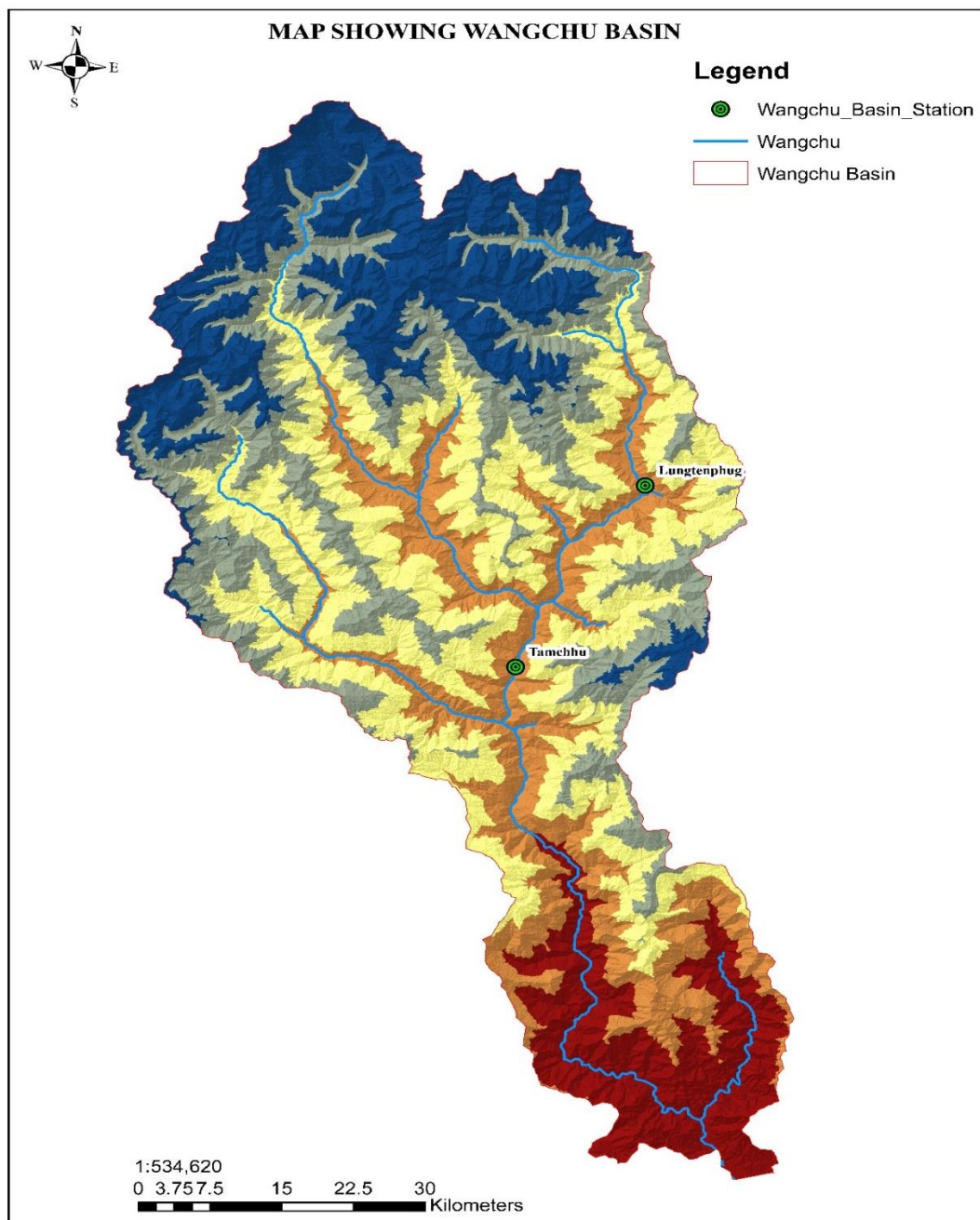


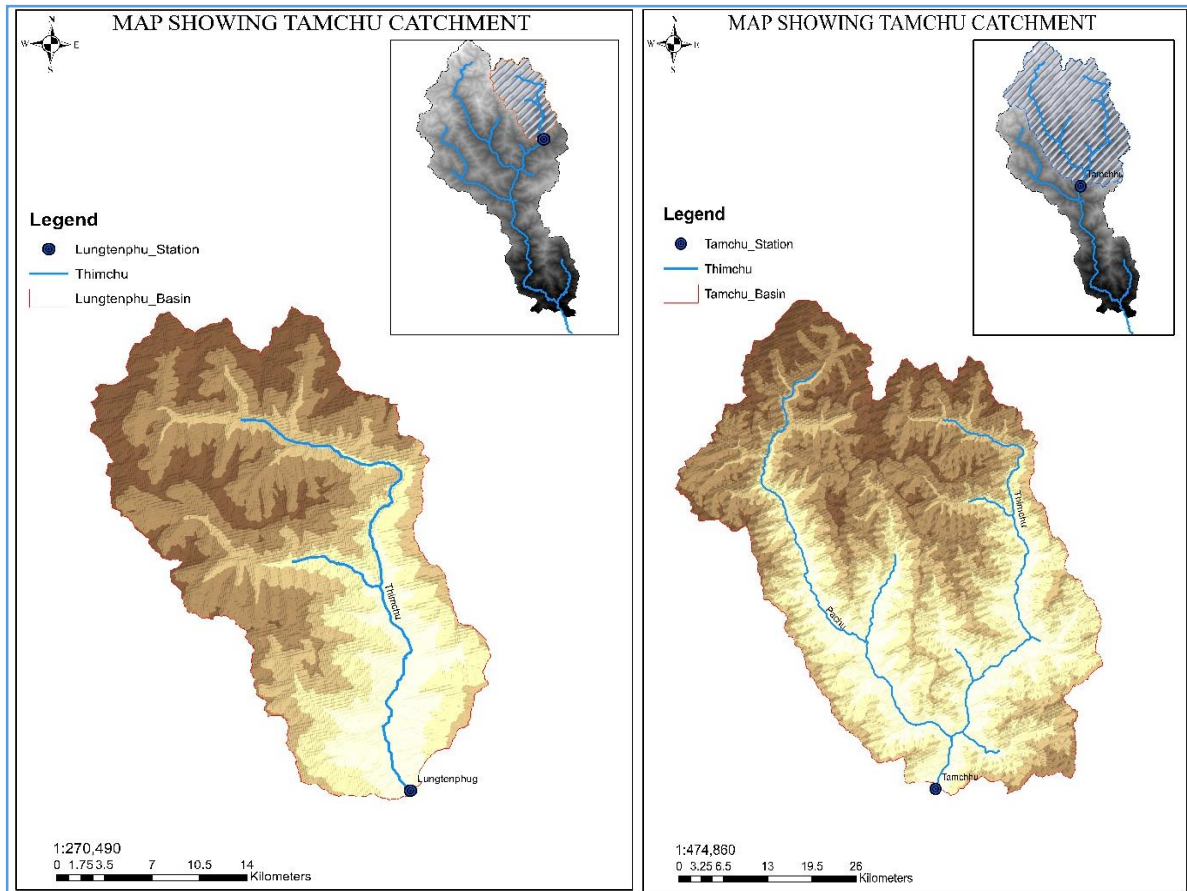
1 Wangchu Basin

The Wangchhu consists of three major tributaries from the three valleys of Thimphu, Paro and Haa. They originate within Bhutan from the glaciers and snow-capped mountains in the north. It flows south to the Indian plains through Chhukha district. The Wangchu Basin consists of three major sub catchment when the delineation is based on the number of rivers contributing to the whole basin.

There are five manual stations (two principle stations and three secondary stations) along the river in basin which provides sub daily water level and discharge data. The catchment delineation is based on the location of two principle stations located at Lungtenphug and Tamchu.



1.1 Sub-Catchment



Lungtenphu Sub Catchment:

Station Location: Lungtenphu on Thimphu

Coordinates: longitude : 89:39:40

Latitude : 27:26:48

Elevation : 2260

Catchment Area: 665.71sq.km

Tamchu Sub catchment

Station Location: Tamchu on Wangchu

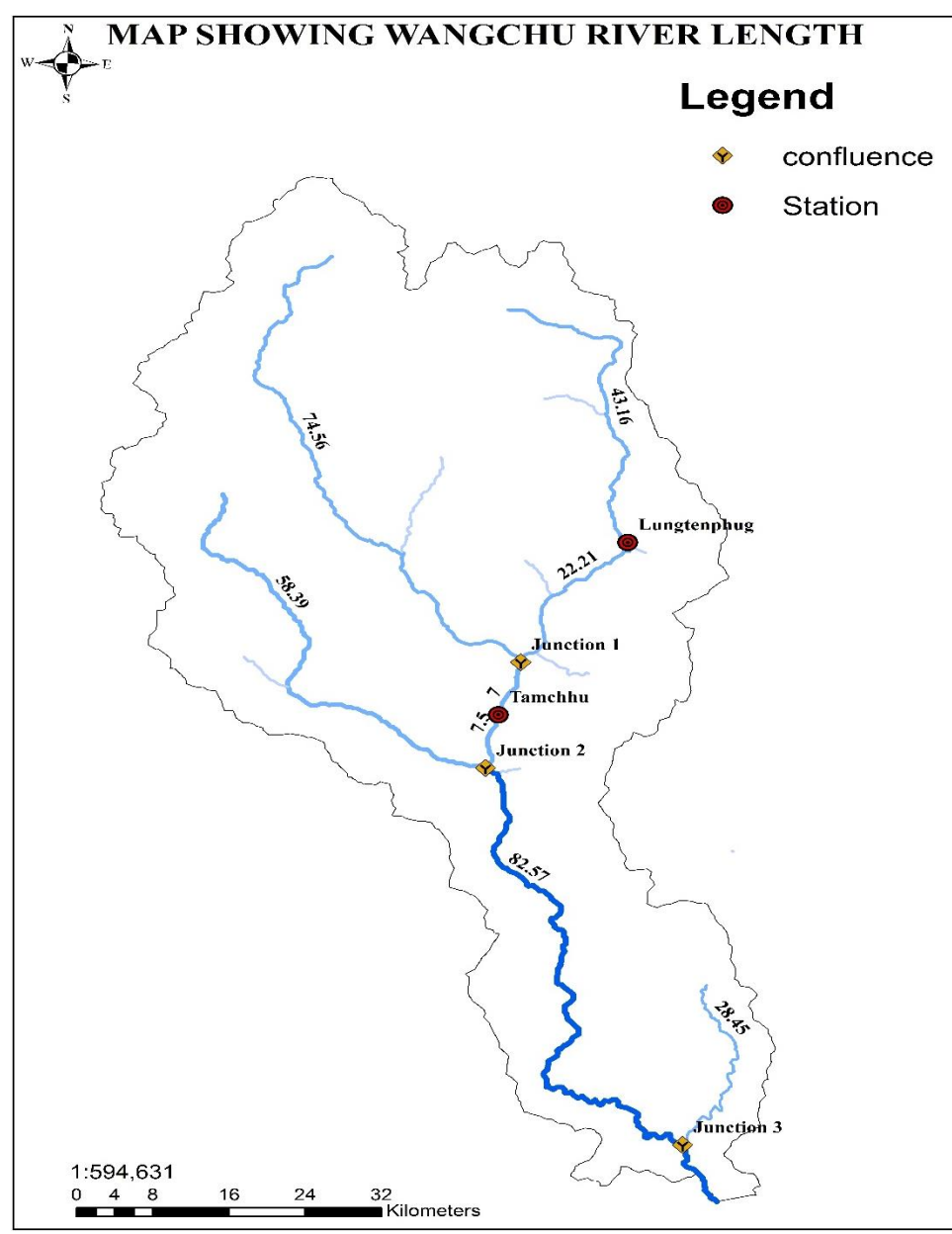
Coordinates: longitude : 89:31:38

latitude : 27:14:26

elevation : 1990

Catchment Area: 2529.17sq.km

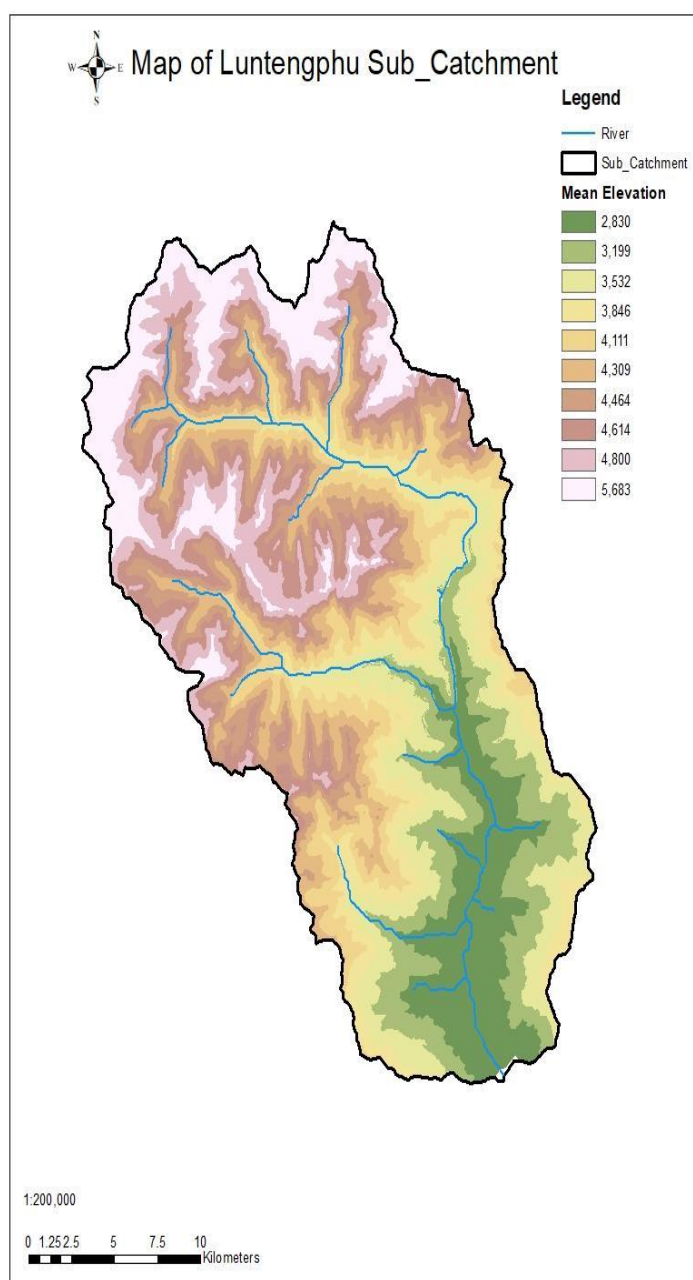
Major Streams and River Lengths:



Sl.No	Rivers	Length (km)
1	Thimchu till Lungtenphu Station	43.16
2	Thimchu till Tamchu	72.8
3	Pachu till confluence with Thimchu	74.56
4	Pachu till Tamchu Station	81.98
5	Thimchu	172.523
6	Pachu	181.709
7	Hachu	150.613

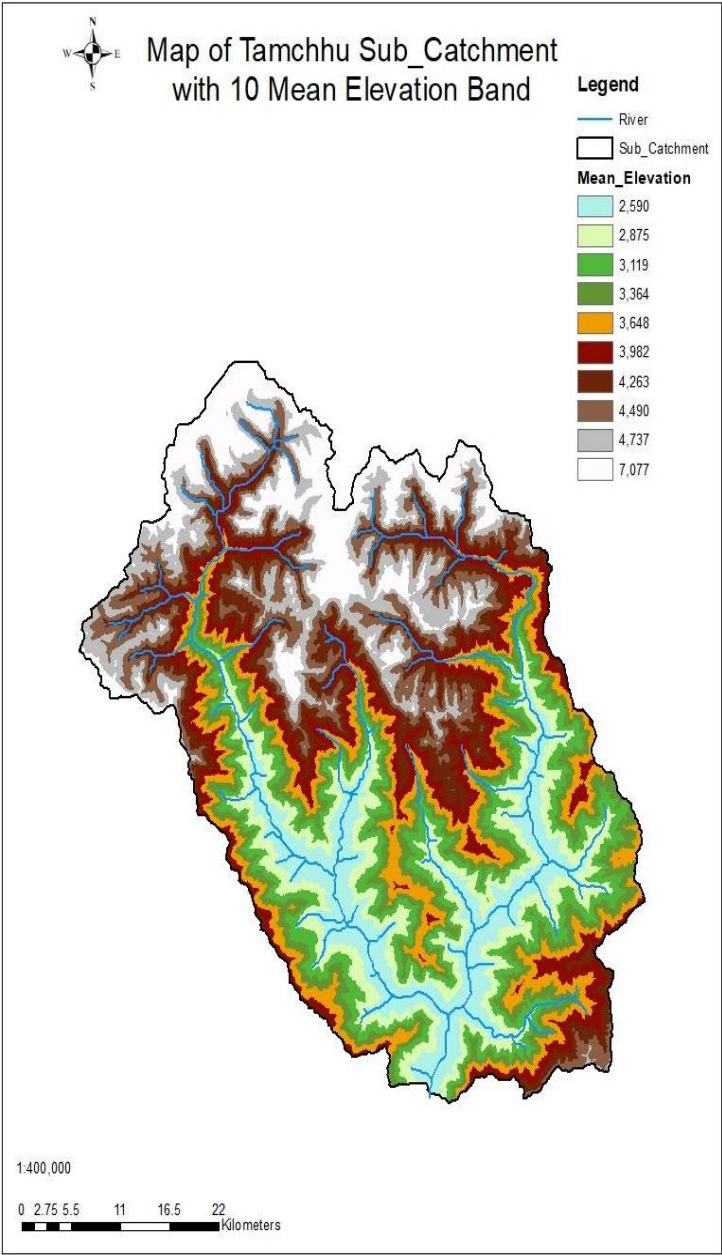
1.2 Land Use Area

Lungtenphu Sub Catchment:



Sl. No	Mean elevation band	Type	Area (sq.km)
1	2830	field	15.864
		forest	50.236
2	3199	forest	66.1
3	3532	field	1.322
		forest	64.778
4	3846	field	1.322
		forest	64.778
5	4111	field	7.271
		forest	58.829
6	4309	field	25.118
		forest	38.338
		glacier/lakes	2.644
7	4464	field	44.948
		forest	17.186
		glacier/lakes	3.966
8	4614	field	50.236
		forest	7.932
		glacier/lakes	7.932
9	4800	field	52.219
		forest	3.305
		glacier/lakes	10.576
10	5683	field	44.948
		glacier/lakes	21.152

Tamchu Sub Catchment:



Sl. No.	Mean Elevation Band	Type	Area (sq.km)
1	2590	field	85.816
		forest	166.584
2	2875	field	20.192
		forest	232.208
3	3119	field	10.096
		forest	242.304
4	3364	field	5.048
		forest	247.352
5	3648	field	20.192
		forest	232.208
6	3982	field	42.908
		forest	204.444
		glacier	5.048
7	4263	field	95.912
		forest	146.392
		glacier	10.096
8	4490	field	164.06
		forest	68.148
		glacier	20.192
9	4737	field	191.824
		forest	22.716
		glacier	37.86
10	7077	field	161.536
		forest	5.048
		glacier	85.816

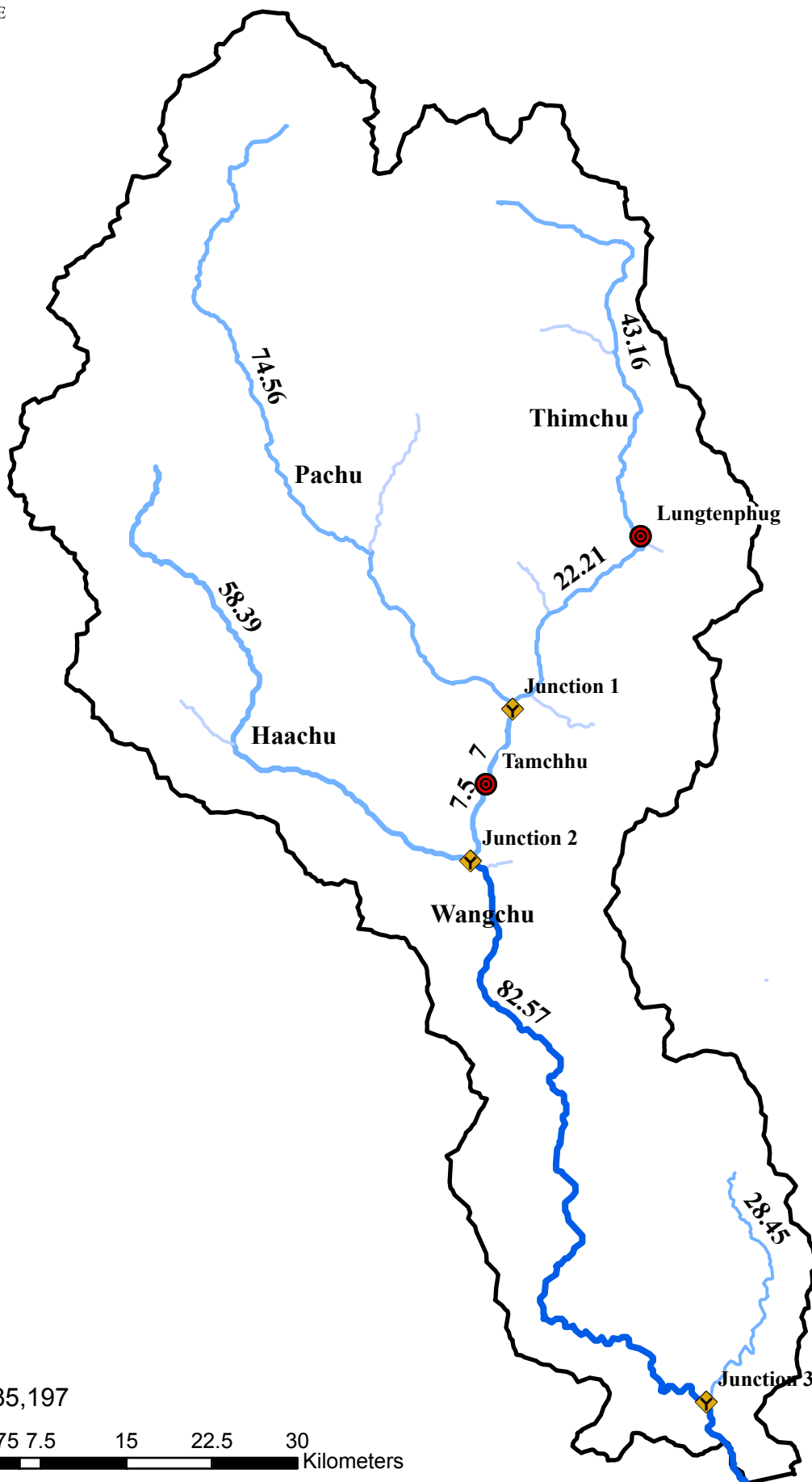


MAP SHOWING LENGTH OF RIVERS IN WANGCHU BASIN



Legend

- Station
- confluence



1:535,197

0 3.75 7.5 15 22.5 30 Kilometers

NCHM