



Climate Change

Himalayan Glaciers



Department of Science & Technology
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NMSHE NATIONAL MISSION FOR
SUSTAINING HIMALAYAN
ECOSYSTEM



Government of
Himachal Pradesh

IMPORTANCE OF HIMALAYAN GLACIERS



- There are 1,98,000 glaciers in the world. India contains about 9,000 of them, but these glaciers are mostly unexplored
- More than 700 million people in India, Bangladesh and Pakistan gets their water from rivers that are flowing from the Himalayan glaciers

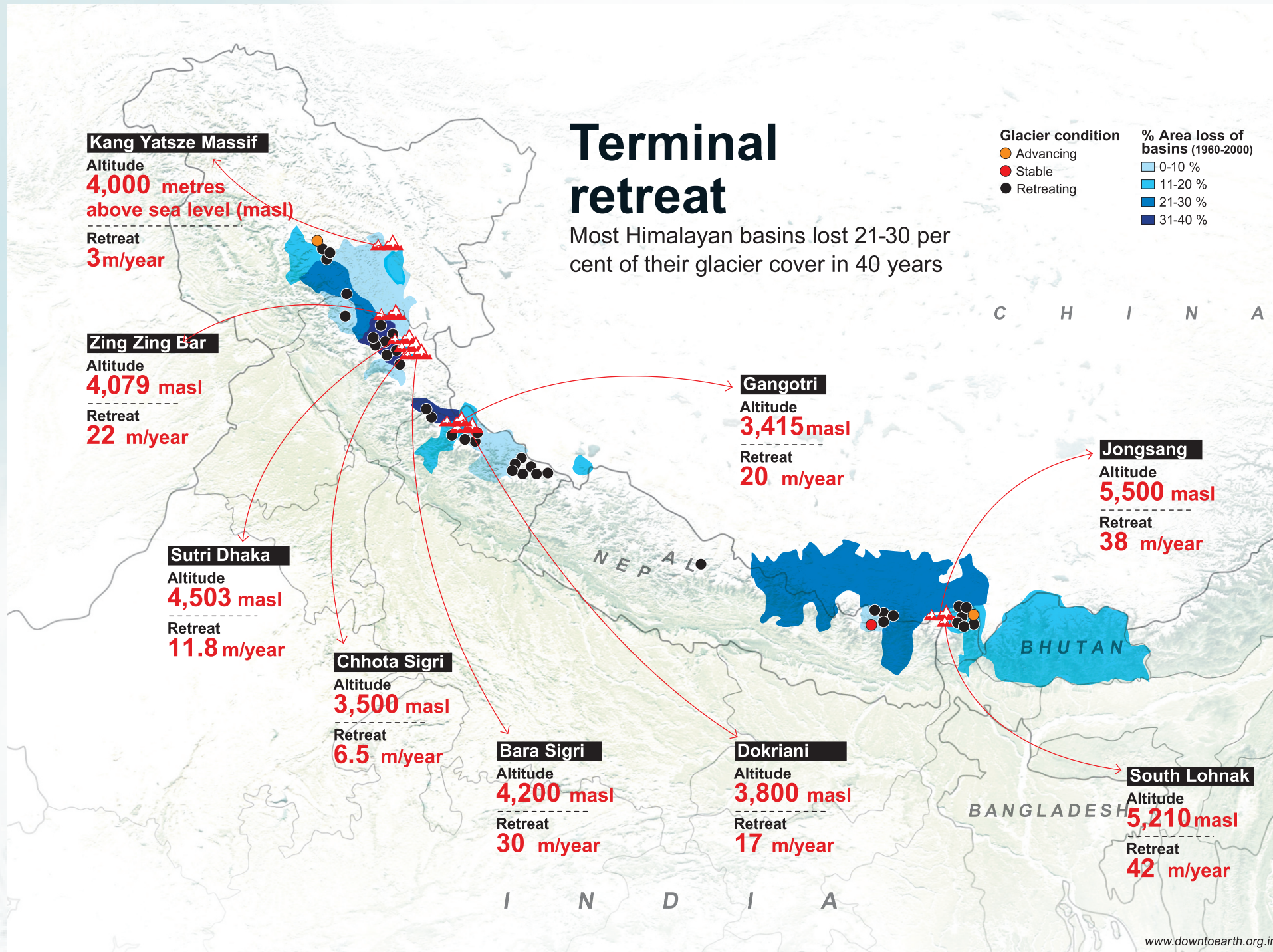
IMPACT OF CLIMATE CHANGE



- Himalayan glaciers are receding like others in the world, are at risk of melting because of increasing temperatures, erratic weather patterns & changing climate.
- Melting glaciers lead to riverine floods causing damage and loss to human life, livelihood and infrastructure.

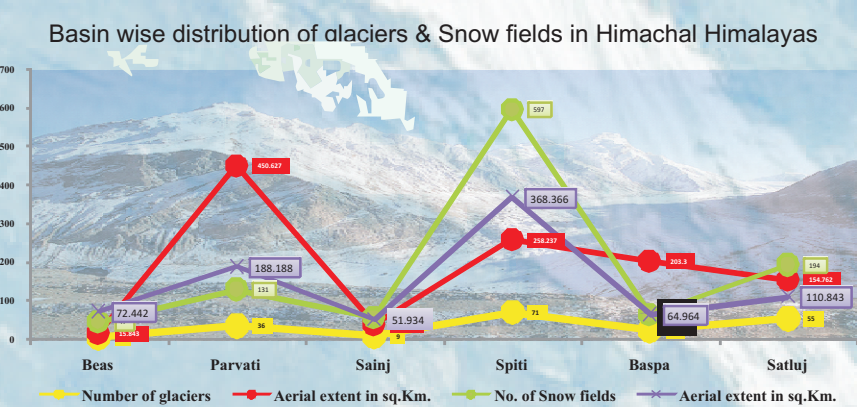
CONSEQUENCES - HIMACHAL PRADESH

- Consequence of the rising temperature and windward disposition **glacier retreat in Himachal Pradesh** has been observed to be more than anywhere else
- Increasing number of **moraine dammed and glacial lakes** having **GLOF threat** in the State
- Natural disasters such as **floods, flash-floods, and cloud burst** etc. are also increasing with increase in rate of melting of glacier frequency.
- Depleting glaciers will cause serious **Water Scarcity** affecting livelihood of people.



BASIN WISE DISTRIBUTION OF GLACIERS AND SNOW FIELDS IN HIMACHAL HIMALAYAS

Basin Name	Number of glaciers	Aerial extent in Sq. Km.	No. of Snow fields	Aerial extent in sq. Km.
Beas	6	15.843	47	72.442
Parvati	36	450.627	131	188.188
Sainj	9	37.255	59	51.934
Spiti	71	258.237	597	368.366
Baspa	25	203.3	66	64.964
Satluj	55	154.762	194	110.843

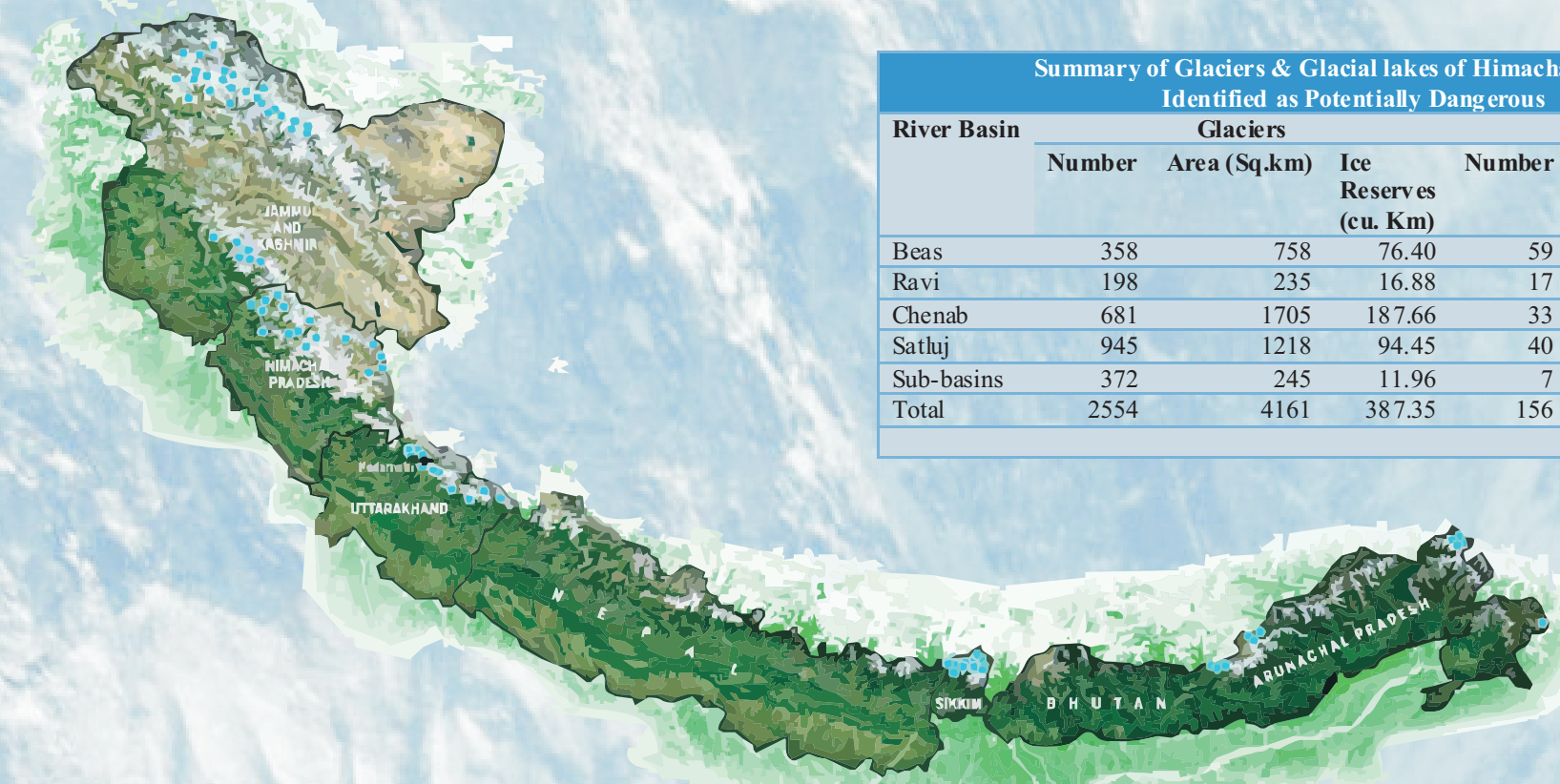


Glacier	Period of observation	No. of years	Average Retreat m/y
Satluj Basin			
Nagpotokpa	1962-1998	36	6.4
Gara	1974-1983	9	6.8
Chenab Basin			
Shaune Garang-	1981-1991	10	4.2
Chhota Shigri	1962-1995	33	6.81
Bara Shigri	1906-1995	89	29.78
Sonapani	1906-1957	51	17.63
Hamtah	1961-2001	40	16.25
Miyar	1961-1996	35	16.43
Trilokinath	1968-1996	28	17.86
Beas Basin			
Man Talai	1989-2004	5	23.3
Sara Umga	1989-2004	15	43.3
Beas Kund	1963-2003	40	18.8
Gl. Mp. 30	1963-2003	40	13.8
Jobri	1963-2003	40	2.5
Ravi Basin			
Tal	1963-2005	45	39.9
Mani Mehesh	1968-2005	37	29.1

Summary of Glaciers & Glacial lakes of Himachal Pradesh Identified as Potentially Dangerous

River Basin	Glaciers			Glacial lakes		
	Number	Area (Sq.km)	Ice Reserves (cu. Km)	Number	Area (sq.km.)	Potentially dangerous
Beas	358	758	76.40	59	236.20	5
Ravi	198	235	16.88	17	9.16	1
Chenab	681	1705	187.66	33	3.22	5
Satluj	945	1218	94.45	40	136.46	3
Sub-basins	372	245	11.96	7	0.18	2
Total	2554	4161	387.35	156	385.22	16

Source: ICMOD



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