

**CURRENT DROUGHT
SITUATION
IN AFGHANISTAN**

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Afghanistan

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CURRENT DROUGHT SITUATION IN AFGHANISTAN

BACKGROUND

Afghanistan is not regarded as a drought prone country, however droughts have been recorded almost everywhere in different years.

There is an old traditional proverb among the people, it is said that (*Kabul be zar bashad be barf ne*), it means that **may Kabul be without gold but not without snow**, or **Kabul can survive without gold but not without snow**. This meaningful proverb describes that the people have been paying a price more than gold price during drought years and they have experienced many snow/rain shortfall or water shortage due to the droughts in the past centuries. The same as Kabul, almost all parts of Afghanistan have passed many droughts.

As it is said that the current drought is not the first one, but the extraordinary losses caused by it are the largest among the past century recorded one. It appears that year by year the intensity and effects of droughts are increasing due to climate warming, increase of population, deforestation, overgrazing and destruction of pastures, misuse/mismanagement of water, and other factors applicable in our country such as continued war and deteriorated family and national economy.

Some figures show that, in some cases, this drought is more devastating than the continued 22 years war in Afghanistan. The mortality rate among the drought displaced people in the new established camps in northern part of the country is reported more than 2 person per days in 10,000 people and the malnutrition rate among the children under 5 years old is reported 26 percent. These figures have never been recorded in the camps of war refugees.

It is estimated that half of population has been affected out of that some 5 million Afghans have little or no access to food and potable water and will require international humanitarian food and other type of aid until next year harvest.

From 1999-2001 the damage to the agricultural sector, just cereal crops, is estimated US\$ 1.3 billion and to the livestock sector US \$ 0.6 billion. Damages to the other sectors are not yet known.

The situation could have been even worst if the international aid had not reduced the impact of drought.

LOCATION, GEOGRAPHY, TOPOGRAPHY AND POPULATION

Afghanistan is a landlocked country in central Asia, between 29°35'-38°40' latitude and 60°31'-74°55' of longitude, with a total area of 642,500 Km² or 64,239,500 ha. It is strategically located, being bounded by Turkmenistan, Uzbekistan, and Tajikistan in the north, China to the north-east, Pakistan to the east and south and the Islamic republic of Iran to the west.

Afghanistan is characterised by its rugged mountainous with snow-covered peak of high altitude, up to 7,500 meter above sea level (m asl), fertile valleys and large desert plains. Lowlands include river valleys and desert regions are located in the northern, western, south-western and south-eastern part while high lands mostly in the central part of the country. (For more detail please see annex I map 1)

From topographic point of view the country can be classified in three groups: low land with 300-500 m asl, medium land with 500-2000 m asl, and mountainous or high land between 2000-7500 m asl. 49 percent of the country has an altitude with more than 2000 m asl. (For more detail please see annex I maps 1, 2)

Total estimated population is 22.23 million, of which 85 percent are directly dependent on agriculture. Up to 3 Million Afghans are still refugees in Pakistan and Iran. Additional 700,000 people are thought to have been displaced by the severe recent drought and fighting to Iran and Pakistan and in the country's few towns and cities.

CLIMATE

Afghanistan is characterised by a continental climate, though the presence of mountains causes many local variations. The high mountain ranges of Hindu Kush, which are the backbone of our country, are normally moderate humid and covered by permanent snow and glaciers at altitude above 5,000 m asl. With a few exceptions of some locations receiving sufficient precipitation in spring (North slopes of Hindu Kush above 1,000 m altitude), the climate is not so favourable for rainfed agriculture without supplementary irrigation: during winter, temperatures are low and precipitation occurs in the form of snow whereas during summer, temperatures are high and precipitation is virtually nil. This unfavourable climate for rainfed agriculture is, however, rather favourable for irrigated agriculture. Snow stored in the Hindu Kush during winter is melting in late spring providing irrigation water at a time when crop water requirement are at their peak in early summer. The runoffs from snow melt, in the spring and summer months when day temperatures are high, are the life-blood of Afghan agriculture.

In Afghanistan, there is a strong relationship between precipitation, length of growing season and altitude: the greater altitude, the greater the amount of precipitation and the shorter growing season due to frost hazard. In the mountainous zone of the country, where the precipitation is sufficient, the limiting factor is frost and availability of agricultural lands. In the flat zone the growing season is sufficient long- even for double cropping under irrigated condition – but the limiting factors are effective rainfall (rainfed agriculture) and irrigation water availability (irrigated agriculture).

Generally, precipitation is directly correlated with altitude varying from less than 100 mm per year at altitudes below 1,000 m and 800 mm per year above 5,000 m. however, there are several particular regions which do not follow this rule due to their surrounding mountains: the Wakhan corridor situated in Badakhshan province, several valley in the provinces of Ghor and Bamyan, in the central part, and the Kabul river plains of Nangarhar province, in the east, receive disproportionately little precipitation whereas Badakhshan, in the north east, (without Wakhan corridor), Takhar, Kunduz and Faryab provinces, in the north, benefit from a disproportionately high amount of precipitation.

The annual distribution of precipitation shows a picture of an essentially **arid country**, with more than 50 percent of the territory, lower than 2000 m asl, receiving 100 mm to 300 mm of precipitation. Mainly the precipitation occurs between December and April. The remaining 50 percent of the country higher than 2000 m asl, except for Ghor, Bamyan and Nangarhar provinces, receives 300 mm to 800 mm of precipitation. In these areas mainly precipitation occur between November and May. With the exception of part of Paktia and Paktika provinces, situated in the south-east of the country are partly under monsoon influence and benefit from rainfall during summer, too.

Usually, in Afghanistan, about 50 percent of the precipitation occurs in winter (January to March), much of which falls in the form of snow in the central mountainous regions. A further 30 percent falls in spring (April to June), and the remained 20 percent during summer and autumn. During summer the temperatures are high.

The driest part of the country Zaranj, in the south-west, receives a normal long-term annual precipitation of 58 mm and most humid part of the country south Salang, in Northeast, receives 1023 mm of precipitation. (For more detail please see annex I map 3).

Generally the deviation of annual precipitation from long term average normal precipitation in different part of the country varies in the ranges of: 60 percent to 240 percent for whole country; 31-267 percent south-western; 35-202 percent southern; 34-182 percent south-eastern, 41-180 percent Eastern, 46-174 percent central; 51-185 percent Western, 51-185 percent northern, 57-150 percent

north-eastern and from 59-148 percent north-western part of the country. For more detail please see bellow table.

Long Term Average Maximum, Normal and Minimum amount of
Precipitation in mm and the deviation of Max. and Min from Average Normal

| Zones | Meteo Station | Long Term Average | | | Deviation from A. Normal in % | |
|-------|-------------------------|-------------------|--------|-------|-------------------------------|------|
| | | Max. | Normal | Min. | Max. | Min. |
| C | Bamyan | 382.4 | 138.6 | 57.7 | 276 | 42 |
| E | Paghman | 620.7 | 419.6 | 223.7 | 148 | 53 |
| N | Panjab | 440.1 | 284.8 | 44.4 | 155 | 16 |
| T | Jabal Saraj | 739.2 | 465.2 | 110.3 | 159 | 24 |
| R | Cheghcheran | 246.5 | 187.8 | 137.5 | 131 | 73 |
| A | Shahrak | 417.0 | 276.1 | 60.3 | 151 | 22 |
| L | Ghalmin | 363.1 | 219.9 | 125.6 | 165 | 57 |
| | Kabul | 547.8 | 316.0 | 164.9 | 173 | 52 |
| | Kariz-e-Mir | 771.0 | 403.7 | 207.6 | 191 | 51 |
| | Lahl | 429.4 | 227.4 | 168.0 | 189 | 74 |
| | Average for central | 495.7 | 293.9 | 130.0 | 173.8 | 46.4 |
| NORTH | Taleqan | 908.3 | 542.6 | 348.8 | 167 | 64 |
| EAST | Salang-North | 1450.6 | 1018.5 | 376.5 | 142 | 37 |
| | Salang-South | 1354.0 | 1023.3 | 677.1 | 132 | 66 |
| | Faizabad | 791.0 | 501.3 | 300.1 | 158 | 60 |
| | Average for north-east | 1126.0 | 771.4 | 425.6 | 150.0 | 56.8 |
| | Sheberghan | 434.6 | 231.0 | 116.5 | 188 | 50 |
| NORTH | Kunduz | 560.8 | 336.0 | 193.0 | 167 | 57 |
| | Mazar-e-Sharif | 379.1 | 189.1 | 87.4 | 200 | 46 |
| | Average for north | 458.2 | 252.0 | 132.3 | 185.2 | 51.4 |
| NORTH | Qhades | 450.5 | 344.8 | 210.9 | 131 | 61 |
| WEST | Maimana | 582.1 | 353.6 | 200.3 | 165 | 57 |
| | Average for north-west | 516.3 | 349.2 | 205.6 | 147.6 | 58.9 |
| WEST | Herat | 411.9 | 222.5 | 112.5 | 185 | 51 |
| | Average for west | 411.9 | 222.5 | 112.5 | 185 | 51 |
| SOUTH | Zaranj | 185.9 | 58.0 | 11.3 | 321 | 19 |
| WEST | Farah | 193.0 | 90.1 | 38.0 | 214 | 42 |
| | Average for south-west | 189.5 | 74.1 | 24.7 | 267.4 | 30.8 |
| SOUTH | Bust | 196.0 | 92.7 | 32.4 | 211 | 35 |
| | Quandahar | 311.4 | 161.4 | 57.3 | 193 | 36 |
| | Average for south | 253.7 | 127.1 | 44.9 | 202.2 | 35.2 |
| SOUTH | Ghazni | 551.2 | 284.8 | 90.2 | 194 | 32 |
| EAST | Qualat | 461.3 | 281.3 | 144.8 | 164 | 51 |
| | Muqur | 451.1 | 239.5 | 49.3 | 188 | 21 |
| | Average for south-east | 487.9 | 268.5 | 94.8 | 182.0 | 34.6 |
| EAST | Jalalabad | 408.1 | 171.2 | 42.5 | 238 | 25 |
| | Khost | 657.3 | 449.9 | 206.2 | 146 | 46 |
| | Gardez | 521.1 | 319.3 | 141.2 | 163 | 44 |
| | Laghman | 468.9 | 251.3 | 117.2 | 187 | 47 |
| | Logar | 372.2 | 222.0 | 101.4 | 168 | 46 |
| | Average for east | 485.5 | 282.7 | 121.7 | 180.4 | 41.4 |
| | Average for Afghanistan | | | | 240 | 60 |

Data compiled from Precipitation regime in Afghanistan, Kabul 1981.

METEOROLOGICAL STATIONS AND AVAILABILITY OF DATA

Climatological data recording started from 50s and 60s in the country. Prior to the war 43 meteorological stations and 260 sub-stations and 140 hydrological posts were active in different parts of the country and the data were daily and monthly reported to the central Meteorological Department in Kabul and regularly published. The access to those publications is extremely laborious, if not possible, since most of them were looted or fired during fractional fighting. Some of stations were destroyed prior to the Soviet withdrawal in 1989 and most of them were looted or destroyed during fractional fighting. The real problem, however, remain with statistics data after 1989.

At present, as per report, only 6 six airports meteo-stations, run by Taliban Authority, are semi active.

Recently some UN and aid agencies have established agro-meteostations, with the basic equipment, in different part of the country such as: 5 agro-meteo-stations by FAO/UNDP programme and other 10 stations by 3 different international NGOs. These stations are located in the areas where these agencies are active and the collected data are shared between these agencies too.

The relevance of weather information is multiple and the existence of regular updates generally facilitates the response's preparedness to natural disasters by the national and international communities; similarly, it can facilitate the understanding and anticipation of production and price variation.

In the annex III you can find long term monthly average maximum, minimum and normal precipitation data for different stations in Afghanistan.

AGRICULTURE AND LIVESTOCK

The political instability prevailing in Afghanistan makes it extremely difficult to obtain reliable information on basic agricultural and livestock indicators. Most of the information presented below dates back from years prior to 1978 or are estimated.

The cultivable area has been estimated at 8 million ha, which is 12 percent of the total area. Out of that, 3.4 million ha, which is 5 percent of the total area is under irrigation. The 5 percent of area under irrigation produce 85 percent of all agricultural output.

In 1978, the last year of peace, the country was self-sufficient in food and was a significant exporter of agricultural products.

The total grazing area or pastures in the country is around 54.7 million ha of land from which 16.2 million ha is winter pasture, 16.03 million ha spring and fall pastures and 22.46 million ha is summer pastures. Most of winter pastures are located in the desert plain of south-west and the spring and summer pastures are located in central and north-east part at the altitude ranging between 2000 to 4500 m asl.

Livestock was a main sector in the economy of the country. As per FAO/UNDP livestock headcount surveys in 1995 and 97/98, the total population of livestock was estimated 3.0 million cattle and 22.8 million sheep and goat.

The total areas under evergreen forests, mainly in the south-east part of the country, were 2.2 million ha prior to the war, which consisted 3.4 percent of the total territory. But, unfortunately due to lack of law and regulation in the country, they are reduced to 2.2 percent. Pistachio and wild almond forest, in the northern part of the country, was around 0.3 million ha, now reduced significantly.

WATER RESOURCES

A: SURFACE WATER

Based on the hydrographic systems, the country river basins generally can be divided into three 3 large river basins: The **Amu Darya basin** in the north separated by the Hindu Kush mountain range from the **Desert (Systan-Helmand) basin** in the south-west, and the **Indus (Sind) basin** in the East.

I-AMU DARYA BASIN OR NORTHERN BASIN

Northern basin can be divided into three main sub-basins:

1. NORTH-EASTERN RIVER BASINS

Pamir/Panj, Kokcha and Kunduz rivers with a total drainage area of 86,000 km², which drain towards the Ural sea and the main discharge forming catchment areas of them are located above 4,000 m asl.

2. NORTHERN RIVER BASINS

Murghab, Kashan, Kushk and Gulran flow out to Turkmenistan, Samangan, Balkhab, Saripul and Shirin Tagab do not join Amu Darya; and Murghab, Kashan, Kushk and Gulran flow out to Turkmenistan; with a total basin area of 116,000 km². Only Murghab river has a main discharge forming catchment area above 4,000 m asl. All others have main catchment area lower than 3,800 m asl.

3. HARI RIVER (HARIRUD) BASIN

With a total basin area of 39,000 km², it has a main discharge forming catchment area up to 4,000 m asl.

II-DESERT (SYSTAN -HELMAND) BASIN

4. SOUTH-WESTERN RIVER (SYSTAN) BASINS

Farahrud, Harut (Adraskan), Gulistan (Bakwa desert), Khashrud, Kajrud rivers. All of them drain into depressions situated along the Iranian border; all of them have a main catchment area lower than 3,500 m asl.

5. HELMAND RIVER BASIN

Ghazni, Upper Helmand at Kajaki dam, Musa Qala, Arghandab, Lower Helmand rivers with a total 166,000 km². Only the upper Helmand river and its tributaries such as Siasang, Markhana, Panjab and Amrestan rivers have the main discharge forming catchment areas at an elevation around and above 4,000 m asl.

6. SOUTHERN RIVER BASINS

Only ephemeral rivers, outflow to Baluchistan/Pakistan

III-INDUS BASIN

7. SOUTH-EASTERN RIVER BASINS

Gomal, Margo, Shamal, Kurm rivers with total basin area 19,000 km², with the main discharge forming catchment areas at an elevation lower than 3,500 m asl. And outflow to NWFP/Pakistan;

8. KABUL RIVER BASIN

Maidan, Logar, Panjshir, Tagab, Laghman, Surkhrud, and Kunar rivers with total basin area 54,000 km². In the most left tributaries of Kabul river such as Panjsher, Laghman and Kunar rivers, the main discharge forming catchment areas are located above 4,000 m asl.

(For more detail please see annex III)

As per FAO/UNDP estimate in 1996, the surface water resources are sufficient to support the irrigation of some 5.3 million ha of agricultural land or a volume of 2,840 m³ of surface water per head per year in the country.

Surface water quality is excellent in the upper basins of all rivers throughout of the year and good in the lower basins in spite of large irrigated areas.

In Afghanistan there are 12 dams higher than 15 m: Qhargha, Ghazi, Kharwar and Sorkhab in central; Sarobi, Naghlu and Darunta in eastern; Dahala, Kajaki in south-west; Sultan and Sardeh in southern and Pulekhumri in the northern part of the country. These dams regulate different rivers' flow for irrigation and hydropower generation.

There is a considerable potential for hydropower generation, both by large dams and micro-hydropower stations. Kunar river in the south-east has the biggest potential in hydropower generation.

(For more detail on river basins main features please see annex II)

B: GROUNDWATER

Afghanistan possesses huge reserves of stored ground water. As per FAO/UNP, 1996, estimate the annual potential reserves of the ground water in the country is about 18 billion m³, at present about 3 billion m³ is under used and in the future it can be increased up to about 8 billion m³ in irrigation and water supply sectors. Recently, especially during the drought years, there has been a large development of groundwater use in the irrigation and water supply sectors in the country.

IRRIGATION

As per FAO/UNDP estimation in 1997, due to continued war and instability in the country, out of 3.4 million ha irrigated before 1978, only 30 percent (1.02 m ha) is estimated to be managed satisfactory, 20 percent (0.68 m ha) has poor on-farm water management, 10 percent (0.34 m ha) has been destroyed by direct impact of non stopping war and 40 percent (1.36 m ha) is damaged due to lack of maintenance or abandoned by the farmers.

Irrigation systems can be divided into two main categories:

I-SYSTEMS WITH SURFACE WATER RESOURCES

These systems can be divided into 3 main sub-groups:

1. SMALL-SCALE INFORMAL SURFACE WATER SYSTEMS

These are the traditional irrigation systems, many of them being established for centuries. In the past, maintenance and reconstruction were generally arranged on a traditional informal or communal village basis and water rights were determined and recognised in a similar manner. Technical knowledge and operational systems were thus dependent on traditional community structures, and were largely retained in the memory of individuals.

2. LARGE-SCALE INFORMAL SURFACE WATER SYSTEMS

They are located mainly in the plains and along the main valleys. Although they are called informal, their operation and maintenance was highly structured. Repair and maintenance works can mobilise very large quantities of labour for a long period and farmers in the command area have to contribute in labour, cash or kind. Parts of these schemes have been abandoned because of sterilisation of the land (waterlogging and salinization), particularly in the Harirud, Farahrud and Helmand valleys.

3. FORMAL IRRIGATION SCHEMES

Formally organised large-scale irrigation systems are a relatively recent innovation. However, by the late 1970s five large-scale modern irrigation systems had been built and were in operation: the Helmand-Arghandab irrigation systems in the south-west, the Nangarhar Irrigation system in the east, the Sardeh irrigation system in the south, the Kunduz-Khanabad system in the northern and Parwan Irrigation system in the central part of the country. War and recent drought affected all these schemes. Some schemes were operated under private land ownership agreements, while others were operated as state farms where land ownership was deeded to the State.

II-SYSTEMS WITH GROUND WATER RESOURCES

As per data collected before the war, more than 15% of Afghanistan's traditional irrigated land take their water from traditional underground systems such as *Karezes (Qanats)*, springs and shallow wells (in the local language it is called *Arhad*). Each of them are described below:

1. KAREZES OR QANATS

Karezes are underground systems, which tap groundwater by gravity from the aquifer to provide water for the cultivation of crops and drinking purposes. There are a total number of 6,741 *Karezes* in the country. These *Karezes* irrigate around 167,750 hectares of land.

2. SPRINGS

There are about 5,558 springs that irrigate around 187,430 hectares of land.

3. SHALLOW WELLS (ARHADS)

As per data there were about 8,595 shallow wells (*Arhads*) before the war, that irrigated about 12,060 hectares of land.

Irrigation water use efficiency in the traditional and formal irrigation systems of the country is very low and needs more attention.

DROUGHTS IN THE COUNTRY

Afghanistan is not regarded as a drought prone country, however droughts have been recorded almost everywhere in different years. The most relevant one was recorded in 1970-71 in almost all the country but it particularly hit south-western, central, north-western and northern regions causing displacement of people, loss of animals and a major food shortage; other droughts happened in 1948 and 1955 in southern part of the country, in 1961-62 in central part and in 1973 in central and northern areas, and 1977 in north-western regions. Some minor droughts have been recorded in 1981 and 1992 in Ghazni, Ghor and Farah provinces. None of these recorded droughts had the severity of the current drought.

As per next page table (drought records in different parts of the country) the drought in the country can be classified in:

- Local drought in small part of the country, which occurs after each 3-5 years,
- Zonal drought, which occurs each 9-11 years, and,
- Countrywide drought, which occurs after 20 to 30 years.

The recent drought is multi-dimensional in its effect and severity, and exceptional compared to the previous droughts. It is a worst drought in recent memory and not repeated in the last 50 years (or may be more) in Afghanistan. The drought in seventies had affected only some part of the country and had lasted only 2 years, but the current drought has been lasting for the last three to four years.

The recent drought affecting Afghanistan is continuing to take a toll on rural and urban areas. The area currently affected by the drought is countrywide except for few places located in the valleys of big perennial rivers.

Drought records in different parts of the country

| Zone | Meteo station | Winter drought | Spring Drought | Winter/Spring drought | Round the year drought | Years of observation |
|-------|----------------|-----------------|-----------------|-----------------------|------------------------|----------------------|
| C | Bamian | 1974,1975 | 1971 | 1971 | 1971 | 1969-1978 |
| E | Paghman | 1974 | 1970 | 1970,1974 | 1974 | 1969,1970,1972-1978 |
| N | Panjab | 1977,1978 | 1977,1978 | 1977,1978 | 1977,1978 | 1966-1978 |
| T | Jabul Saraj | 1971 | 1971 | 1968,1971 | 1968,1971 | 1962-1978 |
| R | Cheghcheran | 1973 | 1969 | 1969 | 1970 | 1969-1978 |
| A | Shahrak | 1971 | 1971 | 1971 | 1971 | 1969-1978 |
| L | Ghalmin | 1966,1970 | 1970,1974, 1978 | 1970 | 1970 | 1966-1978 |
| | Kabul | 1962,1970 | 1970,1977 | 1962,1970,1977 | 1962,1970 | 1957-1978 |
| | Kariz-e-Mir | 1962,1967 | 1970,1971, 1974 | 1962,1970,1974 | 1962,1970 | 1958-1978 |
| | Lahl | 1968 | 1970 | 1970,1971 | 1970,1971 | 1966-1978 |
| NORTH | Taleqan | 1977 | 1977,1978 | 1977 | 1977,1978 | 1969-1978 |
| /EAST | Slang,North | 1970,1971 | 1970,1971 | 1970,1971 | 1970,1971 | 1960-1978 |
| | Salan,South | 1963,1970 | 1968,1977 | 1970,1977 | 1970 | 1963-1978 |
| | Faizabad | 1970 | 1970,1971 | 1970,1971 | 1971 | 1964-1978 |
| NORTH | Sheberghan | 1966,1970, 1971 | 1977 | 1970,1971 | 1970,1971 | 1964-1978 |
| | Kunduz | 1963,1966, 1970 | 1970,1977 | 1970,1971,1977 | 1970,1971 | 1957-1978 |
| | Mazar-e-Sharif | 1951,1966 | 1950,1951, 1977 | 1951,1977 | 1950,1951 | 1949-1952,1957-1978 |

| | | | | | | |
|----------------|-----------|-------------------------|------------------------------|-------------------------|------------------------------|---|
| NORTH/ WEST | Qades | 1967,1971 | 1977 | 1971,1977 | 1971 | 1967,1970-1978 |
| | Maimana | 1963,1966, 1971 | 1977 | 1966,1971,1977 | 1971,1977 | 1951-1955,1959-1978 |
| WEST | Herat | 1961,1963, 1971 | 1944,1946, 1958,1965,78 | 1948,1951,1958 ,1971 | 1948,1951,1958 ,1971 | 1942,1949,1951,1952,1955,1956, 1958-1978 |
| SOUTH/ WEST | Zaranj | 1972,1977 | 1969,1975 | 1973,1977 | 1973,1977 | 1970-1978 |
| | Farah | 1952,1961, 1971 | 1947,1949, 1965,1966 | 1949,1950,1973 | 1949,1950,1973 | 1944-1947,1949-1954,1960-1978 |
| SOUTH | Bust | 1961,1970 | 1966,1968,19 69,1974,1978 | 1961 | 1961,1968,1973 | 1960-1978 |
| | Kandahar | 1949,1961, 1971 | 1944,1958, 1971,1974,78 | 1955,1971,1973 | 1955,1971 | 1944-1955,1957-1961,1964-1978 |
| SOUTH/ EAST | Ghazni | 1949,1962, 1967,1977 | 1946,1949, 1967 | 1949,1967,1977 | 1949,1967 | 1944-1947,1949-1952,1957-1978 |
| EAST | Qalat | 1970,1971 | 1971 | 1971 | 1970,1971 | 1968-1978 |
| | Muqor | 1967,1969 | 1967,1971 | 1967 | 1967 | 1967-1978 |
| EAST | Jalalabad | 1948,1951, 1963,1955 | 1946,1943, 1955 | 1948,1943,1955 | 1948,1951,1971 ,1943,1955 | 1943-1948,1950- 1953,1955,1958-1978 |
| | Khost | 1963 | 1970 | 1970,1971 | 1969,1970,1971 | 1962-1978 |
| | Gardez | 1950,1955, 1970 | 1950,1956 | 1947,1950,1970 | 1947,1950,1970 | 1944-1950,1952-1956,1964-1978 |
| | Laghman | 1970,1978 | 1970,1974 | 1970,1974,1978 | 1970,1974 | 1965-1978 |
| | Logar | 1970,1971 | 1970 | 1970 | 1970 | 1968-1978 |

Data compiled from Precipitation regime in Afghanistan, Kabul 1981.

EFFECTS OF CURRENT DROUGHT

LIVELYHOOD

A preliminary estimate suggests that at least half of the population may be affected by the drought: 3 to 4 million people severely and another 8 to 12 million are under threat of famine and starvation. An estimated 700,000 People, the figure seems to be rising rapidly, have abandoned their homes in search of food, water and fodder. Around 300,000 of them have fled to neighbouring Iran and Pakistan. More than 400,000 people have moved to the closest and safest cities (become internally displaced). Still the people are coming to the newly established camps inside Afghanistan. Lack of water, food and shelter for Internally Displaced People IDPs is leading to malnutrition, disease and death. According to the report, in the newly established IDP camp in Mazar, the acute malnutrition rate among the children under five is 24.6 percent and mortality rate among these IDPs, in some cases, reported up to 2 Persons per day in 10,000 people.

Many others who remained behind in the drought hit areas are in a dangerous position without access to adequate supply of food and water, facing the dangers of starvation and disease. Mostly the poorest families remained in the area due to lack of travel expenses, lack of job opportunity in the Afghanistan's cities, and mistreatment and abuse of refugees in the neighbouring countries. Another important reason, which has played a significant and positive role, is the food aid and other type of help provided through aid agencies in the drought hit area. This encourages and gives hope to the people to remain and not migrate.

A survey shows that in many urban areas, with inflow of IDPs hit by the drought and war, the main threat to household food security is underemployment. Female headed households are particularly susceptible to food insecurity as the main source of income is provided by child labor (collecting scrap and paper for sale, selling water, repairing tires, shining shoes) while the women beg for money.

Large number of population in the urban and rural areas has been surviving on tea and bread. Most families have eaten the seed that they normally keep for sowing their land for the next harvest. Consumption of wild food (famine foods such a wild type of sugarbeet found in Ghor and Badghis provinces, wild type of grass such as *Seech* etc. in some central and northern part of the country) is wide spread. In some isolated districts of Badakhshan province the people have exhausted their wheat stock and now they are surviving on dried mulberry, and some time on Chickling peas locally called *Kolol* as in Badakhshan *Patak*. This grain is used for livestock as fodder and its consumption by human being paralyses the consumer.

More displacement and immigration occurred from those areas where the people are dependent on rainfed wheat and barley (mostly northern and central parts of the country). There the situation requiring an emergency response. In some cases the situation is aggravated by the fact that district has no road link to the outside world and can only be reached on horse back or on foot.

(For more detail on Afghanistan crisis districts and internal displacement/ drought affected areas please see annex I map 5 and 6, and annex IV Photos).

PRECIPITATION DURING THE YEAR 2001

The winter 2001 witnessed around 5 to 20 percent more snowfall, than last winter, which itself was a drought year. It is important to mention that the snow reserve in the central high land of the country was better but due to the lack of spring rainfall, which has increased the air temperature, the snow reserves has exhausted faster. At the beginning of the spring the rivers discharges were higher than last year but decreased significantly during spring.

Precipitation 2001 compared with Long Term Normal Precipitation (LTRN)

| Months | Kabul | | | Mazar-e-Sharif | | | Herat | | | Jalalabad | | | Ghazni | | | Kandahar | | |
|----------|-------|------|---------|----------------|------|---------|-------|------|---------|-----------|------|---------|--------|------|---------|----------|------|---------|
| | 2001 | LTNR | Percent | 2001 | LTNR | Percent | 2001 | LTNR | Percent | 2001 | LTNR | Percent | 2001 | LTNR | Percent | 2001 | LTNR | Percent |
| January | 32 | 34 | 94.1% | 22 | 28.4 | 77% | 15.2 | 49.2 | 30.9% | 2.6 | 17.4 | 14.9% | 35 | 41.1 | 85.2% | 0 | 49.1 | 0.0% |
| February | 36 | 56.7 | 63.5% | 34 | 33.9 | 100.3% | 9.4 | 40.2 | 23.4% | 2.5 | 25.3 | 9.9% | 5 | 48.1 | 10.4% | 20 | 35.4 | 56.5% |

Current drought situation in Afghanistan

August 2001

| | | | | | | | | | | | | | | | | | | |
|-----------|------|------|--------|----|------|-------|------|------|-------|------|------|-------|------|------|--------|-----|------|--------|
| March | 28.5 | 64.4 | 44.3% | 30 | 42.6 | 71% | 28.7 | 51.6 | 55.6% | 58.9 | 37.1 | 159% | 24 | 63.2 | 38.0% | 42 | 28.5 | 147.4% |
| April | 30.6 | 81.7 | 37.5% | 0 | 31 | 0.0% | 0 | 30 | 0.0% | 5 | 33.4 | 15% | 30.5 | 53.2 | 57.3% | 0.1 | 17.1 | 0.6% |
| May | 1.4 | 23.3 | 6.0% | 0 | 11.5 | 0.0% | 0 | 6.3 | 0.0% | 0.6 | 16.1 | 4% | 0 | 20.3 | 0.0% | 0 | 4.1 | 0.0% |
| June | 3.9 | 1.1 | 350 % | 0 | 0.1 | 0.0% | 0 | 0 | 0.0% | 11.5 | 1.1 | 1045% | 1.5 | 1.9 | 7.9% | 0 | 0.1 | 0.0% |
| July | 0.24 | 7 | 3% | 0 | 0 | 00% | 0 | 0 | 0.0% | 15 | 6.1 | 246 | 0.5 | 16.4 | 3.0% | 0 | 2 | 0.0% |
| August | | 1.2 | | | 0 | | | 0 | | 0 | 4.9 | | | 2.4 | | | 0.4 | |
| September | | 1.9 | | | 0.2 | | | 0 | | | 6.2 | | | 0.5 | | | 0 | |
| October | | 2.2 | | | 4.6 | | | 1.2 | | | 2.7 | | | 0.9 | | | 1.3 | |
| November | | 19.5 | | | 13.7 | | | 9.9 | | | 7.6 | | | 11.8 | | | 5.6 | |
| Dec. 2000 | 42 | 23 | 182.6% | 19 | 23.1 | 82.3% | 24.3 | 34.1 | 71.3% | 13 | 13.3 | 97.7% | 37 | 26 | 142.3% | | 17% | |

(For graphs and data of long term average maximum, minimum and normal precipitation please see annex III)

WATER RESOURCES

A: SURFACE WATER

The current drought has not much affected the discharges of the main rivers with main discharge-forming basin above 4,000 m asl, but the discharges of the tributaries with lower catchment area are affected. In these types of rivers water can flow (but very low than the normal discharge) up to the end of their normal destination. In territory of Afghanistan there is enough water for the land adjacent to these rivers and no effect of drought are seen in their valleys. But drought effects are seen in the adjacent valleys, where the main river does not provide irrigation water and the tributaries provide it. Such case can be seen in lower and left tributaries of Kabul river basin in the eastern part of the country but upper and middle part of Kabul river basin and right tributaries are affected by the drought. Also this case applicable in the north-east rivers basins.

The rivers with a main discharge-forming catchment basin between 3,000 to 4,000 m asl, have enough water in the upper and middle parts but in the lower part shortage of water is seen. In all tributaries of these rivers the shortage of water is acute. Mainly these rivers/ valleys are located in central, northern, north-western, south-western and southern parts of the country.

In the rivers with main discharge-forming basin in an elevation lower than 3,000 m asl an acute shortage of water is seen. Even, in some cases, the groundwater level in the valley of these rivers has declined. These types of rivers are mainly located in the northern, south-western and southern part of the country.

All valleys and low land plains with an altitude lower than 2000m asl, except for the valleys of main rivers crossing the area, which consist most of the rainfed areas are affected by the drought very seriously.

As per reports received from the field all ephemeral rivers dried out in the early spring. The following main perennial rivers dried out in early or mid summer: Arghandab, Arghistan rivers in south-west, Harirud river in the north-west, ShirinTagab and Cheshma-e-Shafa rivers in the north, upper part of Kabul river in the central, Jilga river in the south.

The following perinial rivers have reduced significantly their discharge in early summer and can now be crossed on foot: Helmand river in south-west (can be crossed at Lashkar gah), Farahrud in the west, Morghab river in the north-west and Kunduz river in the north.

During the recent drought water level in the existing reservoirs of the country reached to the critical and even some of them completely dried up: Dahala in Kandahar, Qargha, Band-e-Ghazi in Kabul, Sorkhab and Kharwar in Logar province and Sultan and Sardeh in Ghazni province.

B: GROUNDWATER

As per an estimate all traditional ground water irrigation systems have reduced or dried up completely, 60 to 70 percent of *Karezes* are not in use and 85 percent of shallow wells were dried out.

The population dependent to the traditional groundwater irrigation systems such as *Karizes/Qanats* and shallow wells (Locally called *Arhad*) has suffered particularly from the failure or reduction of discharge of these systems. The main reasons for low discharge or failure are low precipitation and consequently low recharge of ground water. Beside mentioned problems, boring of deep wells close to these *Karezes* and shallow wells had an adverse effect on the production of these traditional irrigation systems. This has threatened the sustainability of these traditional systems in the future too. It must be mentioned that most of *Karezes* are located in the areas badly hit by the drought.

In the most of urban areas the ground water level has declined significantly, with the most vulnerable households those relying on shallow wells. As the water table continues to fall, around 0.5 to 3 m each month depending to the place, the poorer families are unable to dig their wells deeper and thus are forced to get water from communal wells. Many of these wells, often located in the mosques, have either already dried up, forcing people (often children) to walk long distances to meet their daily water need. As per a report received from Andkhowi district of Faryab province all community shallow wells were dried up and all population is dependent to a deep well, buying 200 litres of drinking water for Afs. 100,000 (US\$ 0.7). The draw down of ground water level in the area is estimated 2 to 3 meters in a month. The Shirin Tagab river, which is passing through Andkhowi and was recharging the ground water in the normal years, now is dry without any flow.

(For photos please see annex IV)

FOOD PRODUCTION AND DEMAND

At the beginning of the spring the rivers discharges were higher than last year and for this reason about 14 percent higher wheat production harvested from the irrigated area more than 2000, but still about 25 percent less than 1999. Due to lack of rainfall in spring the production of rainfed crops (wheat and barley) have reduced significantly, about 40 percent less than even last year's extremely low output. In some parts of northern region the rainfed crops (wheat, barley) dried out completely. Moreover due to around 30 percent shortage of water flow in Kunduz river, a significant reduction in the cultivation of paddy has occurred. Kunduz valley in the north, is one of the best and main producers of rice in the country.

In some part of the country food shortage has already reached a stage of crises and is poised to worsen in the coming months. The purchasing power of the people has decreased significantly.

There is an acute shortage of seeds specially drought tolerant seeds. The required amount is given in the FAO/WFP assessment mission report 2001.

GRAZING PASTER AND LIVESTOCK

Nomades (*Kuchies*) and farmers, due to drought and acute shortage of fodder, low germination or drying up of pastures and lack of potable water in the grazing area, have already sold or eaten an estimated 40 percent and in some cases they have exhausted their herds. The exact number and percentage of damages could only be known after an assessment survey.

Also due to low yields in the agricultural lands, farmers have insufficient quantities of fodder for the coming winter.

Movement of Nomads (Kochies) has occurred earlier than normal in response to the drying up of lowland pasture. The drought had paralysed nomad activities too. Competition over pasture access between local communities and Nomads is increasing.

Shortage of precipitation, over grazing and shifting of pastures to the agricultural land can be counted the main problems in the pastoral field.

NEEDS

- Implementation of quick impact emergency drought mitigation projects such as food for subsidised bread, food for work, food for asset creation and others, and link of these projects to the rehabilitation/ development programmes. For example: food for work for canal and *Karez* cleaning, construction of regulating ponds for *Karezes* and springs' flows, small rainwater harvesting projects, etc.
- Local water security for irrigation and drinking purposes. It is about time that attention should be given to preserving rainwater including runoff and floodwater through simple Water Harvesting techniques. With these techniques extra surface water can be provided for rainfed crops/trees, pastures, and increase/recharge of soil moisture and ground water reserves. Also providing drinking water in the pastures, rural and urban areas for human being and livestock. Without local water security, local food production can not be secured in any case even though all other component for food security such provision of sufficient high quality seeds, fertiliser and plant protection activities be done.
- Increase of Irrigation Water Use Efficiency through:
 1. Rehabilitation of irrigation systems to reduce water losses and reduce repair time for the farmers,
 2. Training of Water Masters (persons responsible for water distribution in the irrigation systems and locally called *Mirabs*) and Farmers to adopt methods and techniques for efficient use of irrigation water in their fields,
 3. Procurement of drought resistant seeds, changing the type of crops and sowing time and hire appropriate and cheap technology,
- Provision of seed and fertilizer for the coming sowing season,
- Introduction of new varieties of drought resistant trees, bushes and grasses in drought hit part (Pastures) of the country,
- Provision of farm power, such as oxen, tractors, tools and equipment,
- Discourage using of ground water for irrigation and drinking purposes through deep bore wells without technical study of the area and discouraging boring of deep wells in the range of activities of existing tradition ground water irrigation systems such as *Karezes* and *Arhads*, and shallow wells for drinking purposes.
- National water security for national food security: Regulating and diversion of rivers through construction of dams, reservoirs and canal systems to provide enough water for existing and new irrigated lands in different parts of the country.

MAIN SOURCES OF INFORMATION

- Report of the FAO/WFP Crop and Food Supply Assessment Mission to Afghanistan, 7 June 2001
- Food Security Strategy for Afghanistan, prepared by Peter Sloane for the Working Team on Food Security, April 2001
- Strategy of the Assistance Community in Response to the Drought in Afghanistan 1 June 2000 - 31 May 2001
- Afghanistan Agriculture Strategy, prepared by FAO, Rome, January 1997
- Precipitation regime in Afghanistan, prepared by A. Wahed and A. Hashem, Kabul, 1981
- Engineering hydrology of rivers of Afghanistan, Edward A. Garbowski, 1989
- Survey on land and water resources. Afghanistan, FAO Kabul, 1965
- Natural geography of Afghanistan
- National Atlas of Afghanistan, Geokart, Poland, 1992

Annex I:

Long Term Average Maximum, Normal and Minimum amount of
Precipitation in mm and the deviation of Max. and Min from Average Normal

| Zones | Meteo Station | Long Term Average | | | Deviation from A Normal in | |
|--------------------------------|------------------------|-------------------|--------|-------|----------------------------|-----------|
| | | Max | Normal | Min | Max | Min |
| CENTRAL | Bamvan | 382.4 | 138.6 | 57.7 | 276 | 42 |
| | Paghman | 620.7 | 419.6 | 223.7 | 148 | 53 |
| | Panjab | 440.1 | 284.8 | 44.4 | 155 | 16 |
| | Jabal Saraj | 739.2 | 465.2 | 110.3 | 159 | 24 |
| | Cheghcheran | 246.5 | 187.8 | 137.5 | 131 | 73 |
| | Shahrak | 417.0 | 276.1 | 60.3 | 151 | 22 |
| | Ghalmin | 363.1 | 219.9 | 125.6 | 165 | 57 |
| | Kabul | 547.8 | 316.0 | 164.9 | 173 | 52 |
| | Kariz-e-Mir | 771.0 | 403.7 | 207.6 | 191 | 51 |
| | Lahl | 429.4 | 227.4 | 168.0 | 189 | 74 |
| | Average for central | 495.7 | 293.9 | 130.0 | 173.8 | 46.4 |
| NORTH EAST | Talecan | 908.3 | 542.6 | 348.8 | 167 | 64 |
| | Salang-North | 1450.6 | 1018.5 | 376.5 | 142 | 37 |
| | Salang-South | 1354.0 | 1023.3 | 677.1 | 132 | 66 |
| | Faizabad | 791.0 | 501.3 | 300.1 | 158 | 60 |
| | Average for north-east | 1126.0 | 771.4 | 425.6 | 150.0 | 56.8 |
| NORTH | Sheberghan | 434.6 | 231.0 | 116.5 | 188 | 50 |
| | Kunduz | 560.8 | 336.0 | 193.0 | 167 | 57 |
| | Mazar-e-Sharif | 379.1 | 189.1 | 87.4 | 200 | 46 |
| | Average for north | 458.2 | 252.0 | 132.3 | 185.2 | 51.4 |
| NORTH WEST | Ohades | 450.5 | 344.8 | 210.9 | 131 | 61 |
| | Maimana | 582.1 | 353.6 | 200.3 | 165 | 57 |
| | Average for north-west | 516.3 | 349.2 | 205.6 | 147.6 | 58.9 |
| WEST | Herat | 411.9 | 222.5 | 112.5 | 185 | 51 |
| | Average for west | 411.9 | 222.5 | 112.5 | 185 | 51 |
| SOUTH WEST | Zarani | 185.9 | 58.0 | 11.3 | 321 | 19 |
| | Farah | 193.0 | 90.1 | 38.0 | 214 | 42 |
| | Average for south-west | 189.5 | 74.1 | 24.7 | 267.4 | 30.8 |
| SOUTH | Bust | 196.0 | 92.7 | 32.4 | 211 | 35 |
| | Quandahar | 311.4 | 161.4 | 57.3 | 193 | 36 |
| | Average for south | 253.7 | 127.1 | 44.9 | 202.2 | 35.2 |
| SOUTH EAST | Ghazni | 551.2 | 284.8 | 90.2 | 194 | 32 |
| | Qualat | 461.3 | 281.3 | 144.8 | 164 | 51 |
| | Muqur | 451.1 | 239.5 | 49.3 | 188 | 21 |
| | Average for south-east | 487.9 | 268.5 | 94.8 | 182.0 | 34.6 |
| EAST | Jalalabad | 408.1 | 171.2 | 42.5 | 238 | 25 |
| | Khost | 657.3 | 449.9 | 206.2 | 146 | 46 |
| | Gardez | 521.1 | 319.3 | 141.2 | 163 | 44 |
| | Laghman | 468.9 | 251.3 | 117.2 | 187 | 47 |
| | Logar | 372.2 | 222.0 | 101.4 | 168 | 46 |
| Average for east | 485.5 | 282.7 | 121.7 | 180.4 | 41.4 | |
| Average for Afghanistan | | | | | 240 | 60 |

Data compiled from Precipitation regime in Afghanistan, Kabul 1981.

Annex II

Afghanistan's river basins main hydrographic features

| Name of the rivers | Length (m) | Level m asl | | Average slope % | Basin Area (sq km) | Basin Perimeter km |
|-------------------------------|------------|-------------|------|-----------------|--------------------|--------------------|
| | | Start | End | | | |
| AMU DARYA BASIN | | | | | | |
| 1- NORTH-EASTERN RIVER BASINS | | | | | | |
| Kunduz | 572 | 3800 | 317 | 0.61 | 37100 | 1387 |
| Upper part | 164 | 3800 | 1467 | 1.42 | | |
| Middle Part | 216 | 1467 | 464 | 0.46 | | |
| Lower part | 192 | 464 | 317 | 0.08 | | |
| Farkhar | 261 | 4800 | 367 | 1.7 | 10800 | 627 |
| Upper part | 130 | 4800 | 991 | 2.73 | | |
| Lower part | 131 | 991 | 367 | 0.48 | | |
| Bamyan | 129 | 4300 | 1467 | 2.2 | 5000 | 330 |
| Foladi | 32 | 4300 | 2500 | 5.63 | 345 | 79 |
| Saighan | 80 | 3500 | 1520 | 2.48 | 1740 | 208 |
| Paendeh | 63 | 4100 | 1176 | 4.64 | 1440 | 169 |
| Andarab | 112 | 4400 | 852 | 3.17 | 3700 | 332 |
| Namakab | 60 | 4300 | 848 | 5.25 | 380 | 132 |
| Bangi | 147 | 4500 | 562 | 2.68 | 4220 | 373 |
| Kokcha | 416 | 4500 | 413 | 0.98 | 21100 | 920 |
| Upper part | 216 | 4500 | 1354 | 1.46 | | |
| Lower part | 200 | 1354 | 413 | 0.46 | | |
| Anjoman | 55 | 4550 | 2512 | 3.71 | 1720 | 229 |
| Wardoj | 113 | 5000 | 1354 | 3.23 | 4500 | 419 |
| Zardew | 63 | 4400 | 1440 | 4.7 | 1040 | 168 |
| Keshem | 89 | 4500 | 799 | 4.16 | 2160 | 5.06 |
| 2- NORTHERN RIVER BASINS | | | | | | |
| Kholm | 210 | 3500 | 450 | 4.45 | 8250 | 555 |
| Upper part | 139 | 3500 | 1000 | 1.8 | | |
| Lower part | 71 | 1000 | 450 | 0.78 | | |
| Dar-e-Souf | 142 | 3600 | 642 | 2.08 | 3160 | 345 |
| Balkh | 471 | 375 | 301 | 0.73 | 19200 | 995 |
| Upper part | 55 | 3750 | 2580 | 2.13 | | |
| Middle part | 320 | 2580 | 4000 | 0.68 | | |
| Lower part | 96 | 400 | 301 | 0.1 | | |
| Shorab | 116 | 3300 | 672 | 2.26 | 3720 | 331 |
| Sar-e-pul | 206 | 3500 | 380 | 1.51 | 10850 | 597 |
| Upper part | 148 | 3500 | 700 | 1.89 | | |
| Lower part | 58 | 700 | 380 | 0.53 | | |
| Shirin tagab | 222 | 2900 | 340 | 1.15 | 12100 | 647 |
| Upper part | 96 | 2900 | 769 | 2.22 | | |
| Lower part | 126 | 769 | 340 | 0.34 | | |
| Maimana | 158 | 3000 | 376 | 1.66 | 6700 | 439 |
| Upper part | 60 | 3000 | 1000 | 3.33 | | |
| Lower part | 98 | 1000 | 376 | 0.64 | | |
| Qaissar | 134 | 2900 | 446 | 1.82 | 3980 | 320 |
| Upper part | 40 | 2900 | 1400 | 3.75 | | |
| Lower part | 94 | 1400 | 466 | 0.94 | | |
| Morghab | 443 | 3700 | 366 | 0.75 | 25440 | 998 |
| Upper part | 265 | 3700 | 850 | 1.09 | | |
| Lower part | 178 | 850 | 366 | 0.24 | | |
| Khord Morghab | 73 | 3800 | 1920 | 2.58 | 1660 | 241 |
| Sarsau | 102 | 3100 | 1332 | 1.73 | 1390 | 223 |
| Jawand | 110 | 3000 | 898 | 1.91 | 2140 | 237 |
| Boom | 97 | 3000 | 577 | 2.5 | 1240 | 228 |
| Chichat ko | 135 | 3200 | 413 | 2.06 | 3920 | 296 |
| Kashan | 154 | 2900 | 526 | 1.54 | 5540 | 364 |
| Koshk | 125 | 2900 | 653 | 1.88 | 3480 | 334 |
| Gulran | 93 | 2000 | 5645 | 1.54 | 3160 | 290 |
| 3- HARIRUD RIVER BASINS | | | | | | |
| Harirod | 615 | 4000 | 650 | 0.55 | 33400 | 1427 |
| Upper part | 370 | 4000 | 1300 | 0.73 | | |
| Lower part | 245 | 1300 | 650 | 0.26 | | |
| Lahl | 136 | 3500 | 2400 | 0.81 | 1720 | 260 |
| Kafgan | 242 | 3200 | 1200 | 0.83 | 7520 | 556 |
| Karukh | 93 | 2600 | 980 | 1.74 | 1870 | 240 |
| Senjab | 65 | 2500 | 840 | 2.54 | 1290 | 175 |
| DESERT (SYSTAN-HELMAND) BASIN | | | | | | |
| 4- SOUTH-WESTERN RIVER BASINS | | | | | | |
| Khashrod | 510 | 3000 | 472 | 0.5 | 10800 | 869 |
| Upper part | 308 | 3000 | 810 | 0.71 | | |
| Lower part | 202 | 810 | 472 | 0.17 | | |

| Name of the rivers | Length (m) | Level m asl | | Average slope % | Basin Area (sq km) | Basin Perimeter km |
|--------------------------------------|------------|-------------|------|-----------------|--------------------|--------------------|
| | | Start | End | | | |
| Farahrod | 712 | 3300 | 475 | 0.4 | 28000 | 1274 |
| Upper part | 340 | 3300 | 1090 | 0.65 | | |
| Middle part | 203 | 1090 | 650 | 0.22 | | |
| Lower part | 169 | 650 | 475 | 0.1 | | |
| Malmand | 88 | 3200 | 1010 | 2.49 | 1480 | 233 |
| Ghor | 234 | 3000 | 1090 | 0.89 | 7000 | 523 |
| Adrascan | 437 | 3000 | 475 | 0.58 | 20500 | 978 |
| Upper part | 130 | 3000 | 1340 | 1.28 | | |
| Middle part | 149 | 1340 | 775 | 0.38 | | |
| Lower part | 158 | 775 | 475 | 0.19 | | |
| Rod-e-Gaz | 85 | 3000 | 1340 | 1.95 | 2200 | 251 |
| 5- HELMAND RIVER BASIN | | | | | | |
| Helmand | 1188 | 4100 | 453 | 0.3 | 139000 | 3287 |
| Upper part | 334 | 4100 | 1325 | 0.83 | | |
| Middle part | 350 | 1325 | 749 | 0.17 | | |
| Lower part | 504 | 749 | 473 | 0.055 | | |
| Siasang | 32 | 4000 | 2930 | 3.34 | 210 | 76 |
| Markhana | 47 | 4000 | 2510 | 3.17 | 1110 | 145 |
| Panjab | 91 | 4000 | 2140 | 2.04 | 2450 | 243 |
| Amrestan | 157 | 4000 | 1395 | 1.66 | 3270 | 375 |
| Khordak | 177 | 3200 | 1340 | 1.05 | 4760 | 345 |
| Kaj | 293 | 3400 | 1110 | 0.78 | 11600 | 737 |
| Terin | 218 | 3300 | 1055 | 1.03 | 8220 | 513 |
| Mosa Kala | 171 | 2800 | 885 | 1.12 | 7560 | 486 |
| Arghandab | 562 | 3900 | 749 | 0.56 | 53000 | 1427 |
| Upper part | 283 | 3900 | 1312 | 0.91 | | |
| Lower part | 279 | 1312 | 749 | 0.2 | | |
| Dori | 227 | 1720 | 890 | 0.37 | 32000 | 1157 |
| Tarnak | 353 | 3000 | 932 | 0.59 | 9140 | 764 |
| Arghestan | 344 | 2600 | 985 | 0.47 | 15500 | 796 |
| Lora | 214 | 2400 | 1283 | 0.52 | 4140 | 411 |
| Ghazni | 201 | 3300 | 1968 | 0.66 | 14700 | 706 |
| Upper part | 27 | 3300 | 2338 | 3.56 | | |
| Lower part | 174 | 2338 | 1968 | 0.21 | | |
| Sarab | 61 | 4100 | 2368 | 2.84 | 915 | 164 |
| Barikaab | 19 | 3300 | 2380 | 4.83 | 165 | 53 |
| Siagel | 37 | 3300 | 2160 | 3.08 | 170 | 82 |
| Jilga | 152 | 3300 | 2042 | 0.83 | 5030 | 385 |
| Upper part | 43 | 3300 | 2294 | 2.34 | | |
| Lower part | 109 | 2294 | 2042 | 0.23 | | |
| 6- SOUTHERN RIVER BASIN | | | | | | |
| Only ephemeral rivers | | | | | | |
| INDUS BASIN | | | | | | |
| 7- SOUTH-EASTERN RIVER BASINS | | | | | | |
| Paltoo | 71 | 3500 | 2114 | 1.95 | 810 | 173 |
| Nakhar | 101 | 2700 | 1978 | 0.71 | 2920 | 271 |
| Park | 42 | 2900 | 2145 | 1.8 | 325 | 111 |
| Korm | 88 | 3700 | 1540 | 2.45 | 2140 | 260 |
| Gaber | 62 | 3100 | 1679 | 2.29 | 520 | 135 |
| Shomol | 112 | 2900 | 890 | 1.79 | 4620 | 321 |
| Upper part | 38 | 2900 | 1495 | 3.7 | | |
| Lower part | 74 | 1495 | 890 | 0.89 | | |
| Spera | 56 | 3200 | 1492 | 3.05 | 755 | 133 |
| Matoon | 58 | 2800 | 1012 | 3.08 | 470 | 1412 |
| Upper part | 34 | 2800 | 1921 | 4.44 | | |
| Lower part | 24 | 1921 | 1012 | 1.16 | | |
| Urgoon | 86 | 2600 | 1460 | 1.33 | 1400 | 170 |
| Dahana | 34 | 3300 | 2160 | 3.35 | 205 | 85 |
| Gomal | 147 | 2700 | 1060 | 1.12 | 7710 | 424 |
| Kundar | 183 | 2700 | 1070 | 0.89 | 3240 | 299 |
| 8- KABUL RIVER BASIN | | | | | | |
| Kabul | 332 | 3700 | 375 | 1 | 67800 | 1613 |
| Upper part | 157 | 3700 | 1000 | 1.72 | | |
| Lower part | 175 | 1000 | 375 | 0.36 | | |
| Loger | 280 | 3500 | 1790 | 0.61 | 9830 | 657 |
| Upper part | 144 | 3500 | 2190 | 0.91 | | |
| Lower part | 136 | 2190 | 1790 | 0.3 | | |
| Panjshir | 228 | 4560 | 1000 | 1.6 | 12000 | 541 |
| Lower part | 131 | 4650 | 1605 | 2.33 | | |
| Lower part | 97 | 1605 | 1000 | 0.62 | | |

| Name of the rivers | Length (m) | Level m asl | | Average slope % | Basin Area (sq km) | Basin Perimeter km |
|--------------------|---------------|-------------|------|--------------------|-----------------------|-----------------------|
| | | Start | End | | | |
| Laghman | 171 | 4450 | 610 | 2.25 | 6120 | 410 |
| Upper part | 111 | 4450 | 1000 | 3.11 | | |
| Lower part | 60 | 1000 | 6100 | 0.65 | | |
| Kunar | 462 | 5900 | 540 | 1.16 | 26100 | 595 |
| Upper part | 300 | 5900 | 1040 | 1.62 | | |
| Lower part | 162 | 1040 | 540 | 0.31 | | |
| Ghorband | 125 | 3500 | 1475 | 1.62 | 4360 | 388 |
| Salang | 44 | 4200 | 1510 | 6.12 | 510 | 110 |
| Shatol | 36 | 4200 | 1590 | 7.26 | 205 | 76 |
| Tagab | 60 | 3600 | 1000 | 4.34 | 800 | 125 |
| Surkhrod | 125 | 3350 | 580 | 2.22 | 2620 | 280 |
| Peech | 134 | 4250 | 790 | 2.59 | 3860 | 322 |
| Landay sind | 120 | 4300 | 1035 | 2.73 | 3260 | 274 |
| Paghman | 30 | 3700 | 1800 | 6.33 | 500 | 98 |
| Charkh | 57 | 3000 | 1927 | 1.88 | 880 | 148 |
| Chakari | 48 | 3300 | 1774 | 3.18 | 460 | 112 |

Annex III

**Precipitation graphs for
Six meteo-stations (not supplied)**

and

**Long term monthly
average maximum, minimum and normal
Precipitation data for different
stations in Afghanistan**

Monthly long term average maximum, minimum and normal precipitation (mm)
For different meteo-stations in Afghanistan

| Zone | Meteo-station | December | | | January | | | February | | | March | | | April | | | May | | | June | | | July | | | August | | | September | | | October | | | November | | |
|--------------------|----------------|----------|-----|-----|---------|-----|-----|----------|-----|-----|-------|-----|-----|-------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|--------|-----|-----|-----------|-----|-----|---------|-----|-----|----------|----|---|
| | | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | | | |
| CENTRAL | Bamyan | 23 | 6 | 0 | 17 | 8 | 0 | 51 | 15 | 2 | 76 | 25 | 5 | 106 | 35 | 14 | 89 | 25 | 0 | 73 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 40 | 4 | 0 | 16 | 4 | 0 | 26 | 8 | 0 |
| | Paghman | 76 | 35 | 5 | 133 | 62 | 26 | 146 | 67 | 8 | 200 | 92 | 21 | 103 | 80 | 46 | 88 | 26 | 5 | 14 | 13 | 0 | 78 | 14 | 0 | 33 | 5 | 105 | 21 | 6 | 0 | 22 | 5 | 0 | 79 | 27 | 1 |
| | Panjab | 58 | 35 | 3 | 81 | 34 | 5 | 118 | 49 | 1 | 126 | 56 | 6 | 154 | 60 | 4 | 89 | 24 | 0 | 6 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 23 | 2 | 0 | 54 | 12 | 0 | 38 | 13 | 0 |
| | Jabal Saraj | 110 | 36 | 6 | 216 | 65 | 4 | 175 | 87 | 12 | 196 | 100 | 15 | 254 | 112 | 14 | 131 | 31 | 0 | 21 | 2 | 0 | 25 | 3 | 0 | 17 | 2 | 0 | 33 | 4 | 0 | 41 | 7 | 0 | 67 | 18 | 0 |
| | Cheghcheran | 35 | 18 | 8 | 73 | 36 | 5 | 45 | 28 | 6 | 52 | 33 | 7 | 78 | 41 | 5 | 27 | 14 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 6 | 0 | 51 | 13 | 0 |
| | Shahrak | 98 | 35 | 15 | 97 | 58 | 11 | 80 | 48 | 4 | 98 | 53 | 6 | 82 | 38 | 7 | 58 | 17 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 6 | 0 | 62 | 19 | 0 |
| | Ghalmin | 89 | 23 | 8 | 85 | 37 | 7 | 72 | 35 | 11 | 65 | 43 | 14 | 94 | 45 | 13 | 48 | 20 | 0 | 1 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 18 | 5 | 0 | 38 | 11 | 0 |
| | Kabul | 73 | 23 | 4 | 80 | 34 | 0 | 107 | 57 | 3 | 123 | 64 | 10 | 177 | 82 | 10 | 105 | 23 | 4 | 5 | 1 | 0 | 51 | 7 | 0 | 9 | 1 | 0 | 22 | 2 | 0 | 14 | 2 | 0 | 91 | 20 | 0 |
| | Kariz-e-Mir | 100 | 31 | 2 | 111 | 48 | 0 | 141 | 61 | 2 | 179 | 93 | 13 | 202 | 103 | 26 | 130 | 28 | 24 | 20 | 3 | 0 | 41 | 6 | 0 | 5 | 1 | 0 | 18 | 3 | 0 | 24 | 4 | 0 | 93 | 23 | 0 |
| | Lahl | 66 | 24 | 7 | 100 | 39 | 5 | 70 | 45 | 4 | 79 | 51 | 3 | 101 | 65 | 20 | 94 | 31 | 0 | 61 | 2 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 7 | 1 | 0 | 43 | 9 | 0 | 80 | 22 | 0 |
| Average central | | 73 | 27 | 6 | 99 | 42 | 6 | 100 | 49 | 5 | 119 | 61 | 10 | 135 | 66 | 16 | 86 | 24 | 3 | 22 | 3 | 0 | 21 | 3 | 0 | 7 | 1 | 11 | 16 | 2 | 0 | 29 | 6 | 0 | 63 | 17 | 0 |
| NORTH EAST | Taleqan | 83 | 38 | 10 | 121 | 75 | 24 | 101 | 73 | 24 | 250 | 126 | 14 | 238 | 111 | 35 | 194 | 63 | 0 | 37 | 6 | 0 | 1 | 0 | 3 | 0 | 0 | 14 | 2 | 0 | 51 | 15 | 0 | 72 | 33 | 4 | |
| | Salang-North | 262 | 107 | 27 | 238 | 109 | 23 | 309 | 147 | 37 | 326 | 185 | 75 | 472 | 213 | 56 | 402 | 128 | 12 | 32 | 10 | 0 | 41 | 6 | 0 | 81 | 7 | 0 | 54 | 9 | 0 | 96 | 29 | 0 | 141 | 70 | 6 |
| | Salang-South | 215 | 91 | 26 | 270 | 124 | 21 | 358 | 171 | 22 | 418 | 229 | 76 | 412 | 233 | 60 | 335 | 78 | 2 | 24 | 6 | 0 | 22 | 3 | 0 | 5 | 1 | 0 | 26 | 4 | 0 | 82 | 18 | 0 | 174 | 66 | 5 |
| | Faizabad | 105 | 36 | 4 | 120 | 47 | 12 | 139 | 69 | 21 | 164 | 99 | 41 | 151 | 98 | 59 | 177 | 79 | 20 | 23 | 7 | 0 | 110 | 10 | 0 | 8 | 1 | 0 | 10 | 2 | 0 | 74 | 24 | 0 | 56 | 30 | 0 |
| Average north-east | | 133 | 54 | 13 | 150 | 71 | 16 | 181 | 92 | 21 | 232 | 128 | 41 | 255 | 131 | 42 | 222 | 69 | 7 | 23 | 6 | 0 | 35 | 4 | 0 | 19 | 2 | 0 | 21 | 3 | 0 | 61 | 17 | 0 | 89 | 40 | 3 |
| NORTH WEST | Sheberghan | 107 | 31 | 7 | 81 | 43 | 8 | 84 | 42 | 11 | 159 | 55 | 19 | 65 | 28 | 0 | 40 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 33 | 8 | 0 | 56 | 13 | 0 |
| | Kunduz | 165 | 33 | 4 | 89 | 46 | 3 | 115 | 56 | 31 | 154 | 77 | 29 | 164 | 57 | 11 | 94 | 32 | 0 | 1 | 0 | 0 | 22 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 36 | 8 | 0 | 63 | 25 | 4 |
| | Mazar-e-Sharif | 107 | 23 | 2 | 52 | 28 | 1 | 87 | 34 | 11 | 143 | 43 | 5 | 88 | 31 | 1 | 40 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 22 | 5 | 0 | 37 | 14 | 0 |
| Average north | | 126 | 29 | 4 | 74 | 39 | 4 | 95 | 44 | 18 | 152 | 58 | 18 | 106 | 39 | 4 | 58 | 18 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 30 | 7 | 0 | 52 | 17 | 1 |
| WEST | Qhades | 119 | 45 | 18 | 123 | 50 | 21 | 99 | 60 | 15 | 147 | 84 | 21 | 98 | 50 | 15 | 60 | 19 | 0 | 22 | 2 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 11 | 1 | 0 | 44 | 12 | 0 | 72 | 22 | 1 |
| | Maimana | 129 | 38 | 3 | 121 | 50 | 2 | 90 | 56 | 22 | 199 | 85 | 11 | 130 | 61 | 11 | 141 | 28 | 0 | 24 | 2 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 39 | 9 | 0 | 65 | 24 | 0 |
| Average north-west | | 124 | 42 | 10 | 122 | 50 | 11 | 95 | 58 | 19 | 173 | 84 | 16 | 114 | 56 | 13 | 100 | 24 | 0 | 23 | 2 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 41 | 11 | 0 | 68 | 23 | 0 |
| WEST | Herat | 126 | 34 | 0 | 118 | 49 | 6 | 107 | 40 | 3 | 152 | 52 | 7 | 90 | 30 | 0 | 91 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 14 | 1 | 0 | 39 | 10 | 0 |
| Average west | | 126 | 34 | 0 | 118 | 49 | 6 | 107 | 40 | 3 | 152 | 52 | 7 | 90 | 30 | 0 | 91 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 14 | 1 | 0 | 39 | 10 | 0 |
| SOUTH WEST | Zaranj | 24 | 4 | 0 | 158 | 27 | 0 | 59 | 12 | 0 | 33 | 11 | 0 | 15 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 0 |
| WEST | Farah | 80 | 11 | 0 | 94 | 23 | 0 | 74 | 23 | 0 | 97 | 19 | 0 | 34 | 8 | 0 | 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 15 | 4 | 0 |

Monthly long term average maximum, minimum and normal precipitation (mm)
For different meteo-stations in Afghanistan

| Zone | Meteo-station | December | | | January | | | February | | | March | | | April | | | May | | | June | | | July | | | August | | | September | | | October | | | November | | | | | |
|---------------------|---------------|----------|-----|-----|---------|-----|-----|----------|-----|-----|-------|-----|-----|-------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|--------|-----|-----|-----------|-----|-----|---------|-----|-----|----------|----|---|----|---|---|
| | | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | Max | Nor | Min | | | | | | |
| Average south-west | | 52 | 7 | 0 | 126 | 25 | 0 | 66 | 18 | 0 | 65 | 15 | 0 | 24 | 6 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 11 | 3 | 0 |
| SOUTH | Bust | 53 | 14 | 0 | 79 | 22 | 0 | 68 | 20 | 0 | 68 | 21 | 0 | 30 | 9 | 0 | 34 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 18 | 4 | 0 |
| | Quandahar | 76 | | 0 | 163 | 49 | 0 | 93 | 35 | 0 | 112 | 29 | 1 | 111 | 17 | 0 | 40 | 4 | 0 | 5 | 0 | 0 | 38 | 2 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 30 | 1 | 0 | 53 | 6 | 0 | | | |
| Average south | | 65 | 7 | 0 | 121 | 36 | 0 | 81 | 28 | 0 | 90 | 25 | 0 | 71 | 13 | 0 | 37 | 3 | 0 | 2 | 0 | 0 | 22 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 36 | 5 | 0 | | | |
| SOUTH EAST | Ghazni | 81 | | 2 | 116 | 41 | 0 | 134 | 48 | 4 | 188 | 63 | 7 | 196 | 53 | 0 | 105 | 20 | 0 | 17 | 2 | 0 | 11 | 16 | 0 | 21 | 2 | 0 | 10 | 1 | 0 | 10 | 1 | 0 | 61 | 12 | 0 | | | |
| | Qualat | 104 | 46 | 2 | 212 | 64 | 3 | 165 | 70 | 4 | 190 | 53 | 0 | 53 | 22 | 1 | 11 | 3 | 0 | 6 | 1 | 0 | 25 | 7 | 0 | 26 | 4 | 0 | 2 | 0 | 0 | 4 | 1 | 0 | 39 | 11 | 0 | | | |
| | Muqur | 80 | 23 | 0 | 137 | 51 | 1 | 130 | 56 | 2 | 155 | 48 | 6 | 63 | 26 | 5 | 26 | 8 | 0 | 2 | 0 | 0 | 109 | 12 | 0 | 84 | 8 | 0 | 4 | 0 | 0 | 8 | 2 | 0 | 32 | 6 | 0 | | | |
| Average south-east | | 88 | 23 | 1 | 155 | 52 | 1 | 143 | 58 | 3 | 178 | 54 | 4 | 104 | 34 | 2 | 48 | 10 | 0 | 8 | 1 | 0 | 48 | 12 | 0 | 43 | 5 | 0 | 5 | 0 | 0 | 7 | 1 | 0 | 44 | 9 | 0 | | | |
| EAST | Jalalabad | 76 | 13 | 0 | 50 | 17 | 0 | 97 | 25 | 0 | 105 | 37 | 0 | 164 | 33 | 0 | 121 | 16 | 0 | 10 | 1 | 0 | 42 | 6 | 0 | 59 | 5 | 0 | 54 | 6 | 0 | 31 | 3 | 0 | 58 | 8 | 0 | | | |
| | Khost | 76 | 13 | 0 | 126 | 25 | 0 | 96 | 47 | 4 | 111 | 53 | 7 | 211 | 66 | 10 | 120 | 40 | 0 | 54 | 20 | 4 | 216 | 80 | 5 | 112 | 54 | 4 | 88 | 32 | 0 | 30 | 6 | 0 | 46 | 9 | 0 | | | |
| | Gardez | 114 | 31 | 1 | 86 | 37 | 4 | 123 | 62 | 4 | 111 | 65 | 0 | 150 | 55 | 0 | 103 | 22 | 0 | 41 | 5 | 0 | 92 | 18 | 0 | 45 | 8 | 0 | 11 | 1 | 0 | 69 | 5 | 0 | 48 | 11 | 0 | | | |
| | Laghman | 71 | 18 | 0 | 70 | 23 | 0 | 68 | 34 | 0 | 155 | 54 | 11 | 227 | 63 | 13 | 100 | 21 | 0 | 20 | 4 | 0 | 23 | 7 | 0 | 10 | 5 | 0 | 47 | 11 | 0 | 15 | 5 | 0 | 43 | 8 | 0 | | | |
| | Logar | 43 | 16 | 1 | 76 | 34 | 9 | 82 | 42 | 1 | 82 | 44 | 14 | 84 | 46 | 18 | 36 | 16 | 1 | 14 | 2 | 0 | 34 | 4 | 0 | 19 | 3 | 0 | 2 | 0 | 0 | 12 | 3 | 0 | 28 | 12 | 0 | | | |
| Average east | | 76 | 18 | 0 | 82 | 27 | 3 | 93 | 42 | 2 | 113 | 51 | 6 | 167 | 53 | 8 | 96 | 23 | 0 | 28 | 6 | 1 | 81 | 23 | 1 | 49 | 15 | 1 | 40 | 10 | 0 | 31 | 4 | 0 | 45 | 10 | 0 | | | |
| Average Afghanistan | | 81 | 21 | 2 | 100 | 36 | 3 | 87 | 37 | 5 | 116 | 44 | 7 | 90 | 33 | 5 | 59 | 12 | 0 | 10 | 1 | 0 | 21 | 4 | 0 | 12 | 2 | 1 | 8 | 1 | 0 | 19 | 3 | 0 | 40 | 10 | 0 | | | |

Data compiled from Precipitation regime in Afghanistan, Kabul 1981.