

Appendix 1. Impact and uncertainty axes generated by workshop participant groups. Each group started by articulating areas of uncertainty about the future, and placed each along two axes, related to potential future impacts (low v. high) and level of uncertainty about the future trend or impact of that driver.

"CRITICAL UNCERTAINTIES"

Group	High-I, High-U	Low-I, High-U	High-I, Low-U	Low-I, Low-U
IMAR	Extreme weather	Human-induced land-use change	Herdsman's behavior, style of grazing	Transportation (new roads, trains)
	Precipitation	Urbanization	Management (fertilizer, irrigation)	Young people move out
	One/two child policy	meat output	Technology	Outside investment (mining)
	Subsidy policies	Market (beef, lamb price)	Fencing	Eco-structure
	Education policy	Population		Vegetation change
	Health policy	Environmental capital		
	Other policies	Social capital		
Mongolia	Multi-year drought	Livestock disease	Land management	Population growth
	Mining development	Cashmere market crash	Livestock number	Wildlife numbers
	Water limitation	Precipitation	Infrastructure	Social utility
	Petroleum price	Degradation	Education	
	Policy maker	Desertification		
	Political stability	China or Russia economic condition		
	Agriculture			

Plateau 1	Energy prices	Technology advancement	Increase in extreme weather	Increase in protected areas
	Ecosystem degradation	Functional multi-scale governance	Infrastructure investment	Pollution
	Foreign geopolitical influences	Human and livestock disease	Shift to market system	Agricultural expansion
	Highly developed mining industry	Ecosystem disturbance	Social mobility	Melting glaciers and permafrost
	World economic growth		Population change and redistribution	
	Increasing number of livestock Spatial variability of climate impacts			
Plateau 2	Stable global market	Mining	Invasive species	Green policy
	Extreme weather (drought)		Precipitation (distribution of drying vs wetting trends)	Overgrazing
	Controlled migration		balance of industrial vs. pastoral development	Public awareness
	New land ownership law		Projections of regional hydrological and biosphere trends	Improvement of Index based livestock insurance
			Policies re rural taxation and subsidies	
			Investments in soil and water preservation	