

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

CHAPA (VIETNAM)

Altitude: 1640 m.

Latitude: 22°21'N Longitude: 103°49'E

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1967-1994 (28)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	8.06	11.11	5.00	23.89	-2.22	40.6	18.69
Feb.	9.45	12.22	6.67	25.56	0.00	71.1	22.86
Mar.	14.72	18.33	11.11	27.22	1.67	119.4	53.93
Apr.	17.22	21.11	13.33	30.00	2.78	177.8	71.42
May.	19.45	22.78	16.11	30.00	8.89	370.9	93.41
Jun.	20.00	22.78	17.22	28.89	11.11	355.6	95.98
Jul.	20.56	23.33	17.78	28.89	7.22	480.1	103.03
Aug.	20.00	22.78	17.22	28.33	10.56	480.1	95.13
Sep.	19.17	22.22	16.11	32.78	10.00	320.1	81.66
Oct.	16.11	18.89	13.33	27.22	6.11	190.5	59.93
Nov.	13.89	17.22	10.56	26.67	1.11	119.4	43.88
Dec.	10.84	13.89	7.78	22.78	-2.22	40.6	29.78
Year	15.79	18.89	12.69	27.69	4.58	2766	769.69

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	319
Compensated thermicity index.....(Itc):	319
Simple continentality index.....(Ic):	12.5
Diurnality index.....(Id):	7.8
Annual ombrothermic index.....(Io):	14.60
Monthly dry ombrothermic index.....(Iod1):	3.75
Bimonthly dry ombrothermic index.....(Iod2):	4.30
Three monthly dry ombrothermic index.....(Iod3):	5.37
Four monthly dry ombrothermic index.....(Iod4):	6.43
Annual ombro-evaporation index.....(Ioe):	3.76
Annual positive temperature.....(Tp):	1895
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	284
Positive precipitation.....(Pp):	2766

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	11	1	0	0	0

Latitudinal Belt...: Eutropical

Continentalty.....: Oceanic - Low Semihyperoceanic

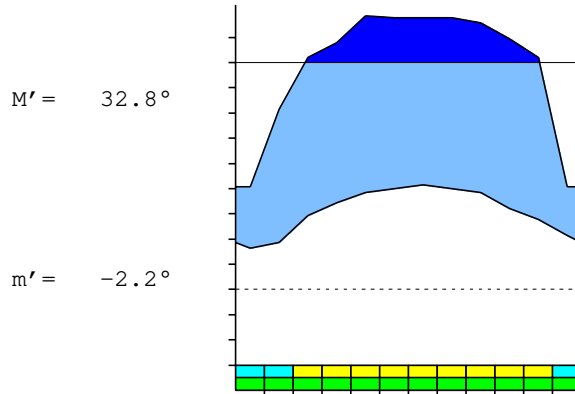
Bioclimate(Variant): TROPICAL PLUVIAL (HYGROPHYTIC)

Bioclimatic Belt...: LOW SUPRATROPICAL LOW HYPERHUMID

CHAPA (VIETNAM)

1640 m

P= 2766 22° 21'N 103° 49'E 11/28 y.
 T= 15.8° Ic= 12.5 Tp= 1895 Tn= 0
 m= 5.0° M= 11.1° Itc= 319 Io= 14.6



TROPICAL PLUVIAL (HYGROPHYTIC)
 LOW SUPRATROPICAL LOW HYPERHUMID

WATER INDEX CARD CHAPA (VIETNAM)
 Altitude: 1640 m. Latitude: 22° 21'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.1	19	41	0	100	19	0	22	49	1.1
Feb.	9.4	23	71	0	100	23	0	48	49	2.1
Mar.	14.7	54	119	0	100	54	0	65	57	1.2
Apr.	17.2	71	178	0	100	71	0	106	82	1.4
May.	19.5	93	371	0	100	93	0	277	180	2.9
Jun.	20.0	96	356	0	100	96	0	260	220	2.7
Jul.	20.6	103	480	0	100	103	0	377	298	3.6
Aug.	20.0	95	480	0	100	95	0	385	342	4.0
Sep.	19.2	82	320	0	100	82	0	238	290	2.9
Oct.	16.1	60	191	0	100	60	0	131	210	2.1
Nov.	13.9	44	119	0	100	44	0	76	143	1.7
Dec.	10.8	30	41	0	100	30	0	11	77	0.3
Year	15.8	770	2766	*	*	770	0	1997	1997	*

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

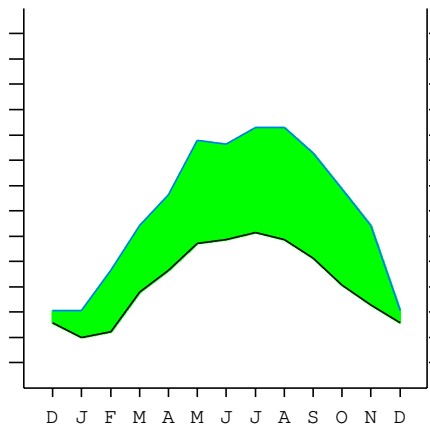
CHAPA (VIETNAM)

22°21'N 103°49'E 1640 m 11/28 y.

T= 15.8 Ic= 12.5 TROPICAL PLUVIAL (HYGROPHYTIC)
 m= 5.0 Tp= 1895 LOW SUPRATROPICAL
 M= 11.1 Tn= 0 LOW HYPERHUMID
 M' = 32.8 Itc= 319
 m' = -2.2 Io= 14.6
 P= 2766 mm ———
 PE= 770 mm ———

Imbibing	
Saturation	
Reserve Use	
Deficit	

All over the year,
 there is no hydric deficit



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: b. Low

Thermic types [A2.A3]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm

Bioclimatic types [A5.4b.8b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 5. PLUVIAL
 + Bioclimatic variant ..:
 + Thermic type.....: 4. SUPRATROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 8. HYPERHUMID
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification: Trhd.Str.Hhu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 2185
 Coldest semester of the year.....(Psw): 582
 Warmest four months period of the year.....(Pcm1): 1687
 Following warmest four months period.....(Pcm2): 671
 Positive precipitation dryest 3 months.....(Ppd): 152
 Positive precipitation dryest 2 months.....(Ppd2): 81
 Positive precipitation dryest 1 month.....(Ppd1): 41
 Positive precipitation warmest 3 months.....(Pps): 1316
 Positive precipitation warmest 2 months.....(Pps2): 836
 Positive precipitation warmest 1 month.....(Pps1): 480
 Positive precipitation coldest 3 months.....(Ppw): 152
 Positive precipitation coldest 2 months.....(Ppw2): 112
 Positive precipitation coldest 1 month.....(Ppw1): 41

Seasons	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4
Rainfall	152	668	1315	630

Tropical rainfall rhythms: 3 > 2 > 4 > 1

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 20.6
 Average coldest month [T].....(Tmin): 8.1
 Maximum temp. warmest month [M].....(Tmmax): 23.3
 Minimum temp. coldest month [m].....(Tmmin): 5.0
 Absolute Max.temp. warmest month [M'].....(Tamax): 32.8
 Absolute Min.temp. coldest month [m'].....(Tamin): -2.2
 First warmest contrasted month [M].....(Tcmax): 21.1 (4)
 First coldest contrasted month [m].....(Tcmin): 13.3 (4)
 Dry station temperature.....(Td): 284
 Positive temperature dryest 3 months.....(Tpd): 284
 Positive temperature dryest 2 months.....(Tpd2): 189
 Positive temperature dryest 1 month.....(Tpd1): 81
 Positive temperature warmest 3 months.....(Tps): 606
 Positive temperature warmest 2 months.....(Tps2): 406
 Positive temperature warmest 1 month.....(Tps1): 206
 Positive temperature coldest 3 months.....(Tpw): 284
 Positive temperature coldest 2 months.....(Tpw2): 175
 Positive temperature coldest 1 month.....(Tpw1): 81

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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	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m' <=0] (Pf)	o	o										o
Agelid.....[m' > 0] (Pf)			o	o	o	o	o	o	o	o	o	
HiperAgelid..[all>0] (Pf)			o	o	o	o	o	o	o	o	o	

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.28
 Mediterranean index of July.[PE/P].....(Im1): No
 Mediterranean index of July & August.....(Im2): No
 Mediterranean index of June, July & August....(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	406	406	711	1194	1778	3709	3556	4801	4801	3201	1905	1194
Tp	108	81	95	147	172	195	200	206	200	192	161	139
Io (Iom)	3.75	5.04	7.52	8.11	10.3	19.1	17.8	23.4	24.0	16.7	11.8	8.60
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1523 / 284			6681 / 514			13158 / 606			6300 / 492		
Io (Iot)	5.372			13.00			21.73			12.81		
Semesters	December-May						June-November					
Pp(x10)/Tp	8204 / 797						19458 / 1097					
Io (Iosm)	10.29						17.73					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 27662/1895=14.60 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	406	406	711	1194	1778	3709	3556	4801	4801	3201	1905	1194
Tp [T*10]	108	81	95	147	172	195	200	206	200	192	161	139
Iom [Pp/Tp]	375	504	752	811	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	860
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1523 / 284			6681 / 514			13158 / 606			6300 / 492		
Iot [Pp/Tp]	537			1300			2173			1281		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 12.50
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 35.48
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 25.71
 + Oceanic (20<CI<40)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.48
 + Subcontinental (1.1<CI<1.7)
 Rainfall Index of Lang (1925) [R=P/T]: 175.20
 + Humid (R>160)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 107.26
 + Perhumid (Ia>60)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 532.69
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 0.57
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 3.59
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 83.33
 + Low (60<K<90)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 7. Mesoaxeric (Axeric temperate)
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.22	0.39	0.59	0.85	1.81	1.71	2.35	2.38	1.55	0.95	0.60	0.20
T-E ratio	3.63	4.25	6.62	7.75	8.75	9.00	9.25	9.00	8.63	7.25	6.25	4.88
Precipitation-effectiveness: 135.86						Temperature-efficiency: 85.26						
Moisture Index [MI=100*(P-PE)/PE]: 259.39 + A.Extremely humid (MI>100) Index of dryness [DI=100*d/PE]: 0.00 + No deficit (0<DI<16.7) Index of humidity [HI=100*s/PE]: 259.39 + Strong surplus (20<HI) Potential Evapotranspiration PE: 769.69 + Second mesothermic (712<PE<855)												

