.5	0.5	0.3	0.2
India	60.9	60.6	60.4	60.4	54.1	53.6	52.8	52.6	3.1	3.4	4.1	4.4
Maldives	30.0	30.0	26.3	26.3	10.0	10.0	13.0	13.0	16.7	16.7	10.0	10.0
Nepal	29.6	29.3	28.8	28.7	16.4	15.9	15.2	14.7	0.8	0.9	1.1	1.5
Sri Lanka	37.5	40.0	41.8	43.7	14.6	17.5	19.1	20.7	15.9	15.5	15.6	15.9
Southeast Asia												
Brunei Darussalam	1.9	2.1	2.5	2.7	0.4	0.4	0.8	0.9	0.8	0.9	1.1	1.1
Cambodia	27.0	30.3	30.9	30.9	21.0	21.0	21.5	21.5	0.8	0.9	0.9	0.9
Indonesia	26.0	28.6	30.7	31.5	11.3	12.7	13.0	13.0	8.6	9.9	11.6	12.4
Lao People's Democratic Republic	7.8	8.6	9.6	10.3	4.0	5.0	6.1	6.6	0.4	0.4	0.6	0.7
Malaysia	21.1	21.7	22.5	26.3	2.6	2.9	2.6	2.7	17.6	18.0	19.0	22.7
Myanmar	16.5	17.2	19.2	19.5	15.2	15.4	16.5	16.7	0.9	1.4	2.2	2.4
Philippines	37.7	38.1	40.6	41.7	16.9	16.8	17.8	18.7	15.8	16.3	17.8	17.9
Singapore	1.8	1.1	1.1	0.9	1.5	1.0	0.9	0.8	0.3	0.1	0.1	0.1
Thailand	38.8	38.4	41.2	43.3	30.6	29.8	30.8	32.9	6.6	7.1	8.8	8.8
Viet Nam	28.2	32.4	34.7	39.3	19.9	20.5	20.8	22.6	6.2	9.8	11.9	14.6
The Pacific												
Cook Islands	20.0	11.4	5.6	6.3	7.5	5.2	2.9	4.2	12.5	6.2	2.7	2.1
Fiji	23.4	23.4	23.3	23.3	9.3	9.3	9.0	9.0	4.5	4.5	4.7	4.7
Kiribati	42.0	42.0	42.0	42.0	2.5	2.5	2.5	2.5	39.5	39.5	39.5	39.5
Marshall Islands	66.7	72.2	72.2	63.9	5.6	11.1	11.1	11.1	44.4	44.4	44.4	36.1
Micronesia, Federated States of	32.1	32.1	31.4	31.4	3.6	3.6	2.9	2.9	24.3	24.3	24.3	24.3
Nauru	20.0	20.0	20.0	20.0	–	–	–	–	20.0	20.0	20.0	20.0
Niue	18.5	18.5	19.2	19.2	3.8	3.8	3.8	3.8	10.8	10.8	11.5	11.5
Palau	10.9	10.9	10.9	10.9	2.2	2.2	2.2	2.2	4.3	4.3	4.3	4.3
Papua New Guinea	2.2	2.3	2.6	2.6	0.5	0.5	0.7	0.7	1.4	1.3	1.5	1.5
Samoa	17.0	14.8	12.4	12.4	4.9	3.9	2.8	2.8	11.0	9.5	7.8	7.8
Solomon Islands	2.7	3.2	3.8	3.9	0.5	0.6	0.7	0.7	2.0	2.3	2.9	2.9
Timor-Leste	22.7	25.9	25.0	25.6	8.1	11.4	10.1	10.4	4.5	4.4	4.8	5.0
Tonga	41.7	41.7	44.4	45.8	20.8	20.8	23.6	25.0	15.3	15.3	15.3	15.3
Tuvalu	66.7	56.7	60.0	60.0	–	–	–	–	66.7	56.7	60.0	60.0
Vanuatu	14.4	15.0	15.3	15.3	1.6	1.6	1.6	1.6	9.3	9.9	10.3	10.3
Developed ADB Member Economies												
Australia	59.3	57.9	51.9	48.2	6.2	6.4	5.5	6.0	0.0	0.0	0.1	0.0
Japan	14.4	12.9	12.6	12.3	12.3	12.0	11.7	11.5	1.0	0.9	0.9	0.8
New Zealand	58.5	44.5	43.3	40.5	5.7	1.6	1.9	2.2	0.2	0.2	0.3	0.3

– = magnitude equals zero, 0.0 = magnitude is less than half of unit employed, ADB = Asian Development Bank.

Source: Food and Agriculture Organization of the United Nations. FAOSTAT Database. http://www.fao.org/faostat/en/#data/RL (accessed 21 May 2019).

Table 4: Deforestation and Pollution

ADB Regional Member	Deforestation Rate[a] (average % change)		Carbon Dioxide Emissions[b] (t '000)		Nitrous Oxide Emissions (t '000 CO2 equivalent)	
	2000	2016	2000	2014	2000	2012
Developing ADB Member Economies						
Central and West Asia						
Afghanistan	–	–	774	9,809	3,317	3,424
Armenia	0.06	-0.06	3,465	5,530	462	1,023
Azerbaijan	-0.23	-2.30	29,508	37,488	2,030	2,673
Georgia	-0.03	–	4,536	8,988	2,437	2,352
Kazakhstan	0.17	–	118,099	248,315	14,865	17,822
Kyrgyz Republic	-0.26	1.26	4,635	9,608	1,452	1,567
Pakistan	1.91	2.92	106,449	166,298	26,350	30,651
Tajikistan	-0.05	-0.10	2,237	5,189	1,110	1,848
Turkmenistan	–	–	37,539	68,423	3,046	4,924
Uzbekistan	-0.52	0.35	121,829	105,214	9,610	13,192
East Asia						
China, People's Republic of	-1.13	-0.74	3,405,180	10,291,927	414,138	587,166
Hong Kong, China	...	...	40,440	46,223	513	476
Korea, Republic of	0.13	0.12	447,561	587,156	18,576	14,979
Mongolia	0.69	0.77	7,506	20,840	5,058	3,548
Taipei,China	–	– (2017)	230,022 (2001)	271,013 (2015)	3,845 (2001)	4,506 (2015)
South Asia						
Bangladesh	0.18	0.18	27,869	73,190	20,770	26,683
Bhutan	-0.38	-0.36	396	1,001	281	555
India	-0.22	-0.25	1,031,853	2,238,377	207,700	239,755
Maldives	–	–	451	1,335	12	27
Nepal	2.30	–	3,069	8,031	4,232	4,598
Sri Lanka	0.42	0.32	10,238	18,394	2,044	2,174
Southeast Asia						
Brunei Darussalam	0.40	–	4,712	9,109	395	342
Cambodia	1.20	1.35	1,977	6,685	3,295	16,685
Indonesia	1.89	0.75	263,419	464,176	94,933	93,139
Lao People's Democratic Republic	0.67	-1.01	939	1,955	3,265	8,987
Malaysia	0.36	-0.06	125,734	242,821	13,822	15,310
Myanmar	1.23	1.88	10,088	21,632	31,300	26,783
Philippines	-0.68	-2.99	73,307	105,654	12,365	12,762
Singapore	–	–	49,006	56,373	6,635	1,909
Thailand	-1.80	-0.18	181,271	316,213	18,677	30,833
Viet Nam	-2.06	-0.87	53,645	166,911	19,746	34,494
The Pacific						
Cook Islands	-0.47	–	...	...	...	...
Fiji	-0.28	-0.48	843	1,170	343	344
Kiribati	–	–	29	62	3	4
Marshall Islands	–	–	77	103	0	0
Micronesia, Federated States of	-0.05	-0.05	125	150	11	11
Nauru	...	...	84	48	0	0
Niue	...	...	...	...	...	...
Palau	-0.38	–	249	260	0	0
Papua New Guinea	0.01	0.01	2,666	6,318	1,613	1,234
Samoa	-2.46	–	143	198	37	40
Solomon Islands	0.25	0.26	150	202	2,425	2,656
Timor-Leste	1.29	1.63	–	469	164	226
Tonga	–	–	95	121	22	22
Tuvalu	–	–	7	11	1	1
Vanuatu	–	–	84	154	118	109
Developed ADB Member Economies						
Australia	-0.02	-0.25	329,443	361,262	75,581	54,247
Japan	0.03	0.01	1,220,528	1,214,048	30,411	24,911
New Zealand	-0.48	-0.00	32,981	34,664	11,549	11,880

Contd..

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Table 4: Deforestation and Pollution

ADB Regional Member	Methane Emissions (t '000 CO2 equivalent)		Other Greenhouse Gasesc (t '000 CO2 equivalent)	
	2000	2012	2000	2012
Developing ADB Member Economies				
Central and West Asia				
Afghanistan	9,384	13,763	126	349
Armenia	2,565	3,426	112	710
Azerbaijan	9,955	19,955	464	1,142
Georgia	4,137	5,019	3	227
Kazakhstan	38,779	71,350	14,065	30,363
Kyrgyz Republic	3,486	4,291	93	68
Pakistan	117,125	158,337	757	1,159
Tajikistan	3,304	5,408	798	367
Turkmenistan	21,241	22,009	124	595
Uzbekistan	37,233	47,333	298	989
East Asia				
China, People's Republic of	1,043,400	1,752,290	104,677	251,254
Hong Kong, China	2,695	3,147	155	150
Korea, Republic of	30,916	32,625	14,934	8,968
Mongolia	9,218	6,257	26,233	2,216 (2010)
Taipei,China	12,215 (2001)	5,449 (2015)	6,304 (2001)	3,052 (2015)
South Asia				
Bangladesh	89,247	105,142	686	1,329
Bhutan	1,032	1,770	644	488
India	561,733	636,396	56,626	153,658
Maldives	34	52	...	...
Nepal	21,206	23,982	2,443	7,995
Sri Lanka	9,606	11,864	441	91
Southeast Asia				
Brunei Darussalam	3,882	4,539	101	427
Cambodia	14,985	35,915	23,021	73,300
Indonesia	170,032	223,316	63,048	2,556
Lao People's Democratic Republic	7,219	15,011	13,588	136,841
Malaysia	29,309	34,271	5,144	3,866
Myanmar	66,942	80,637	78,176	406,274
Philippines	49,911	57,170	12,487	3,891
Singapore	1,684	2,386	1,889 (2001)	3,299
Thailand	83,564	106,499	8,756	45,556
Viet Nam	75,430	113,564	5,782	25,707
The Pacific				
Cook Islands	...	...	...	...
Fiji	705	715	9	52
Kiribati	13	16	−	−
Marshall Islands	6	8	...	...
Micronesia, Federated States of	28	30	...	...
Nauru	3	3	...	...
Niue	...	...	...	...
Palau	1	1	...	...
Papua New Guinea	2,001	2,143	1,949	2,188
Samoa	116	133	-0	0
Solomon Islands	1,394	1,449	0	0
Timor-Leste	450	732	−	-0
Tonga	58	61	-0	...
Tuvalu	3	3	-0	0
Vanuatu	267	254	0	-0
Developed ADB Member Economies				
Australia	128,133	125,588	520,911	174,653
Japan	47,496	38,957	51,527	71,746
New Zealand	26,584	28,658	1,506	1,764

... = data not available, − = magnitude equals zero, -0 or 0 = magnitude is less than half of unit employed, ADB = Asian Development Bank, CO2 = carbon dioxide, t = metric ton.

a Rate refers to percentage change over previous year. A negative value indicates that the deforestation rate is decreasing (i.e., reforestation).

b Data from the World Bank are expressed in kilotons, while data provided in the table are expressed in thousands of metric tons, using a conversion factor of 1 kiloton = 1,000 metric tons.

c Other greenhouse gas emissions refer to hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.

Sources: Food and Agriculture Organization of the United Nations. FAOSTAT Database. http://www.fao.org/faostat/en/#data/RL (accessed 25 July 2019); and World Bank. World Development Indicators Online. http://data.worldbank.org/indicator (accessed 25 July 2019). For Taipei,China: Government of Taipei,China, Directorate- General of Budget, Accounting and Statistics. Statistical Yearbook 2017. https://eng.dgbas.gov.tw/public/data/dgbas03/bs2/yearbook_eng/Yearbook2017.pdf (accessed 22 May 2019).

Table 5: Freshwater Resources

ADB Regional Member	Internal Renewable Freshwater Resources (m3 billion per year) 2017	(m3 inhabitant per year) 2017	Annual Freshwater Withdrawals (m3 billion)	Water Productivitya (constant 2010 $ per m3)
Developing ADB Member Economies				
Central and West Asia	370	1,155		
Afghanistan	47	1,327	20 (2000)	...
Armenia	7	2,341	3 (2017)	3.5 (2015)
Azerbaijan	8	826	13 (2017)	4.4 (2012)
Georgia	58	14,859	2 (2008)	6.2 (2008)
Kazakhstan	64	3,535	21 (2016)	7.4 (2010)
Kyrgyz Republic	49	8,094	8 (2006)	0.5 (2006)
Pakistan	55	279	184 (2008)	0.9 (2008)
Tajikistan	63	7,114	11 (2006)	0.4 (2006)
Turkmenistan	1	244	28 (2004)	0.4 (2004)
Uzbekistan	16	512	53 (2016)	0.5 (2005)
East Asiac	2,913	1,948		
China, People's Republic of	2,813	1,952	594 (2015)	15.0 (2015)
Hong Kong, China	...	...	...	...
Korea, Republic of	65	1,272	29 (2005)	30.8 (2005)
Mongolia	35	11,313	0 (2016)	12.3 (2009)
Taipei,China	...	...	...	...
South Asia	1,880	1,209		
Bangladesh	105	638	36 (2008)	2.9 (2008)
Bhutan	78	96,582	0 (2008)	3.9 (2008)
India	1,446	1,080	648 (2010)	2.6 (2010)
Maldives	0	69	...	...
Nepal	198	6,763	9 (2006)	1.4 (2006)
Sri Lanka	53	2,529	13 (2005)	3.2 (2005)
Southeast Asia	4,985	7,699		
Brunei Darussalam	9	19,827	...	...
Cambodia	121	7,535	2 (2006)	4.1 (2006)
Indonesia	2,019	7,648	223 (2016)	4.0 (2000)
Lao People's Democratic Republic	190	27,763	3 (2005)	1.4 (2005)
Malaysia	580	18,341	11 (2005)	18.3 (2005)
Myanmar	1,003	18,793	33 (2000)	0.5 (2000)
Philippines	479	4,565	85 (2016)	2.3 (2009)
Singapore	1	105	...	...
Thailand	225	3,252	57 (2007)	5.5 (2007)
Viet Nam	359	3,762	82 (2005)	1.0 (2005)
The Pacificc	892	78,701		
Cook Islands	...	...	...	...
Fiji	29	31,530	0 (2005)	35.7 (2005)
Kiribati	...	...	...	...
Marshall Islands	...	...	...	...
Micronesia, Federated States of	...	...	...	...
Nauru	...	...	...	...
Niue	...	...	...	...
Palau	...	...	...	...
Papua New Guinea	801	97,079	0 (2005)	27.3 (2005)
Samoa	...	...	...	...
Solomon Islands	45	73,123	...	...
Timor-Leste	8	6,339	1 (2004)	1.6 (2004)
Tonga	...	...	...	...
Tuvalu	...	...	...	...
Vanuatu	10	36,206	...	...
Developed ADB Member Economies	1,249	7,974		
Australia	492	20,123	16 (2016)	78.4 (2015)
Japan	430	3,373	81 (2009)	67.4 (2009)
New Zealand	327	69,486	5 (2010)	28.2 (2010)
DEVELOPING ADB MEMBER ECONOMIESc	11,040	2,740		
ALL ADB REGIONAL MEMBERSc	12,289	2,936		

... = data not available, 0 = magnitude is less than half of unit employed, $ = United States dollars, ADB = Asian Development Bank, m3 = cubic meter.
a Gross domestic product in constant 2010 United States dollars per cubic meter of total freshwater withdrawal.
b Regional aggregates are weighted averages estimated using population.
c For reporting economies only.
Sources: Food and Agriculture Organization of the United Nations. AQUASTAT Database. http://www.fao.org/nr/water/aquastat/data/query/index.html (accessed 25 July 2019); and World Bank. World Development Indicators Online. http://data.worldbank.org/indicator (accessed 25 July 2019).

Table 6: Energy Production and Imports

ADB Regional Member	Energy Production (PJ)				Energy Imports, Net (% of energy use)			
	2000	2005	2010	2016	2000	2005	2010	2016
Developing ADB Member Economies								
Central and West Asia								
Afghanistan	18	23	41	70	28.0	36.1	70.1	51.0
Armenia	27	36	52	44	67.9	65.7	56.3	66.4
Azerbaijan	803	1,155	2,759	2,427	-65.6	-101.6	-467.7	-305.9
Georgia	55	53	58	60	54.2	60.7	58.6	70.6
Kazakhstan	3,367	5,131	6,770	6,737	-115.8	-118.2	-101.3	-102.0
Kyrgyz Republic	60	61	53	77	40.6	46.5	53.9	52.5
Pakistan	1,403	2,020	2,253	2,438	32.6	23.5	27.2	32.2
Tajikistan	103	115	115	136	27.0	22.3	19.6	18.1
Turkmenistan	1,928	2,584	1,982	3,230	-208.5	-221.0	-108.4	-178.9
Uzbekistan	2,307	2,446	2,309	2,134	-8.3	-19.3	-27.6	-35.6
East Asia								
China, People's Republic of	40,783	63,831	88,642	94,591	4.0	7.3	12.8	20.2
Hong Kong, China	...	...	...	...	...	...	...	...
Korea, Republic of	1,420	1,776	1,855	2,117	81.9	79.7	82.2	82.0
Mongolia	66	138	655	959	24.1	-32.7	-299.4	-226.2
Taipei,China	...	...	...	...	...	...	...	...
South Asia								
Bangladesh	857	1,027	1,304	1,597	14.1	13.8	12.7	14.3
Bhutan	46	53	73	79	-4.5	-10.4	-28.1	-19.7
India	15,763	18,212	22,888	23,301	20.4	19.8	21.6	36.8
Maldives	–	–	–	–	100.0	100.0	100.0	100.0
Nepal	310	349	384	422	11.2	10.1	13.9	21.3
Sri Lanka	156	163	184	169	47.3	49.7	48.9	63.8
Southeast Asia								
Brunei Darussalam	813	848	775	633	-1,013.7	-1,015.8	-469.9	-410.5
Cambodia	114	105	152	191	19.7	27.1	31.8	39.7
Indonesia	8,129	11,351	16,854	18,885	-63.6	-60.2	-102.5	-88.5
Lao People's Democratic Republic	57	64	98	267	1.7	5.9	2.0	-9.4
Malaysia	3,082	3,770	3,450	3,787	-57.3	-37.3	-16.4	-7.4
Myanmar	648	927	969	1,175	-20.4	-49.8	-46.2	-40.6
Philippines	695	762	924	1,106	55.2	48.1	43.3	48.0
Singapore	...	...	25	28	...	...	97.7	96.9
Thailand	1,700	2,144	2,952	3,283	44.7	47.3	40.3	43.3
Viet Nam	1,733	2,612	2,747	2,880	-37.3	-48.7	-18.5	4.2
The Pacific								
Cook Islands	...	...	...	–	...	...	...	100.0
Fiji	10	9	5	6	54.5	62.5	76.2	81.8
Kiribati	–	–	1	1	100.0	100.0	–	–
Marshall Islands	–	–	–	–	100.0	100.0	100.0	100.0
Micronesia, Federated States of	–	–	–	–	100.0	100.0	100.0	100.0
Nauru	...	– (2006)	–	–	...	100.0 (2006)	100.0	100.0
Niue	–	–	–	–	...	...	...	...
Palau	...	...	...	...	...	...	...	...
Papua New Guinea	220	174	95	376	-122.2	-38.1	32.6	-104.3
Samoa	1	1	1	1	66.7	66.7	75.0	80.0
Solomon Islands	3	3	3	3	40.0	50.0	50.0	50.0
Timor-Leste	2 (2002)	201	186	121	50.0 (2002)	-4,925.0	-4,550.0	-1,412.5
Tonga	–	–	–	–	100.0	100.0	100.0	100.0
Tuvalu	...	...	...	...	...	...	...	...
Vanuatu	1	1	1	1	50.0	50.0	66.7	66.7
Developed ADB Member Economies	14,738	16,282	18,586	18,561				
Australia	9,731	11,451	13,606	16,322	-114.3	-140.5	-151.2	-199.4
Japan	4,379	4,260	4,211	1,481	79.8	80.5	79.9	91.7
New Zealand	628	571	769	758	15.9	23.5	7.6	20.1
DEVELOPING ADB MEMBER ECONOMIESa	86,680	122,145	161,615	173,332				
ALL ADB REGIONAL MEMBERSa	101,418	138,427	180,201	191,893				
WORLD	412,155	476,738	530,597	568,988				

... = data not available, - = magnitude equals zero, ADB = Asian Development Bank, PJ = petajoule.
a Includes only reporting economies with data corresponding to the year heading.
   Sources: For Energy Production: United Nations Statistics Division. Official communication, 25 July 2019. For Net Energy Imports: Asian Development Bank estimates.

Table 7: Use of Energy

ADB Regional Member	Energy Use (PJ)				GDP per Unit Use of Energy (constant 2011 $ million PPP per PJ)			
	2000	2005	2010	2016	2000	2005	2010	2016
Developing ADB Member Economies								
Central and West Asia								
Afghanistan	32(2002)	36	137	143	717.7 (2002)	783.2	356.1	434.7
Armenia	84	105	119	131	106.9	152.1	162.1	182.9
Azerbaijan	485	573	486	598	76.4	119.8	302.1	263.2
Georgia	120	135	140	204	119.8	151.6	188.8	169.1
Kazakhstan	1,560	2,352	3,363	3,335	94.9	103.1	97.5	125.1
Kyrgyz Republic	101	114	115	162	100.6	107.3	132.2	124.0
Pakistan	2,082	2,642	3,094	3,597	232.5	233.8	236.1	260.9
Tajikistan	141	148	143	166	52.3	78.9	112.6	145.3
Turkmenistan	625	805	951	1,158	38.5	38.4	53.2	76.5
Uzbekistan	2,130	2,050	1,809	1,574	29.2	39.3	67.0	119.0
East Asia								
China, People's Republic of	42,461	68,833	101,618	118,484	109.7	108.0	125.0	167.2
Hong Kong, China	570	579	544	590	397.8	481.5	621.2	676.7
Korea, Republic of	7,854	8,764	10,441	11,762	124.2	140.3	144.1	152.6
Mongolia	87	104	164	294	128.3	146.9	127.5	116.9
Taipei,China	...	...	...	...	...	...	...	...
South Asia								
Bangladesh	998	1,191	1,493	1,864	216.5	232.4	248.9	290.2
Bhutan	44	48	57	66	46.1	61.9	82.0	99.8
India	19,808	22,706	29,193	36,886	144.6	172.4	188.2	220.7
Maldives	6	9	13	21	456.5	328.5	336.6	294.8
Nepal	349	388	446	536	104.7	111.3	120.3	124.5
Sri Lanka	296	324	360	467	351.6	390.3	478.6	519.7
Southeast Asia								
Brunei Darussalam	73	76	136	124	374.6	398.6	230.2	245.0
Cambodia	142	144	223	317	118.5	181.5	161.9	172.4
Indonesia	4,970	7,087	8,322	10,021	247.1	218.3	245.8	280.5
Lao People's Democratic Republic	58	68	100	244	228.3	263.6	263.5	168.2
Malaysia	1,959	2,745	2,965	3,527	193.0	173.7	200.1	227.1
Myanmar	538	619	663	836	111.9	178.2	281.5	335.6
Philippines	1,551	1,469	1,631	2,126	212.4	280.7	321.6	351.5
Singapore	756	805	1,109	910	279.0	331.9	334.5	521.9
Thailand	3,075	4,067	4,945	5,794	188.1	185.4	183.3	187.0
Viet Nam	1,262	1,756	2,319	3,006	163.0	163.5	168.2	183.7
The Pacific								
Cook Islands	1	1	1	1	...	...	...	...
Fiji	22	24	21	33	246.1	254.3	301.1	237.1
Kiribati	1	1	1	1	167.9	180.8	180.3	230.4
Marshall Islands	2	2	2	2	75.5	84.2	91.2	99.0
Micronesia, Federated States of	2	2	2	2	167.5	172.8	170.8	172.0
Nauru	1	1	1	1	...	...	66.1	169.0
Niue	–	–	–	–	...	...	...	...
Palau	3	3	3	3	78.6	92.4	81.6	101.4
Papua New Guinea	99	126	141	184	154.5	135.1	160.9	175.2
Samoa	3	3	4	5	251.8	320.0	251.4	230.9
Solomon Islands	5	6	6	6	149.9	131.6	164.6	217.7
Timor-Leste	...	4	4	8	...	1,617.3	2,461.9	1,153.1
Tonga	1	2	2	2	451.3	249.9	259.5	285.3
Tuvalu	–	–	–	–	...	...	...	...
Vanuatu	2	2	3	3	261.2	273.2	232.2	257.5
Developed ADB Member Economies	26,942	27,355	27,187	24,245	188.7	200.4	207.2	251.0
Australia	4,540	4,762	5,417	5,451	149.3	166.9	168.9	198.0
Japan	21,655	21,847	20,938	17,845	198.4	208.5	218.7	271.2
New Zealand	747	746	832	949	145.1	176.9	168.6	176.6
DEVELOPING ADB MEMBER ECONOMIES	94,359	130,919	177,290	209,194	137.7	140.7	154.1	190.9
ALL ADB REGIONAL MEMBERSa	121,301	158,274	204,477	233,439	149.0	151.0	161.2	197.1
WORLD	404,363	463,300	517,492	551,579	157.2	165.2	176.9	204.0

... = data not available, – = magnitude equals zero, $ = United States dollars, ADB = Asian Development Bank, GDP = gross domestic product, PJ = petajoule, PPP = purchasing power parity.

a Includes only reporting economies with data corresponding to the year heading.

Sources: For Energy Use: United Nations Statistics Division. Official communication, 25 July 2019. For GDP per Unit Use of Energy: Asian Development Bank estimate

CONCEPTS AND DEFINITIONS

Environment

The totality of all the external conditions affecting the life, development and survival of an organism is called Environment.

Environment Statistics

Statistics that describe the state and trends of the environment, covering the media of the natural environment (air/climate, water, land/soil), the biota within the media, and human settlements is termed as Environment Statistics. This statistics is integrative in nature, measuring human activities and natural events that affect the environment, the impacts of these activities and events, social responses to environmental impacts, and the quality and availability of natural assets. Broad definitions include environmental indicators, indices and accounting.

Environmental Condition

It is the modification of the environment of one or more organisms by their activities, including reaction and co-action (liberation of oxygen, for example by water plants in an aquarium).

Environmental Degradation

The deterioration in environmental quality from ambient concentrations of pollutants and other activities and processes such as improper land use and natural disasters is known as Environmental degradation.

Environmental Effects

These are the results of environmental impacts on human health and welfare. The term is also used synonymously with environmental impact.

Environmental Functions

Environmental services, including spatial functions, waste disposal, natural resource supply and life support are called Environment Functions.

Environmental Impacts

Direct effect of socio-economic activities and natural events on the components of the environment are called Environmental Impacts.

Environmental Protection

Any activity to maintain or restore the quality of environmental media through preventing the emission of pollutants or reducing the presence of polluting substances in environmental media is called Environmental Protection. It may consist of: (a) changes in characteristics of goods and services, (b) changes in consumption patterns, (c) changes in production techniques, (d) treatment or disposal of residuals in separate environmental protection facilities, (e) recycling and (f) prevention of degradation of the landscape and ecosystems.

Agricultural Land

Agriculture land is the land, which include arable land, land under permanent crops and land under permanent meadows and pastures**.**

Air Pollutants

Substances in air that could, at high enough concentrations, harm human beings, animals, vegetation or material. Air pollutants may thus include forms of matter of almost any natural or artificial

composition capable of being airborne. They may consist of solid particles, liquid droplets or gases, or combinations of these forms.

Air Pollution

The presence of contaminant or pollutant substances in the air that do not disperse properly and that interfere with human health or welfare or produce other harmful environmental effects is called air pollution.

Alkalinity

The alkalinity is the capacity of aqueous media to react with hydroxyl ions. Alkalinity is the factor representing the acid-neutralizing capacity of an aqueous system.

Arid Zone

Arid Zone is defined as the area with less than 250 millimetre (mm) of yearly rainfall. The term may include a reference to bioclimatic factors.

Atmosphere

The mass of air surrounding the earth, composed largely of oxygen and nitrogen is called atmosphere.

Bacteria

The single-celled micro-organisms is called bacteria. Some bacteria are useful in pollution control because they break down the organic matter in water and land. Other bacteria may cause disease.

Biochemical Oxygen Demand (BOD)

The dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water is termed as Biochemical Oxygen Demand (BOD).

Biodiversity

The range of genetic differences, species differences and ecosystem differences in a given area is called biodiversity.

Biogas

The mixture of methane and carbon dioxide is called biogas. The ratio of methane and carbon dioxide in the mixture is 7:3. This mixture is produced by the treatment of animal dung, industrial wastes and crop residues. It is used as an alternative source of energy.

Biomass

Biomass is defined as the total living weight (generally in dry weight) of all organisms in a particular area or habitat. It is sometimes expressed as weight per unit area of land or per unit volume of water.

Brackish Water

The water which contains salts at a concentration significantly lower than that of sea water is known as brackish water. The concentration of total dissolved salts is usually in the range of 1,000-10,000 milligrams per liter (mg/l).

Carbon Dioxide (CO_2)

It is colour less, odorless and non-poisonous gas that results from fossil fuel combustion and is normally a part of ambient air. It is also produce in the respiration of living organisms (plants and animals) and considered to be the main greenhouse gas, contributing to climate change.

Carbon Monoxide (CO)

It is colourless, odorless and poisonous gas produced by incomplete fossil fuel combustion. Carbon monoxide combines with the haemoglobin of human beings, reducing its oxygen carrying capacity, with effects harmful to human beings.

Catchment Area

The area from which rainwater drains into river systems, lakes and seas is known as Catchment Area.

Chemical Oxygen Demand (COD)

The index of water pollution measuring the mass concentration of oxygen consumed by the chemical breakdown of organic and inorganic matter is called Chemical Oxygen Demand.

Chloro-fluorocarbons (CFCs)

Chloro-fluorocarbons are the inert, non-toxic and easily liquefied chemicals used in refrigerator, air-conditioning, packaging and insulation, or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere, they drift into the upper atmosphere where their chlorine components destroy ozone. These are also among the greenhouse gases that may affect climate change.

Chromium

Chromium is heavy metal used in the manufacture of alloys and electroplating. It is a multivalent element that in hexavalent form can be toxic in drinking water ifconcentration exceeds 50 milligrams per liter.

Climate

Climate is the condition of the atmosphere at a particular location (microclimate) or region over a long period of time. It is the long-term summation of atmospheric elements - such as solar radiation, temperature, humidity, precipitation type (frequency and amount), atmospheric pressure and wind (speed and direction)- and their variations.

Coliform Organism

Coliform are the micro-organism which found in the intestinal tract of human being and animals. Its presence in water indicates faecal pollution and potentially dangerous bacterial contamination.

Containment

Containment are the retention of hazardous material so as to ensure that it is effectively prevented from dispersing into the environment, or released only at an acceptable level. Containment may occur in specially built containment spaces.

Decibel (dB)

Decibel is the unit of sound measurement on a logarithmic scale, with sound approximately doubling in loudness for every increase of 10 decibels.

Desertification

The land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations (drought) and human activities (over exploitation of dry lands) is called desertification.

Disposal of Waste

The waste elimination techniques comprising landfills, containment, underground disposal, dumping at sea and all other disposal methods is called disposal of waste.

Dissolved Oxygen (DO)

The amount of gaseous oxygen (O_2) actually present in water expressed in terms either of its presence in the volume of water (milligrams of O_2 per littre) or of its share in saturated water (percentage) is called dissolved oxygen.

Dissolved Solids

Disintegrated organic and inorganic material contained in water. Excessive amounts make water unsuitable for drinking or for use in industrial processes are called dissolved solids.

Drinking Water Standards

The standards determining the quality of drinking water in the context of prevailing environmental, social, economic and cultural conditions, with reference to the presence of suspended matter, excess salts, unpleasant take and all harmful microbes is called drinking water standards. Meeting of those standards does not necessarily imply purity.

Earthquake

Earthquake is a sudden shaking or trembling of the earth caused by faulting or volcanic activity.

Effluent

The liquid waste product (whether treated or untreated) discharged from and industrial process or human activity that is discharged into the environment is called effluent.

Emission

Emission is defined as the discharge of pollutants into the atmosphere from stationary sources such as smokestacks, other vents, surface areas of commercial or industrial facilities and mobile sources, for example, motor vehicles, locomotives and aircraft.

Fresh Water

Naturally occurring water having a low concentration of salts is called fresh water. It is generally accepted as suitable for abstraction and treatment to produce potable water.

Flora

Flora consists of all plants life i.e it includes all type of plants species, including ferns, lycopods and masses. It is an important component of the environment and comprises a large variety of life form and is an integral part of various ecosystem, for example agriculture, including major & minor crops, forestry, trees areas, standing wood volume etc.

Fauna

Fauna consists of all animal life i.e it includes all species of animals, birds, mammals, reptiles, fish, insects and amphibians.

Greenhouse Effect

Greenhouse effect is defined as the effect caused by warming of the earth's atmosphere due to build-up of carbon dioxide and other greenhouse or trace gases that act like a pane of glass in a greenhouse, allowing sunlight to pass through and heat the earth but preventing a counterbalancing loss of heat radiation.

Ground-level Ozone

Amount of ozone present as a secondary pollutant in the lower atmosphere, where its formation can be enhanced by other pollutants. It is highly toxic at levels above 0.1 parts per million (p.p.m).

Ground Water

Freshwater beneath the earth's surface (usually in aquifers) supplying wells and springs. Because groundwater is a major source of drinking water, there is a growing concern over leaching of agricultural and industrial pollutants or substances from underground storage tanks.

Habitat

Habitat is place where an organism or population (human, animal, plant, micro-organism) lives.

Hazardous Air Pollutants

Air pollutants that may reasonably be expected to cause or contribute to irreversible illness or death are called Hazardous Air Pollutants. They include asbestos, beryllium, mercury, benzene, coke oven emissions, radio nuclides and vinyl chloride.

Human Settlements

Integrative concept that comprises (a) physical components of shelter and infrastructure and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition.

Industrial Waste

Liquid, solid and gaseous wastes originating from the manufacture of specific products is called industrial waste.

Irrigation

The irrigation is a process of artificial application of water to land to assist in the growing of crops and pastures. It is carried out by spraying water under pressure (spry irrigation) or by pumping water onto the land (flood irrigation).

Landfill

These are the final placement of waste in or on the land in a controlled or uncontrolled way according to different sanitary, environmental protection and other safety requirements.

Land Reclamation

Land Reclamation is a process of gain of land from the sea, or wetlands, or other water bodies, and restoration of productivity or use to lands that have been degraded by human activities or impaired by natural phenomena.

Marine Pollution

Direct or indirect introduction by humans of substances or energy into the marine environment (including estuaries), resulting in harm to living resources, hazards to human health, hindrances to marine activities including fishing, impairment of the quality of sea water and reduction of amenities is called marine pollution.

Municipal Waste

Wastes produced by residential, commercial and public services sectors that are collected by local authorities for treatment and/or disposal in a central location is called municipal waste.

New and Renewable Energy Source

These are the energy sources including solar energy, geothermal energy, wind power, hydropower, ocean energy (thermal gradient, wave power and tidal power), biomass, draught animal power, fuel wood, peat, oil shale and tar sands.

Night-soil

These are the contents of cesspools and so forth removed at night, especially for use as manure.

Nitrate

Nitrogen-containing compounds are called nitrates. These nitrates can exist in the atmosphere or as a dissolved gas in water.

Noise Pollution

Sound at excessive levels that may be detrimental to human health is called noise pollution.

ppm./ppb./ppt.

parts per million/ parts per billion/parts per trillion, measures of the concentrations of pollutants in air, water, soil, human tissue, food or other products.

Ozone (O$_3$)

Ozone is pungent, colourless, toxic gas which contains three atoms of oxygen in each molecule. It occurs naturally at a concentration of about 0.01 parts per million (p.p.m) of air. Levels of 0.1 p.p.m. are considered to be toxic. In the atmosphere, ozone provides a protective layer shielding the earth from the harmful effects of ultraviolet radiation on human beings and other biota. In the atmosphere, it is a major component of photo-chemical smog, which seriously affects the human respiratory system.

Ozone Depletion

The process of destruction of ozone in the stratosphere, where it shields the earth from harmful ultraviolet radiation is called Ozone depletion. Its destruction is caused by chemical reactions in which oxides of hydrogen, nitrogen, chlorine and bromine act as catalysts.

ACRONYMS

ACGR	ANNUAL COMPOUND GROWTH RATE		DO	DISSOLVED OXYGEN
AF	Acre feet		EC	Electrical Conductivity
AGR	Annual Growth Rate		Engg.	Engineering
Alk	Alkalinity		EPM	Department of Environmental Planning and Management, Peshawar University
Amsl	Above mean sea level		ERRA	Earthquake Reconstruction & Rehabilitation Authority
ARL	Attock Refinery Limited		F	Fluoride
As	Arsenic		FATA	Federally Administered Tribal Areas
Avg.	Average		Fe	Iron
B.A	Bachelor of Arts		FO	Furnace Oil
B.C.G	Bacillues of Calmette and Guerin		Forhigh	Forested, Shrub and Highlands
B.Sc	Bachelor of Science		FSMP	Forestry Sector Master Plan
BCM	Billion cubic metre		ft	Feet
BDL	Below Detection Limit		GDP	Gross Domestic Product
BDS	Bachelor of Dental Surgery		gm	Gram
Bm_3	Billion cubic metre		GMT	Greenwich Mean Time
BOD	Biological Oxygen Demand		GNP	Gross National Product
BOD)5	BOD for 5 days		GTPS	Gas Turbine Power Station
BTU	British Thermal Unit		GWh	Gega watts hour
BTX	Benzyne Toulene Xylene		H.Hold	Household
C	Centigrade		ha	Hectare
Ca	Calcium		HCC	Haveli Canal Circle
$CaCo_3$	Calcium Carbonate		HCO_3	Bicarbonate
Cft	Cubic feet		HDIP	Hydrocarbon Development Institute of Pakistan
CH_4	Methane		HOBC	High Octane Blending Compound
Cl	Chlorine		hr	Hour
cm_3	Cubic centimeter		HSD	High Speed Diesel
CNG	Compressed Natural Gas		HUBCO	The Hub Power company
CO	Carbon Monoxide		HUM	Humidity
CO_2	Carbon Dioxide		Irrhigh N	High Productivity Irrigated (North)
CO_3	Carbonate		Irrhigh S	High Productivity Irrigated (South)
COD	Chemical Oxygen Demand		Irrlow N	Low Productivity Irrigated (North)
Cond	Conductivity		Irrlow S	Low Productivity Irrigated (South)
Cr	Chromium		IUCN	IUCN-The World Conservation Union
Cu	Copper (Cprum)		JBO	Jute Batch Oil
Cu.m	Cubic metre		JP-1, JP-4	Aviation fuels
Cub.	Cubic		K	Potash Fertilizers
Cusec	Flow of Water Cubic Feet Per Second		K	Postassium
d	Day		KANUPP	Karachi Nuclear Power Plant
D.G. Khan	Dera Ghazi Khan			
D.P.T	Diphtheria, Pertussis and Tetanus			

D.T	Diphtheria and Tetanus		KAPCO	Kot Addu Power Company
dBA	Decibel (International scale of noise level)		KESC	Karachi Electric Supply Corporation
Kg/c/day	Kilogram per capita per day		Kg	Kilogram
Kg/h/day	Kilogram per household per day		NH_3	Ammonia
Kh	Kharif		Ni	Nickel
Km	Kilometer		nm/cm	Nanometer per centimeter
Km_2	Square Kilometer		N-Meth	N-Methyl
KP	Khyber Pakhtoonkhwa		NO_2	Nitrite
l	Litre		NO_3	Nitrate
L.L.B	Bachelor of Law and Legislation		NOx	Nitrogen Oxides
LASMO	Lasmo Oil Pakistan Limited		NRL	National Refinery Limited
LAT	Latitude		NTU	Nephelometric turbidity unit
LBDC	Lower Bari Dawab Canal		OGDC	Oil and Gas Development Corporation
LCC	Lower Chanab Canal		OH	Hydroxyl ion
LDO	Light Diesel Oil		OTPS	Oil Thermal Power Station
LONG	Longitude		OXY	Occidental of Pakistan Inc.
LPG	Liquified Petroleum Gas		P	Phosphorous Fertilizers
m	Metre		PAEC	Pakistan Atomic Energy Commission
M.A	Master of Arts		PASMIC	Pakistan Steel Mills Corporation
M.Sc	Master of Science		Pb	Lead
M.Ton	Metric ton		PCRWR	Pakistan Council of Research in Water Resources
Ma	Million acres			
MAF	Million acres feet		PCSIR	Pakistan Council for Scientific and Industrial Research
MBBS	Bachelor of Medicine and Bachelor of Surgery		PCSP	Pakistan Contraceptive Prevalence Survey
MC	Municipal Committee		PDHS	Pakistan Demographic and Health Survey
Meth	Methyl		PFFPS	Pakistan Fertility and Family Planning Survey
Mg	Magnesium		pH	Power of Hydrogenion
mg	Milligram		PM10	Particles at matter having size 10-micron (Respirable dust)
mg/l	Milligram Per Litre			
MGCL	Mari Gas Company Limited		PMDC	Pakistan Mineral Development Corporation
Micro-s	Microsecond		Po_4	Phosphate
Min	Minutes		POL	Pakistan Oilfields Limited
ml/d	Millilitre per day		ppb	Particle passed per billion
mm	Millimetre		PPL	Pakistan Petroleum Limited
Mn	Manganese		ppm	Particle passed per million
MPN	Most Probable Number		PRL	Pakistan Refinery Limited
MT	Metric Tonnes		PSLM	Pakistan Social & Living Standards Measurement Survey
MTBE	Methyl Tertiary Butyl Ether			
MTT	Mineral Turpentine		Qty	Quantity
MW	Mega Watts		RBC	Reinforcement of Bricks and Cement
MWh	Mega Watts Hour		RCC	Reinforcement of Concrete and Cement
N	Nitrogeneous Fertilizers		Rs.	Rupees
			TSP	Total Suspended Particle

Na	Sodium	TSS	Total Surface Salinity
NA & AJK	Northern Areas and Azad Jamun & Kashmir	S	Sulphur
		Set S	Setteable Solids
NEQS	National Environmental Quality Standards	SGW	Saline Ground Water
NGO	Non-Governmental Organization	SNGPL	Sui Northern Gas Pipelines Limited
NGPS	Natural Gas Power Station	SO_2	Sulphur Dioxide
SNO	Sensor Not Operating	U/S	Up Stream
SO_4	Sulphates	UB	US Barrel
SPS	Steam Power Station	UCC	Upper Chanab Canal
Sq.	Square	W.DIR	Wind Direction
ssagl	Stevenson Screen Above ground level	W.SPD.m/s	Wind Speed Miles per Second
SSGCL	Sui Southern Gas Company Limited	W/M_2	Watt per square meter
STEL	Short Term Exposure Limit	WAPDA	Water and Power Development Authority
T.B	Tuberculosis	WASA	Water and Sanitation Agency
T.T	Tetanus Toxoid	WHO	World Health Organization
TCF	Trillion Cubic Feet	Zn	Zinc
TCU	Time colour unit	μg	Micro Gram
TDS	Total Dissolved Solids	μg/m³	Microgram per cubic meter
TEL	Tapal Energy Limited	μm	Micro Mhose
TEMP	Temperature	μs	Micro Sem
TLV	Threshold Limit Value		
TNTC	Too numerious to be counted		
TOE	Ton of Oil Equivalent		
Tonne	Metric Tonne		
TPS	Thermal Power Station		