CLIMATE VULNERABILITY MONITOR

DARA

Climate Vulnerable Forum

COUNTRY PROFILE

KAZAKHSTAN

CLIMATE: LOW CARBON: MODERATE

THE MONITOR ASSESSMENT

The Climate Vulnerability Monitor provides a comprehensive national-level assessment of vulnerabilities and impact specifically related to contemporary climate change and carbon intensiveness. This 2012 Monitor assessment was commissioned by the Climate Vulnerable Forum and has been independently developed by DARA. It is grounded in leading and up-to-date scientific studies, research and data assimilated on the basis of an externally reviewed methodology. The assessment spans 34 indicators of impact/vulnerability: 22 for climate change ("Climate") and 12 for carbon intensiveness ("Carbon"). Estimates in human, economic and environmental terms are for 2010 and 2030. Vulnerability at country-level and by indicator is comparative to the 184 countries included in the assessment.

➔ **For the full report, data & additional info: www.daraint.org/cvm2 - cvm@daraint.org - +34 915310372**

ECONOMIC NATIONAL LOSS TOTALS: KAZAKHSTAN

ADDITIONAL ECONOMIC COSTS (NEGATIVE NUMBERS SHOW POSITIVE EFFECTS) - YEARLY AVERAGE

CLIMATE CHANGE IMPACT

LOSSES PER YEAR

2010 **0.3%GDP**
2030 **0.4%GDP**

CARBON INTENSIVENESS IMPACT

LOSSES PER YEAR

2010 **0.4%GDP**
2030 **0.6%GDP**

HUMAN NATIONAL LOSS TOTALS: KAZAKHSTAN

ADDITIONAL HUMAN IMPACTS (NEGATIVE NUMBERS SHOW POSITIVE EFFECTS) - YEARLY AVERAGE

CLIMATE +CARBON COMBINED

ADDITIONAL MORTALITY-YEARLY AVERAGE

2010 **9,000**
2030 **10,000**

ADDITIONAL PERSONS AFFECTED-YEARLY AVERAGE

CLIMATE

2010 **200,000**
2030 **250,000**

CARBON

2010 **150,000**
2030 **200,000**

FULL COUNTRY ASSESSMENT: KAZAKHSTAN

		VULNERABILITY LEVEL		ADDITIONAL ECONOMIC COSTS (MILLION USD PPP)		ADDITIONAL MORTALITY		ADDITIONAL AFFECTED POPULATION (1000s)		OTHER VALUE 1*		OTHER VALUE 2*	
		2010	2030	2010	2030	2010	2030	2010	2030	2010	2030	2010	2030
CLIMATE	**ENVIRONMENTAL DISASTERS**												
	DROUGHT		-	5	20								
	FLOODS AND LANDSLIDES			5	30	1	5	10	15				
	STORMS												
	WILDFIRES												
	TOTAL			10	50	1	5	10	15				
	HABITAT CHANGE												
	BIODIVERSITY	-	+	950	5,000					-5,750	-10,000	50	150
	DESERTIFICATION			-5	-45			0	-2	-150	-300		
	HEATING AND COOLING			-150	-850					-2,500	-4,750	-2,500	-5,000
	LABOUR PRODUCTIVITY			-250	-1,750					40	30		
	PERMAFROST			200	800			75	150				
	SEA-LEVEL RISE												
	WATER			-50	-350					-0	-0		
	TOTAL			695	2,805			74	148				
	HEALTH IMPACT												
	DIARRHEAL INFECTIONS					1	0	0					
	HEAT AND COLD ILLNESSES		-			15	85						
	HUNGER												
	MALARIA AND VECTOR-BORNE							0	0				
	MENINGITIS					40	45	0	0				
	TOTAL					56	130	0	0				
	INDUSTRY STRESS												
	AGRICULTURE			-55	-400								
	FISHERIES			5	85								
	FORESTRY			5	75								
	HYDRO ENERGY			-10	-70								
	TOURISM												
	TRANSPORT												
	TOTAL			-55	-310								
	CLIMATE TOTAL			**650**	**2,545**	**57**	**135**	**84**	**163**				
CARBON	**ENVIRONMENTAL DISASTERS**												
	OIL SANDS												
	OIL SPILLS												
	TOTAL			0	0								
	HABITAT CHANGE												
	BIODIVERSITY			350	2,250					15	65		
	CORROSION	-	+	1	5								
	WATER			1	5					55	75		
	TOTAL			352	2260								
	HEALTH IMPACT												
	AIR POLLUTION	+	+			6,500	7,750	85	150				
	INDOOR SMOKE					2,000	2,000	20	20				
	OCCUPATIONAL HAZARDS	+	+			300	350	45	45				
	SKIN CANCER	-	-			50	100	0	0				
	TOTAL					8850	10200	150	215				
	INDUSTRY STRESS												
	AGRICULTURE	+	+	150	300								
	FISHERIES												
	FORESTRY												
	TOTAL			150	300								
	CARBON TOTAL			**502**	**2,560**	**8,850**	**10,200**	**150**	**215**				

VULNERABILITY LEVELS:

- + Acute+
- + High+
- - Acute-
- - High-
- + Severe+
- Moderate
- - Severe-
- Low

+ = Upper tier of vulnerability level
- = Lower tier of vulnerability level

- Environmental disasters
- Habitat change
- Health impact
- Industry stress

CLIMATE = Impact/Vulnerability to Climate Change

CARBON = Impact/Vulnerability to Carbon Intensiveness

	OTHER VALUE 1	OTHER VALUE 2
BIODIVERSITY	Contraction of biological zones (km^2) (cumulative)	Decline in biological richness
DESERTI-FICATION	Additional land degraded (km^2) (cumulative)	
HEATING & COOLING	Change in energy load (GWh)	
LABOUR PRODUCTIVITY	Share of workforce particularly affected (%)	
SEA-LEVEL RISE	Net loss of land (km^2) (cumulative)	
WATER	Loss in water runoff 2030 (km^3)	
OIL SANDS	Tonnes toxic waste (1000s)	
OIL SPILLS	Gallons oil spill (1000s)	
BIODIVERSITY	Decline in biological richness	
WATER	Volume of water to treat (millions m^3)	