LIST OF FIGURES

PAGE NO. FIGURES Fig 1.1. Location Map 8 & 9 Fig. 1.2. Physiographic map of H.P. 12 Fig. 2.1. Geological Map 19 Fig.3.1. DN values for Accumulation zone in band - 4,2,1 25 Fig.3.2. DN values for Accumulation zone in band - 4,2,1 25 Fig.3.3. Accumulation zone in SW/IR band 26 Fig.3.4. High DN values of Ablation zone near accumulation in 4, 2, 1 26 Fig.3.5 Low DN values of Ablation zone away from accumulation in 4,2,1 27 Fig.3.6. Indistinct discrimination in band 3, 2, 1 27 Fig.3.7. Distinct discrimination in band 4, 2, 1 27 Fig.3.8. Indistinct Snout of Jorya in band 3,2,1 28 Fig.3.9. Distinct Snout of Jorya in band 4,2,1 28 Fig.3.10. Morainic ridges from LISS III data 28 Fig.3.11. Morainic ridges from LISS III + Pan data 28 Fig.3.12. Original image 30 Fig.3.13. Contrast stretch image 30 Fig.3.14. Indistinct morainic ridges and deglaciated valley in original image 31 Fig.3.15. Distinct morainic ridges and deglaciated valley after Histogram Equalization 31 Fig.3.16. Original image before enhancement 32 Fig.3.17. Low frequency component image 32 Fig.3.18. High frequency component image 33 Fig.3.19. Indistinct stages of Lateral and Terminal moraines before edge Enhancement 33 Fig.3.20. Distinct stages of Lateral(LM) and Terminal moraines (TM) after Edge enhancement 34 Fig.3.21. Original image before applying Principal Component Analysis 35 Fig.3.22. In PC-4 Snout becomes more distinct 35 Fig.3.23. Extent of maximum glacial limit is very clear 36 Fig. 3.24. Stream becomes more prominent 37 Fig. 3.25. Lateral moraines becomes more prominent 37 Fig.3.26. Slope map of Baspa valley 39 Fig.4.1. Geomorphological map of glacier no.1 75 Fig.4.2. LISS III image of Aug, 2005 for glacier no.1 76 Fig.4.3. DEM for glacier no.1 77 Fig.4.4. Geomorphological map of glacier no.2, 3 & 4 78 Fig.4.8. LISS III image of Aug, 2005 for glacier no.2, 3 & 4 79 Fig.4.9. DEM for glacier no.2, 3 & 4 80 Fig.4.10. Geomorphological map of glacier no.5 to 12 81 Fig.4.11. LISS III image of Aug, 2005 for glacier no.5 to 12 8**Z** Fig.4.12. 11: DEM for glacier no.5 to 12 83 Fig.4.13. Geomorphological map of glacier no.13 & 14 84 Fig.4.14. LISS III image of Aug, 2005 for glacier no.13 & 14 85 Fig.4.15. DEM for glacier no.13 & 14 86 Fig.4.16. Geomorphological map of glacier no.15 & 16 87 Fig.4.17. LISS III image of Aug, 2005 for glacier no.15 & 16 88 Fig.4.18. DEM for glacier no.15 & 16 89 Fig.4.19. Geomorphological map of glacier no.17 90 Fig.4.20. Geomorphological map of glacier no.17a 91 Fig.4.21. Geomorphological map of glacier no.17b 92 Fig.4.22. LISS III image of Aug, 2005 for glacier no.17 93 Fig.4.23. LISS III image of Aug, 2005 for glacier no.17a 94 95 Fig.4.24. LISS III image of Aug, 2005 for glacier no.17b

Fig 4 25 DEM for allocier po 17, 175 5, 175	04	
Fig. 4.26. Geometric balagical map of alagiar no 19	90 07	
Fig. 4.27, LISS III image of Aug. 2005 for elector $no.10$	77 ·	
Fig. 4.28 DEM for algorithm 18	/70	
Fig 4 29 Geomorphological map of glacior no 19	77	
Fig 4 30' Geomorphological map of glacier no 19	100	
Fig. 4.31 LISS III image of Aug. 2005 for placer po 19	101	
Fig. 4.37 LISS III image of Aug. 2005 for glacier no. 19	102	
Fig 4 33 DEM for alacier no 19	105	
Fig 4 34 Geomorphological map of glacier no 20-24	104	
Fig 4 35 11 S III image of Aug. 2005 for placier po 20.24	105	
Fig 4 36 DEM for placier no 20-24	100	-
Fig. 4.37. Geomorphological map of glacier no 25-28	107	
Fig. 4.38. LISS III image of Aug. 2005 for placer no $25-28$	100	
Fig4 39 DEM for glacier no 25-28	109	
Fig.4.40. Geomorphological map of glacier no 29-30	110	
Fig 4.41 Geomorphological map of glacier no.30	117	
Fig.4.42.1 ISS III image of Aug. 2005 for glacier no. 29-30	112	
Fig. 4.43 LISS III image of Aug. 2005 for glacier no 30	113	
Fig. 4.44. DFM for alacier no 29 & 30	115	
Fig. 4.45. Geomorphological map of glacier no 31	115	
Fig.4.46. LISS III image of Aug. 2005 for glacier no 31	117	
Fig.4.47. DFM for placier no 31	110	
Fig. 4.48. Geomorphological map of glacier no 32 6.33	110	
Fig.4.49. LISS III image of Aug. 2005 for glacier no. 32 & 33	170	
Fig.4.50. DEM for alacier no $32 \& 33$	120	
Fig.4.51. Geomorphological map of glacier no 34	127	
Fig.4.52. LISS III image of Aug. 2005 for glacier no 34	122	
Fig. 4.53. DFM for placier no 34	123	
Fig.4.54. Geomorphological map of glacier no 35	124	
Fig.4.55. LISS III image of Aug. 2005 for glacier no 35	125	
Fig. 4.56. DFM for alacier no 35	120	
Fig. 6.1. Bar Diagram Glacier retreat	127	
Fig.6.2. Retreat zonation map of placiers of Baspa valley	140	
Fig. 7.1. Snowline variation	147	
Fig.7.2. Past and present glacial limit in Baspa valley	104	
Fig.7.3. Lengthwise evacuation of glacier from maximum limit	133	

.

/

iv

-

*.*_____

,