

Supplementary file 1 – MHRI

Multi-hazard risk assessment at community level integrating local and scientific knowledge in the Hodh Chargui, Mauritania

Maurizio Tiepolo, Maurizio Bacci, Sarah Braccio, Stefano Bechis

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Acronyms : MD-Meteorological drought, HD-Hydrological drought, AD-Agricultural drought, HR-Heavy rainfall, TLU-Tropical Livestock unit, MHRI-Multi-hazard risk index

White boxes mean that the indicator is not measured for the cell in question.

Columns 3-13, 16-38, 41-50 present the normalized real values on a scale of 0-1.

Columns 14, 39 and 51 show the sum of the values of each indicator relative to the exposure, vulnerability and adaptive capacity normalized respectively on a 0-1 scale by assigning 1 to the maximum value observed in the "Sum" column (e.g.: Agoueininit Exposure MD = 2.71 = 1. Consequently, Bégou = 0.48 / 2.71 = 0.18).

Community	Hazard		Exposure															Vulnerability																				Adaptive capacity												Risk				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
	Hazard	Probability of occurrence	Irrigated crops	Resident TLU/Population	Population x well	Ponds	Earth dam	Population	Bare land rate	Fenced fields	Embankment	House in flood prone area	Wells in flood prone area	Sum	Normalized	Mobile signal	Mobile use	Embankment missing	Embankment without spillway/lock	Embankment leaking	Embankment unfenced	Creek banks unprotected	Wells flooded	Pasture distance in dry season	Electricity	Wells distance	Boreholes incomplete	Diesel water pump broken	Fountain irregular service	Well water flow	Well water quality	P growth	Well access for gardening	Absence of gardening	Market distance	Gardening Fencing	Cropping for self-consumption	Road interruption	Sum	Normalized	Herders, farmers radio programs	Extension herders services	Fodder stock	Extension agri services	Fountains	Borehole	Well with solar pump	Farmer association	Farmer radio access	Spillway	Sum	Normalized	Risk = H x (E+V-AC)	MHR= MD+HD+AD+HR risks
Agoueinit	MD	0.37	1	0.9	0.84									2.71	1.00									0.1														0.10	0.10		1	1									2.00	1.00	0.04	1.00
	HD	0.47				1	0.05	0.77						1.82	0.77									0.66	0	0	0	0	0	0	0.21							1.87	0.40				1	1							2.00	1.00	0.08	
	AD	0.74							1	1				2.00	1.00																		0	0	0.03	0	0	0.03	0.06	0.02				0			0	0.30			0.30	0.20	0.64	
	HR	0.24										1	0	0	1.00	0.33	0	0	0	1	1	1	1																3.00	0.67							0	0	0.00	0.00	0.24			
Begou	MD	0.11	0	0.4	0.07									0.48	0.18									0.75															0.08	0.08	1	0	0					0	0	0.00	0.00	0.24		
	HD	0.06				1	0.07	0						1.07	0.45										0	0.26	0	0	0	0	0	0.5	0.30						1.06	0.23				0	0					0.00	0.00	0.04		
	AD	0.55							1	0.5				1.50	0.75																		0	0	0.76	0	0	0.50	1.26	0.34			0			0	0			0.00	0.00	0.60		
	HR	0.29										1	0	1	2.00	1.00	0	0	0	0	0	0	0	1															1.00	0.22							0	0	0.00	0.00	0.35			
Boukhzama 1	MD	0.68	1	0.1	0.06									1.13	0.42									0.05															0.05	0.05	1	0	0								1.00	0.05	-0.02	0.74
	HD	0.47				0	0.5	0.47						0.97	0.41										0.33	0	0	0	0	0	0	0	0					0.33	0.07				0	1					1.00	0.00	-0.01			
	AD	0.87							1	0				1.00	0.50																			0.50	0	0.82	0.50	0	0.05	1.87	0.50			0.5		1	0.5			2.00	1.00	0		
	HR	0.41										1	1	0	3.00	1.00	1	1	0	0	0	0	1	1															4.00	0.89							0	0	0.00	0.00	0.77			
Drougal	MD	0	1	0	0.25									1.28	0.47									0.2														0.20	0.20	0	0	0								0.00	0.00	0.00	0.02	
	HD	0.06				0	0	0.46						0.46	0.19										1.00	0.01	0	0	0	0.66	0.3	0						1.97	0.42					0	0					0.00	0.00	0.04		
	AD	0.32							1	0				0.00	0.00																		1.00	0	0	1.00	1.00	0.05	3.05	0.82			0		0	1			1.00	0.5	0.10			
	HR	0.35										1	0	0	1.00	0.33	0	1	0	0	0	0	0	0															1.00	0.22							1	0	1.00	1.00	-0.16			
Elkenar	MD	0.11	1	0.2	0.08									1.26	0.47									0.08														0.08	0.08	1	1	0									2.00	1.00	-0.05	0.28
	HD	0.13				1	0	0.15						1.15	0.49										1.00	0.13	0	0	0	1.00	0	0						2.13	0.45					0	0					0.00	0.00	0.12		
	AD	0.45							1	0				1.00	0.50																		0	0	0.55	0	0	0	0.55	0.15				0	0			0.00	0.00	0.29				
	HR	0.18										1	0	0	1.00	0.33	0	0	1	0	0	0	0	0														1.00	0.22									1	0	1.00	1.00	-0.08		
Gnebett Ehel Heiba	MD	0	0	0.1	0.25									0.34	0.13									0.1														0.10	0.10	0	0	0									0.00	0.00	0.00	0.36
	HD	0.09				0	0	0.23						0.23	0.10									1.00	0.77	0	0	0	1.00	0	0							2.77	0.59				0	0					0.00	0.00	0.06			
	AD	0.32							1	0				1.00	0.50																		0	0	0.15	0	1.00	0.50	1.65	0.44			0		0	0			0.00	0.00	0.30			
	HR	0.35										1	0	0	1.00	0.33	0	1	0	0.5	0.5	1	0	0														3.00	0.67								1	0	1.00	1.00	0.00			
Goubya Elmesjid	MD	0.03	1	0	0.03									1.07	0.39									0.08														0.08	0.08	0	1	0								1.00	0.50	0.00	0.14	
	HD	0.09				1	0.25	0.91						2.16	0.91									0.66	0	1.00	0	0	0.5	0.3	0.45							2.91	0.62				0	0					0.00	0.00	0.08			
	AD	0.34							0.5	0				0.50	0.25																		1.00	0	0.73	0	1.00	1.00	3.73	1.00			1		0	1			2.00	1.00	0.09			
	HR	0.24										1	0	0	1.00	0.33	0	0	0	0.5	0.5	0.5	0	0														1.50	0.33							1	0	1.00	1.00	-0.12				

