# **CLIMATE VULNERABILITY MONITOR**







COUNTRY PROFILE

## SAUDI ARABIA







#### 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: SAUDI ARABIA**

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

CLIMAIE CHANGE

2010 **0.2%**<sub>GDP</sub> 2030 **0.5%**<sub>cm</sub>

CARBON INTENSIVENESS

2010 **0.4%**<sub>GDP</sub> 2030 **0.5%**<sub>GDB</sub>

ADDITIONAL PERSONS AFFECTED-YEARLY AVERAGE



#### **HUMAN NATIONAL LOSS TOTALS: SAUDI ARABIA**

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

ADDITIONAL MORTALITY-YEARLY AVERAGE

CLIMATE +CARBON

2010 6,000 2030 10,000

🔊 CARBON

CLIMATE

ΔΠΠΙΤΙΠΝΔΙ

2010 100,000

2010 **500,000** 

2030 400,000

2030 250,000

### **FULL COUNTRY ASSESSMENT: SAUDI ARABIA**

■ DESERTIFICATION				VULNERABILITY LEVEL	ECONOM	IONAL IIC COSTS USD PPP)	ADDIT MORT	IONAL ALITY	ADDITIONAL AFFECTED POPULATION (1000s)		OTHER VALUE 1*		OTHER VALUE 2*		_				
DROUGHT   1				2010 2030	2010	2030	2010	2030	2010	2030	2010	2030	2010	2030	_				
FLOODS AND LANDSLIDES   10 90 1 1 2   2   3   5   5   5   5   5   5   5   5   5	(	1	ENVIRONMENTAL DISASTERS												VULNERABIL	.ITY LEVELS:			
MILDERIDES   150   0   1   1   2		_	DROUGHT		1	10									+ Acute+	+ High-	-		
MILDERIDES   150   0   1   1   2			FLOODS AND LANDSLIDES		10	90		1	1	2					- Acute-	- High-			
WILDIFFICE   150			STORMS		-30	-250									_				
### HABITAT CHANGE BROWERSITY DESERTIFICATION 150 150 1250 1250 2250 200 7,250 1040			WILDFIRES												_	_	rate		
BIODIVERSITY			TOTAL		-19	-150	0	1	1	2					Severe-	Low			
■ DESERTIFICATION			HABITAT CHANGE																
## ABTING AND COOLING											-15,000	-25,000	10	40	+ = Upper tier	+ = Upper tier of vulnerability level			
LABOUR PRODUCTIVITY    PARTHER   20   1,500   0   0   40   90   1-8-bitel change   1-8-b		<b>%</b>		-											<ul> <li>= Lower tier of vulnerability level</li> </ul>				
FERMARROST  FERMARROST  FERMARROST  SPERMARROST  FERMARROST  SPERMARROST  SPERMARRO	16												2,000	7,250					
FERMINATED   1,500   0   0   40   90     Habitat change   1,500   1,500   0   0   0   0   0   0   0   0   0	CLIMATE				200	1,250					22	15			(A) Environme	notal disastors			
## ANTER															•				
TOTAL    MEALTH IMPACT   DIARRHEAL INFECTIONS   15 0 0									0	0	40				. Habitat ch	ange			
##AT AND COLD ILLNESSES   150												0			. Health im	pact			
##AT AND COLD ILLNESSES   150		- 1			1,095	8,950			0	0					(N) ladustaus				
##AT AND COLD ILLNESSES   150															y industry si	1622			
HUNGER  MALARIA AND VECTOR-BORNE  MENINGITIS  TOTAL  INDUSTRY STRESS  AGRICULTURE  FISHERIES  BES  BES  BES  BES  BES  BES  BES		•							0										
MALARIA AND VECTOR-BORNE MINISITIS  TOTAL  INDUSTRY STRESS  AGRICULTURE  100 950 FORESTRY HYDRO ENERGY HYDRO ENERGY HYDRO ENERGY TOTAL  285 2,900 COLUMN TRANSPORT TOTAL  1,801 11,700 160 325 2 3  HEATIN 8.  COLUMN TRANSPORT FORESTRY  BUILD STRESS  AGRICULTURE AGRICULTURE 100 950 RESERT  HYDRO ENERGY HYDRO ENERGY HYDRO ENERGY HYDRO ENERGY HYDRO ENERGY TOTAL  285 2,900 COLUMN TRANSPORT FICATION COULING COLUMN TRANSPORT FICATION COLUMN TRANSPORT FICATION FICATION COLUMN TRANSPORT FICATION COLUMN TRANSPORT FICATION COLUMN TRANSPORT FICATION FICATION COLUMN TRANSPORT FICATION FICATION COLUMN TRANSPORT FICATION COLUMN TRANSPORT FICATION COLUMN TRANSPORT FICATION FICATION FICATION COLUMN TRANSPORT FICATION FICATION FICATION COLUMN TRANSPORT FICATION FIC									•										
MENINGRITIS   15				_			55	150	U	U					_		-		
TOTAL 100 325 0 0 0  WINDISTRY STRESS AGRICULTURE 100 950 FRESTRY 100 1,000 TRANSPORT 100 1,000 TOTAL 285 2,900 CLIMATE TOTAL 1,361 11,700 160 325 2 3  ENVIRONMENTAL DISASTERS OIL SPILLS 2,000 8,000 8,000 8,250 9,000 OIL SPILLS 100 1,000 100 1000 1000 1000 1000 1000							45	25	0	0									
NDUSTRY STRESS																o Carbon Inter	nsiveness		
AGRICULTURE FISHERIES		<b>%</b>					100	325	U	U									
FISHERIES  FORESTRY FORESTRY HYDRO ENERGY TOURISM TOTAL 285 2,900 CHIMATE TOTAL 1,361 11,700 160 325 2 3  ENVIRONMENTAL DISASTERS OIL SANDS OIL SPILLS OIL SPILLS OIL SPILLS OON SOON 1 1 10  WATER TOTAL 2000 8,000 SEA-LEVEL HABITAT CHANGE BIODIVERSITY CORROSION 1 1 10 SEA-LEVEL HEALTH IMPACT AIR POLLUTION NINDOOR SMOKE OCCUPATIONAL HAZARDS SKIN CANCER 1070AL 1,250 1,750 15 20 OIL SANDS OIL SPILLS OI					100	050											OTHER		
PORESTRY																VALUE 1	VALUE 2		
HYDRO ENERGY   100   1,000					00	330											Decline in		
TOURISM TRANSPORT TOTAL 285 2,900 SENTI-FICATION DESERTI-FICATION CIGATION															BIODIVERSITY		biological		
TRANSPORT TOTAL  285					100	1.000											richness		
TOTAL   285   2,900     FICATION   Cumulative)   Cumulat					100	1,000									DECEDII				
ENVIRONMENTAL DISASTERS					285	2 900									FICATION	degraded (km²)			
ENVIRONMENTAL DISASTERS   COULING   Change in energy   Couling   Change in energy   Couling   Change in energy   Couling   Couling   Couling   Change in energy   Couling   Couli							160	325	2	3						(cumulative)			
ENVIRONMENTAL DISASTERS					,	,													
PRODUCTIVITY   Particularly   PRODUCTIVITY   Particularly   PRODUCTIVITY   Particularly   Part	CARBON	$\sim$																	
PRODUCTIVITY   Particularly   PRODUCTIVITY   Particularly   PRODUCTIVITY   Particularly   Part					0.000	0.000					0.050	0.000			LABOUR				
HABITAT CHANGE   BIODIVERSITY   35 250											8,250	9,000				particularly			
BIODIVERSITY   35 250					2000	8000										affected (%)			
CORROSION 1 1 10 RISE (Band km²) WATER TOTAL 36 260  WATER TOTAL 4,750 8,500 75 200 INDOOR SMOKE 1,250 1,750 15 20 OCCUPATIONAL HAZARDS 20 25 15 20 OCCUPATIONAL HAZARDS 15 45 0 0 0 0 OCCUPATIONAL HAZARDS 15 0 0 0 0 0 OCCUPATIONAL HAZARDS 15 0 0 0 0 0 OCCUPATIONAL HAZARDS 15 0 0 0 0 0 0 0 OCCUPATIONAL					25	250						10			SEA-LEVEL				
WATER TOTAL  AIR POLLUTION  INDOOR SMOKE  OCCUPATIONAL HAZARDS  SKIN CANCER  TOTAL  INDUSTRY STRESS  AGRICULTURE  FISHERIES  AGRICULTURE  FORESTRY  TOTAL  15  45  45  FORESTRY  TOTAL  55  -404.25  WATER  WATER  WATER  Unoff 2030  (km²)  1,250  1,750  15  20  20  20  1,750  15  20  20  20  21  31  4,750  4,750  5,50  1,750  15  20  20  30  30  30  30  30  30  30  30												10							
TOTAL 36 260    HEALTH IMPACT					'	10													
HEALTH IMPACT  AIR POLLUTION					36	260									WATER	runoff 2030			
INDOOR SMOKE		i			30	200										(km³)			
INDOOR SMOKE							4.750	8 500	75	200						Tonnes toxic			
OCCUPATIONAL HAZARDS SKIN CANCER 15 45 0 0 TOTAL INDUSTRY STRESS AGRICULTURE FISHERIES 5 45 FORESTRY 10 -450 FISHERIES 5 45 FORESTRY 11 -5 -404.25  OIL SPILLS Gallons oil spill (1000s) 105 240  Decline in biological richness Volume of the spill (1000s) WATER WATER WATER WATER (millions m²)		•													UIL SANDS	waste (1000s)			
SKIN CANCER  15																			
TOTAL    MATER   1035   10320   105   240															OIL SPILLS				
INDUSTRY STRESS																spill (1000s)			
AGRICULTURE -10 -450 biological richness fishERIES 5 45							0000	.0020		0					BIODIVEDCITY	Decline in			
FISHERIES	(	<b>&gt;&gt;</b>			-10	-450									BIODIVERSITY	biological richn	ess		
FORESTRY 1 1 Water to treat (millions m²)																Volume of			
TOTAL -5 -404.25 (millions m <sup>-</sup> )	'														WATER	water to treat			
	- 1				-5											(millions m³)			
CARBON TOTAL 2,031 7,856 6,035 10,320 105 240							6,035	10,320	105	240									