

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

KABUL INTL (AFGHANISTAN)

Altitude: 1801 m.

Latitude: 34°33'N Longitude: 69°12'E

Temperature observation period.: 1983-1994 (12)

Rainfall observation period....: 1983-1994 (12)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	-0.83	5.56	-7.22	18.89	-25.56	24.9	0.00
Feb.	0.84	6.67	-5.00	18.33	-21.67	62.0	1.19
Mar.	6.94	12.78	1.11	22.78	-11.11	72.9	23.61
Apr.	11.67	17.78	5.56	26.67	-2.22	110.7	49.74
May.	15.83	23.33	8.33	32.22	-1.11	27.7	82.68
Jun.	20.84	30.00	11.67	35.00	2.22	1.5	119.01
Jul.	22.78	31.11	14.44	36.67	3.89	6.6	136.11
Aug.	22.50	31.67	13.33	36.11	1.67	1.3	126.28
Sep.	18.89	28.89	8.89	33.89	0.56	0.5	88.95
Oct.	13.34	22.78	3.89	31.67	-3.89	1.5	52.84
Nov.	6.39	14.44	-1.67	23.89	-9.44	24.4	17.67
Dec.	1.39	7.78	-5.00	18.89	-18.89	24.9	2.32
Year	11.72	19.40	4.03	27.92	-7.13	359	700.40

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	101
Compensated thermicity index.....(Itc):	155
Simple continentality index.....(Ic):	23.6
Diurnality index.....(Id):	20.0
Annual ombrothermic index.....(Io):	2.36
Monthly estival ombrothermic index.....(Ios1):	0.06
Bimonthly estival ombrothermic index.....(Ios2):	0.17
Threemonthly estival ombrothermic index.....(Ios3):	0.14
Fourmonthly estival ombrothermic index.....(Ios4):	0.45
Annual ombro-evaporation index.....(Ioe):	0.12
Annual positive temperature.....(Tp):	1414
Annual negative temperature.....(Tn):	8
Estival temperature.....(Ts):	661
Positive precipitation.....(Pp):	334

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	4	1	1	5	1

Latitudinal Belt...: Subtropical

Continentalty.....: Continental - Low Subcontinental

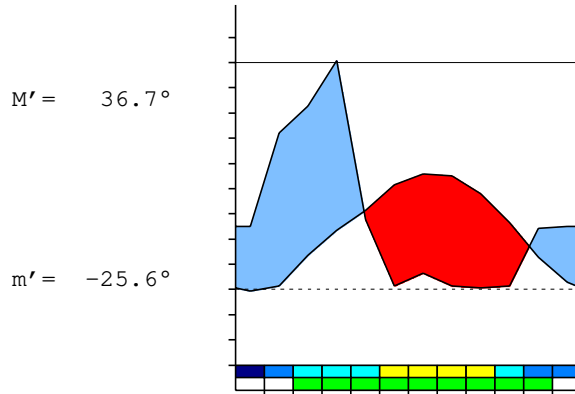
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-CONTINENTAL

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN LOW DRY

KABUL INTL (AFGHANISTAN)

1801 m

P= 359 34° 33'N 69° 12'E 12/12 y.  
 T= 11.7° Ic= 23.6 Tp= 1414 Tn= 8  
 m= -7.2° M= 5.6° Itc= 155 Io= 2.4



MEDITERRANEAN PLUVISEASONAL-CONTINENTAL  
 LOW SUPRAMEDITERRANEAN LOW DRY

WATER INDEX CARD KABUL INTL (AFGHANISTAN)  
 Altitude: 1801 m. Latitude: 34° 33'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	-0.8	0	25	25	54	0	0	0	0	*
Feb.	0.8	1	62	46	100	1	0	15	8	51.1
Mar.	6.9	24	73	0	100	24	0	49	28	2.0
Apr.	11.7	50	111	0	100	50	0	61	45	1.2
May.	15.8	83	28	-55	45	83	0	0	22	-0.6
Jun.	20.8	119	2	-45	0	47	72	0	11	-0.9
Jul.	22.8	136	7	0	0	7	130	0	6	-0.9
Aug.	22.5	126	1	0	0	1	125	0	3	-0.9
Sep.	18.9	89	1	0	0	1	88	0	1	-0.9
Oct.	13.3	53	2	0	0	2	51	0	1	-0.9
Nov.	6.4	18	24	7	7	18	0	0	0	0.3
Dec.	1.4	2	25	23	29	2	0	0	0	9.7
Year	11.7	700	359	*	*	234	467	125	125	*

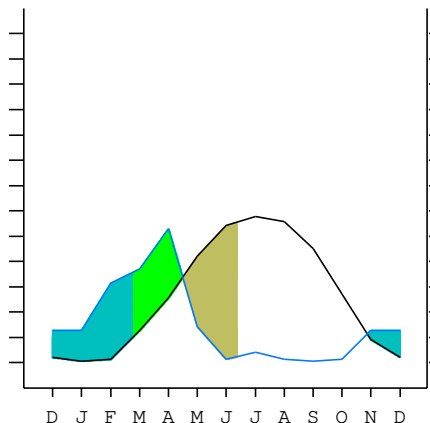
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

KABUL INTL (AFGHANISTAN)

34°33'N 69°12'E 1801 m 12/12 y.

T= 11.7 Ic= 23.6 MEDITERRANEAN PLUVISEASONAL-CONTINENTAL  
 m= -7.2 Tp= 1414 LOW SUPRAMEDITERRANEAN  
 M= 5.6 Tn= 8 LOW DRY  
 M' = 36.7 Itc= 155  
 m' = -25.6 Io= 2.4  
 P= 359 mm  
 PE= 700 mm

Imbibing	27 Oct.
Saturation	23 Feb.
Reserve Use	16 Apr.
Deficit	12 Jun.



KABUL INTL (AFGHANISTAN)

Latitude: 34°33'N Longitude: 69°12'E Altitude: 1801 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [C2a]  
 + Type .....: C. Continental  
 + Subtype .....: 2. Subcontinental  
 + Variant .....: a. Low  
 Thermic types [A3.B4]  
 + Latitudinal zone .....: A. Warm  
 + Latitudinal belt .....: 3. Subtropical  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate  
 Bioclimatic types [B7.4b.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 7. PLUVISEASONAL-CONTINENTAL  
 + Bioclimatic variant ..:  
 + Thermic type.....: 4. SUPRAMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Mehd.Sme.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 39  
 Coldest semester of the year.....(Psw): 320  
 Warmest four months period of the year.....(Pcm1): 10  
 Following warmest four months period.....(Pcm2): 76  
 Positive precipitation dryest 3 months.....(Ppd): 3  
 Positive precipitation dryest 2 months.....(Ppd2): 2  
 Positive precipitation dryest 1 month.....(Ppd1): 1  
 Positive precipitation warmest 3 months.....(Pps): 9  
 Positive precipitation warmest 2 months.....(Pps2): 8  
 Positive precipitation warmest 1 month.....(Pps1): 7  
 Positive precipitation coldest 3 months.....(Ppw): 87  
 Positive precipitation coldest 2 months.....(Ppw2): 62  
 Positive precipitation coldest 1 month.....(Ppw1): 0

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	111	211	9	26

Seasonal rainfall rhythms: P > W > F > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 22.8  
 Average coldest month [T].....(Tmin): -0.8  
 Maximum temp. warmest month [M].....(Tmmax): 31.7  
 Minimum temp. coldest month [m].....(Tmmin): -7.2  
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.7  
 Absolute Min.temp. coldest month [m'].....(Tamin): -25.6  
 First warmest contrasted month [M].....(Tcmax): 28.9 (9)  
 First coldest contrasted month [m].....(Tcmin): 8.9 (9)  
 Estival temperature.....(Ts): 661  
 Positive temperature dryest 3 months.....(Tpd): 547  
 Positive temperature dryest 2 months.....(Tpd2): 414  
 Positive temperature dryest 1 month.....(Tpd1): 189  
 Positive temperature warmest 3 months.....(Tps): 661  
 Positive temperature warmest 2 months.....(Tps2): 453  
 Positive temperature warmest 1 month.....(Tps1): 228  
 Positive temperature coldest 3 months.....(Tpw): 22  
 Positive temperature coldest 2 months.....(Tpw2): 8  
 Positive temperature coldest 1 month.....(Tpw1): 0

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)					o	o	o	o	o	o		
Dryest semester....(Smd)						o	o	o	o	o	o	
Warmest 4 months...(Cm1)						o	o	o	o			
Dryest 4 months....(Cmd)						o	o	o	o			
Vegetation Activity(Pav)			o	o	o	o	o	o	o	o	o	
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)	o											
Subgelid.....[m <=0] (Pf)	o	o									o	o
Pregelid.....[m' <=0] (Pf)	o	o	o	o	o					o	o	o
Agelid.....[m' > 0] (Pf)						o	o	o	o			
HiperAgelid..[all>0] (Pf)						o	o	o	o			

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.95  
 Mediterranean index of July.[PE/P].....(Im1): 20.62  
 Mediterranean index of July & August.....(Im2): 33.21  
 Mediterranean index of June, July & August....(Im3): 40.58

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	249	*	620	729	1107	277	15	66	13	5	15	244
Tp	14	*	8	69	117	158	208	228	225	189	133	64
Io (Iom)	17.9	*	73.8	10.5	9.49	1.75	0.07	0.29	0.06	0.03	0.11	3.82
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	*/*			2113 / 344			94 / 661			264 / 386		
Io (Iot)	*			6.135			0.142			0.684		
Semesters	December-May						June-November					
Pp(x10)/Tp	*/*						358 / 1047					
Io (Iosm)	*						0.342					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3340/1414=2.36 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	249	*	620	729	1107	277	15	66	13	5	15	244
Tp [T*10]	14	*	8	69	117	158	208	228	225	189	133	64
Iom [Pp/Tp]	\$\$	!!	\$\$	\$\$	949	175	7	29	6	3	11	382
Avm [200-Iom]	***	***	***	***	***	25	193	171	194	197	189	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	* / *			2113 / 344			94 / 661			264 / 386		
Iot [Pp/Tp]	**			614			14			68		
Avs E[Avm<200]	***			***			558			***		
Lower ultrahyperarid [3]							Upper ultrahyperarid [2]					
Lower hyperarid [1]							Weak upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	23.61
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		50.37
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		43.21
+ Subcontinental (40<CI<60)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		1.89
+ Continental (1.7<CI<2.3)		
Rainfall Index of Lang (1925) [R=P/T] .....		30.64
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		16.53
+ Semiarid -mediterranean- (20>Ia>15)		
I of Emberger (1930) [Q=100*P/(Tmmax <sup>2</sup> -Tmmin <sup>2</sup> )] .....		37.74
+ Semiarid (50>Q>30)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		3.26
+ Arid (6>DR>3)		
Aridity Index of UNEP [I=P/PE] .....		0.51
+ Subhumid - dry (0.65>I>0.5)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		34.14
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.18	0.47	0.44	0.59	0.11	0.00	0.02	0.00	0.00	0.00	0.13	0.17
T-E ratio	0.00	0.38	3.12	5.25	7.12	9.38	10.25	10.13	8.50	6.00	2.88	0.63
Precipitation-effectiveness: 21.22						Temperature-efficiency .....						63.63
Moisture Index [MI=100*(P-PE)/PE] .....												-48.76
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....												66.63
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												17.88
+ Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE .....												700.40
+ First mesothermic (570<PE<712)												

