Supplementary Figures and Tables

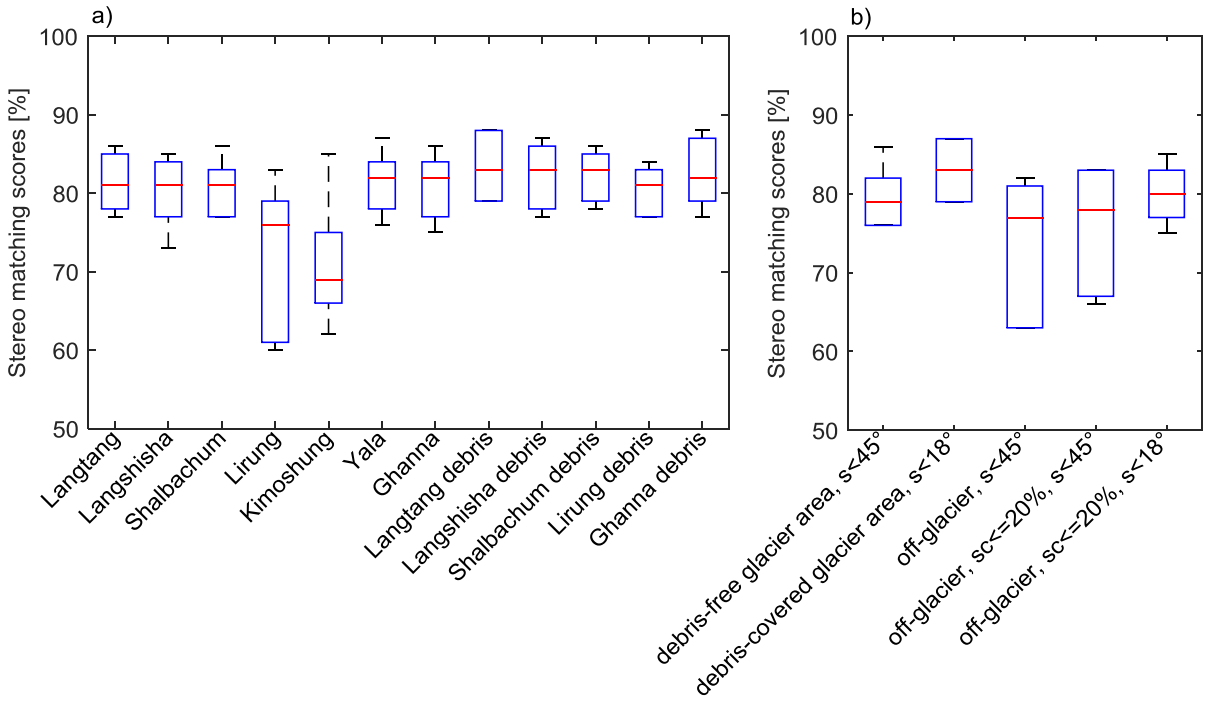

Figure S1: Ensemble of stereo matching scores per a) individual glacier and debris-covered area and of b) overall glacier / debris-covered area and off-glacier terrain. On each box, the central mark is the median of all DEMs (except Hexagon 1974 and WorldView 2015 DEMs for which matching scores are not available). The edges of each box are the 25th and 75th percentiles. The whiskers extend to the most extreme data points. The threshold slopes (*s*) of considered areas in b) correspond to the 95th percentile of glacier slopes (45°) and the 95th percentile of debris-covered glacier slopes (18°), respectively. *sc* is the monsoon snow-cover frequency.

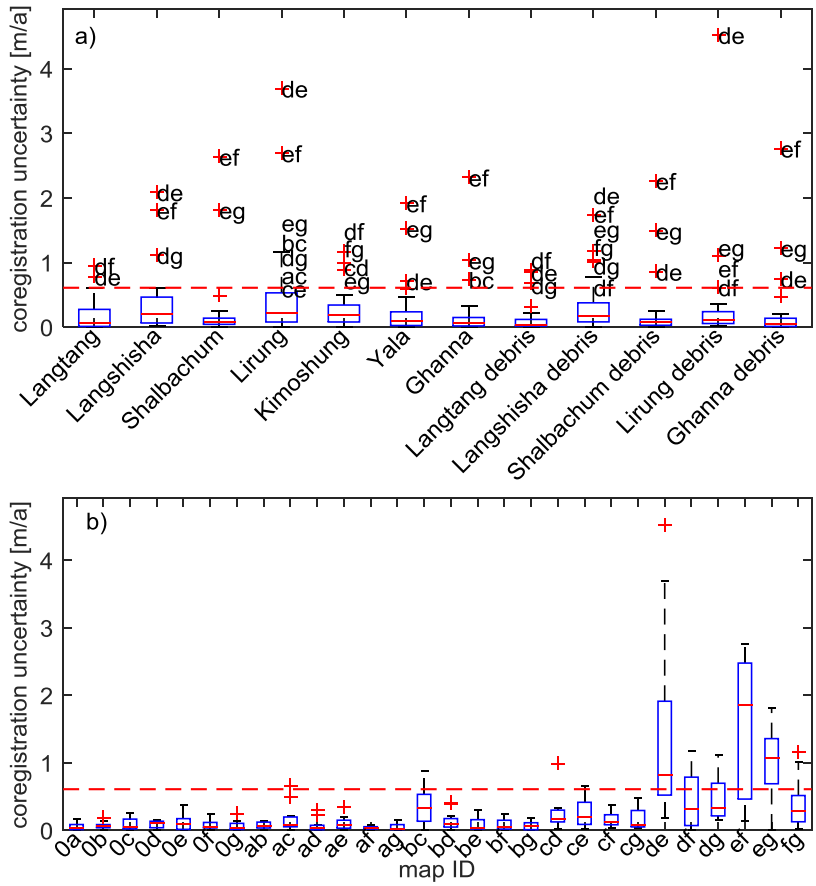

Figure S2: Ensemble of DEM adjustment uncertainties per individual glacier and debris-covered area (a) and ensemble of DEM adjustment uncertainties per Δh/Δt map (b). On each box, the central mark is the median of all Δh/Δt maps (a) or of all glaciers / debris-covered areas (b), respectively. The edges of the box are the 25th and 75th percentiles. The dashed red lines represent the threshold set for outlier elimination (0.61 m/a). Outliers are labelled in (a) by the corresponding map IDs. Map IDs are constituted of the corresponding DEM IDs (Table 4).

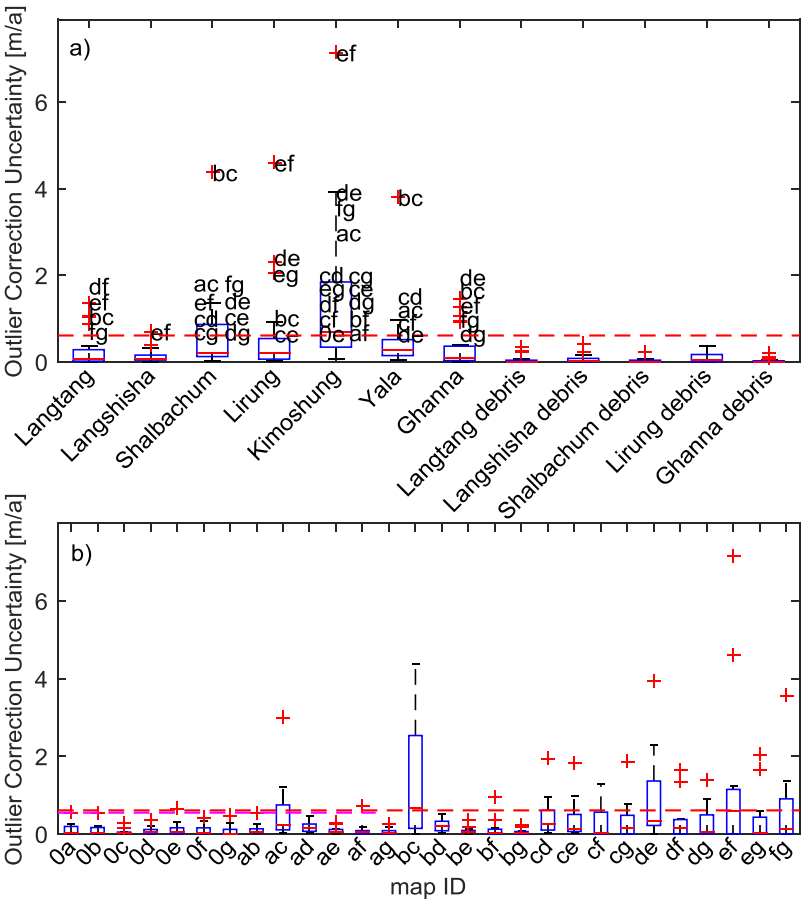

Figure S3: Ensemble of outlier correction uncertainties per individual glaciers and debris-covered area (a) and ensemble of outlier correction uncertainties per Δh/Δt map (b). On each box, the central mark is the median of all Δh/Δt maps (a) or of all glaciers / debris-covered areas (b), respectively. The edges of the box are the 25th and 75th percentiles. The dashed red lines represent the threshold set for outlier elimination (0.61 m/a). Outliers are labelled in (a) by the corresponding map IDs. Map IDs are constituted of the corresponding DEM IDs (Table 4).

Table S1: Overview of Δh/Δt map outliers, ST: stable terrain uncertainty (Figure 4), U: DEM adjustment uncertainty (Figure S2), O: outlier correction uncertainty (Figure S3), D: data availability (Figure 5b, in brackets: data availability >50% but the glacier is not entirely represented on the scene). Map IDs are constituted of the corresponding DEM IDs (Table 4).

Map ID		Langtang			Langshisha			Shalbachum			Lirung			Kimoshung			Yala			Ghanna			Langtang debris			Langshisha debris			Shalbachum debris			Lirung debris			Ghanna debris		
	ST	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D	U	O	D
0a													x																								
0b																																				
0c							(x)																					(x)									
0d				(x)												x								(x)													
0e															x																						
0f																																					
0g																																					
ab													x																								
ac	x						(x)		x		x		x		x	x		x										(x)									
ad				(x)									x			x								(x)													
ae													x																								
af													x		x	x																					
ag													x																								
bc	x		x				(x)		x		x	x	x		x	x		x		x	x							(x)									
bd				(x)									x			x								(x)													
be													x																								
bf													x		x	x																					
bg																																					
cd	x			(x)			(x)		x					x	x	x		x						(x)				(x)									
ce	x						(x)		x		x	x			x	x												(x)									
cf	x						(x)								x	x		x																			
cg	x						(x)		x						x	x												(x)									
de	x	x		(x)	x				x		x	x			x	x	x	x			x		x	(x)		x			x			x			x	
df		x	x	(x)										x	x	x							x	(x)													
dg		x		(x)	x				x		x				x	x					x		x	(x)		x										
ef	x		x		x	x		x	x		x	x			x	x	x			x	x					x			x			x			x	
eg	x							x			x	x		x	x		x			x						x			x			x			x	
fg			x						x					x	x						x						x									