

**Appendix 3: Meteorological data in Khumbu and Shorong Himal, east Nepal**  
 [Revised data in the appendixes of 'Glaciers and Climates in Nepal Himalayas' ('Seppyo' special issue) Part I (Vol. 38, p. 129-130, 1976), III (Vol. 40, p. 84, 1978) and IV (Vol. 41, p. 111, 1980)]

Station	Altitude	Location	Duration of the observation
Lhajung (Khumbu)	4420 m	27°53.6'N, 86°49.7'E	Apr. 2, 1973-Oct. 5, 1976
Camp AX030 (Shorong)	4850 m	27°43.1'N, 86°34.5'E	June 12-Sep. 20, 1976
Camp AX010 (Shorong)	4958 m	27°42.8'N, 86°34.1'E	May 23-Sep. 25, 1978

**1. Lhajung  
Precipitation (mm)**

	Rainfall and snowfall amount												Number of days						
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual Amount	Maximum in 24 hours and date	Less than 1.0 mm	1.0 - 9.9	10.0 - 24.9	25.0 or more than 49.9 mm	
1973 a				1.5	17.5	75.0	136.5	133.0	64.7	115.0	0.0	0.0	(543)	61.5 July 23	31	62	6	3	1
b																			
1974 a				13.5	19.5	134.5	74.5	51.6						25.5 July 22	45	63	7	1	0
b	4.0	0.3	18.0	4.8	48.5	40.1	193.5	134.4	59.6	17.1	0.0	8.2	528.5	25.4 Aug. 4	24	82	9	1	0
c							177.8	117.5	50.0										
1975 c	34.4	24.7	11.3	6.9	0.0	40.8	166.1	148.8	64.5	10.9	0.0	×	508.4	19.9 July 6	24	81	11	0	0
1976 c	×	×	×	×	11.6	72.8	72.7	104.8	67.0	0.6*				19.7 Sep. 14	47	52	9	0	0

a. measured with a tipping-bucket gauge near the screen.

b. measured with a ordinary gauge at the lee side of the valley wind from the screen.

c. measured with a ordinary gauge buried at the ground surface beside the tipping-bucket gauge.  
 \* up to Oct. 5

Air temperature (°C) monthly means and extremes

	03h		06h		09h		12h		15h		18h		21h		24h		Mean		Range		Highest		Lowest			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
1973 Apr.	-0.7	-0.9	3.1	4.3	2.7	0.5	-0.1	-0.5	1.0	5.5*	-2.3*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	7.8*	-7.6*	
May	0.6	0.4	3.2	4.7	3.8	2.3	1.6	1.1	2.2	7.3	1.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.8	
June	4.5	4.2	6.2	7.1	7.2	6.1	5.4	5.0	5.7	9.3*	4.9*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	4.4*	1.2*	
July	5.5	5.3	7.7	8.8	8.6	7.4	6.7	6.0	7.0	10.5	5.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	3.6	
Aug.	4.9	4.6	6.9	7.9	7.8	6.5	5.8	5.4	6.2	9.2	4.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.4	
Sep.	4.1	3.7	5.8	7.1	6.9	5.3	4.9	4.4	5.3	8.1	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	0.4	
Oct.	-0.7	-1.3	1.7	3.4	2.7	0.4	-0.2	-0.7	0.7	2.8	-2.9	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	-7.0	
Nov.	-4.1	-4.4	-1.0	0.9	0.0	-3.0	-3.4	-3.8	-2.4	3.8	-4.5	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	-8.6	
Dec.	-5.9	-6.2	-5.3	-0.6	-1.1	-4.8	-5.2	-5.8	-4.4	1.6	-7.8	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	-12.3	
1974 Jan.	-9.0	-9.0	-7.0	-4.0	-4.7	-7.6	-8.3	-8.9	-7.3	-1.1	-11.3	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	-15.8
Feb.	-6.7	-6.4	-2.9	-1.9	-2.3	-6.1	-6.2	-6.1	-4.8	0.8	-9.4	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	-15.4
Mar.	-5.2	-5.6	-1.8	-1.0	-0.9	-3.9	-4.7	-4.9	-3.5	2.9	-6.4	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	-10.5
Apr.	-1.3	-1.4	2.9	4.3	2.6	0.2	-0.4	-0.8	0.8	6.4	-3.4	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	-7.9
	0240	0540	0840	1140	1440	1740	2040	2340																		
May	0.6	0.3	3.3	5.2	4.4	2.3	1.7	1.3	2.4	7.8	-1.6	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	-8.2
June	3.7	3.3	5.7	7.2	7.4	5.3	4.6	4.2	5.2	9.3	2.2	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	-1.6
July	5.2	4.8	6.6	7.6	7.5	6.5	6.0	5.6	6.2	9.4	3.9	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	2.5
Aug.	5.1	4.6	6.6	8.0	7.5	6.2	5.9	5.4	6.2	9.5	3.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	1.3
Sep.	2.9	2.4	4.3	5.5	5.2	3.7	3.4	3.1	3.8	7.3	0.8	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	-0.9
Oct.	1.1	0.5	3.7	5.0	4.8	2.2	1.8	1.2	2.5	7.0	-2.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	-7.2
Nov.	-5.8	-6.3	-0.7	1.1	1.1	-3.8	-4.9	-5.6	-3.1	3.1	-8.2	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	-13.4
Dec.	-8.6	-8.6	-7.1	-3.1	-4.3	-8.0	-8.2	-8.3	-7.0	-0.6	-11.9	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	-14.7

\* uncertain due to lack of data

	0240		0540		0840		1140		1440		1740		2040		2340		Mean		Mean		Range		Highest		Lowest	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Min.
1975 Jan.	-9.3	-9.4	-7.7	-4.3	-5.0	-8.1	-8.4	-9.0	-7.7	-2.4	-12.7	10.3	5.4	-18.7												
Feb.	-8.5	-8.3	-5.2	-3.4	-3.7	-7.3	-7.8	-8.6	-6.6	0.6	-11.1*	10.5*	4.7	-16.4												
Mar.	-6.1	-6.3	-1.9	0.0	-0.6	-4.5	-5.1	-5.6	-3.7	1.9	7.5	9.4	5.2	-12.1												
Apr.	-2.7	-2.2	1.8	4.6	3.7	-0.3	-1.4	-1.9	0.2	6.0	4.0	10.0	9.5	-10.4												
May	-0.3	-0.7	3.5	6.2	5.2	1.9	0.9	0.4	2.1	7.3*	2.4*	9.7*	9.8*	-6.0*												
June	3.9	3.8	6.3	8.4	8.1	5.7	5.0	4.7	5.7	10.0*	3.1*	6.9*	12.6	-1.4												
July	4.3	4.1	6.4	7.1	7.2	5.9	5.1	4.7	5.6	8.7*	3.8*	4.9*	10.7	2.6												
Aug.	4.0	4.1	6.7	8.1	7.4	5.6	5.1	4.5	5.7	9.2	3.5	5.7	11.5	2.2												
Sep.	2.7	2.4	4.8	6.1	5.3	4.0	3.5	3.1	4.0	7.2*	2.6*	4.6*	13.1	-0.9												
Oct.	0.5	0.0	4.0	5.5	5.1	1.8	1.4	0.7	2.4	6.5	1.1	7.6	8.8	-7.0												
Nov.	-4.2	-3.8	1.7	1.5	0.0	-3.9	-3.8	-3.9	-2.1	5.0*	5.2*	10.2*	8.0*	-10.7*												
Dec.	-7.2*	-7.5*	-5.3*	-0.9*	-2.3*	-6.1*	-6.9*	-7.3*	-5.4*	1.3*	9.9*	11.2*	7.0*	-22.4*												
1976 Jan.	-9.6	-9.6	-7.7	-3.4	-4.2	-8.1	-8.9	-9.5	-7.6	-1.0*	-10.8*	9.8*	4.4	-18.4												
Feb.	-7.1	-7.3	-4.0	-1.9	-2.5	-5.8	-6.6	-7.0	-5.3	0.4*	-9.4*	9.8*	6.4*	-21.8*												
Mar.	×	×	×	×	×	×	×	×	×	2.7*	-12.8*	15.5*	-16.6*													
Apr.	×	×	×	×	×	×	×	×	×	×	×	×	×													
May	0.5	-0.1	3.7	6.0	5.0	2.3	1.6	0.9	2.5	7.1*	5.2*	12.3*	10.2	-10.5												
June	3.8	3.2	6.8	8.7	7.2	5.3	4.7	4.4	5.5	9.4*	1.7*	7.7*	12.6	-3.7												
July	4.9	4.7	7.9	9.1	8.5	6.4	6.0	5.4	6.6	0.4	3.6	6.8	12.6	1.6												
Aug.	4.5	4.3	6.9	8.1	7.5	5.9	5.4	5.0	6.0	9.1*	3.6*	5.5*	11.6	1.8												
Sep.	2.7	2.3	5.5	7.2	6.4	4.0	3.5	3.0	4.3	8.0*	1.4*	6.6*	9.7	-1.3*												

\* uncertain due to lack of data

2. Camp AX030 and Camp AX010  
Precipitation (mm)

	Rainfall and snowfall amount										Number of days		
	May	June	July	Aug.	Sep.	Maximum in 24 hours and date		less than 1.0 mm	1.0	10.0	25.0	more than	
Camp AX030 1976	168.7* <sup>1</sup>	313.2	500.6	148.9* <sup>2</sup>	46.0	Aug. 2	7	48	37	8	0	0	
Camp AX010 1978	6* <sup>3</sup>	254	479	503	213* <sup>4</sup>	45 Sep. 13	15	53	46	12	0	0	

\*1. from June 12, 2. up to Sep. 18, 3. from May 23, 4. up to Sep. 25

Air temperature (°C) monthly means and extremes

	Air temperature (°C) monthly means and extremes												
	0240	0540	0840	1140	1440	1740	2040	2340	Mean Max.	Mean Min.	Range	Highest Max.	Lowest Min.
Jun.* <sup>1</sup>	1.0*	0.8*	3.5*	4.1*	3.3*	1.9*	1.8*	0.6*	2.1*	6.6*	-0.2*	6.8*	9.3*
Camp AX030 1976	2.0	2.0	4.9	5.1	4.7	4.0	3.1	2.5	3.5	7.0	1.2	5.8	10.2
Aug.	1.5	1.3	3.7	3.6	3.8	3.2	2.3	1.7	2.7	5.6	0.6	5.0	9.5*
Sep.* <sup>2</sup>	0.8	0.5	2.8	3.5	2.9	1.9	1.7	1.1	1.9	5.6	-0.5	6.1	9.3
May * <sup>3</sup>	-2.0	-1.9	1.0	2.8	3.3	1.4	0.6	-0.4	0.6	5.7	-3.0	8.7	7.8
Camp AX010 1978	1.2	1.1	3.0	3.9	4.4	3.6	2.4	1.6	2.7	6.0	0.3	5.7	8.5
July	1.8	1.6	2.9	4.1	4.4	3.7	2.9	2.4	3.0	5.4	1.2	4.2	8.3
Aug.	1.3	1.1	2.9	3.7	3.8	3.0	2.4	1.7	2.5	4.8	0.8	4.0	7.5
Sep.* <sup>4</sup>	0.4	0.0	2.1	3.0	3.5	1.9	1.1	0.6	1.6	5.3	-0.4	5.7	9.0

\* uncertain due to lack of data

\* 1. from June 15, 2. up to Sep. 20, 3. from May 23, 4. up to Sep. 25