Mediterranean basin characteristics: environmental and social inequality

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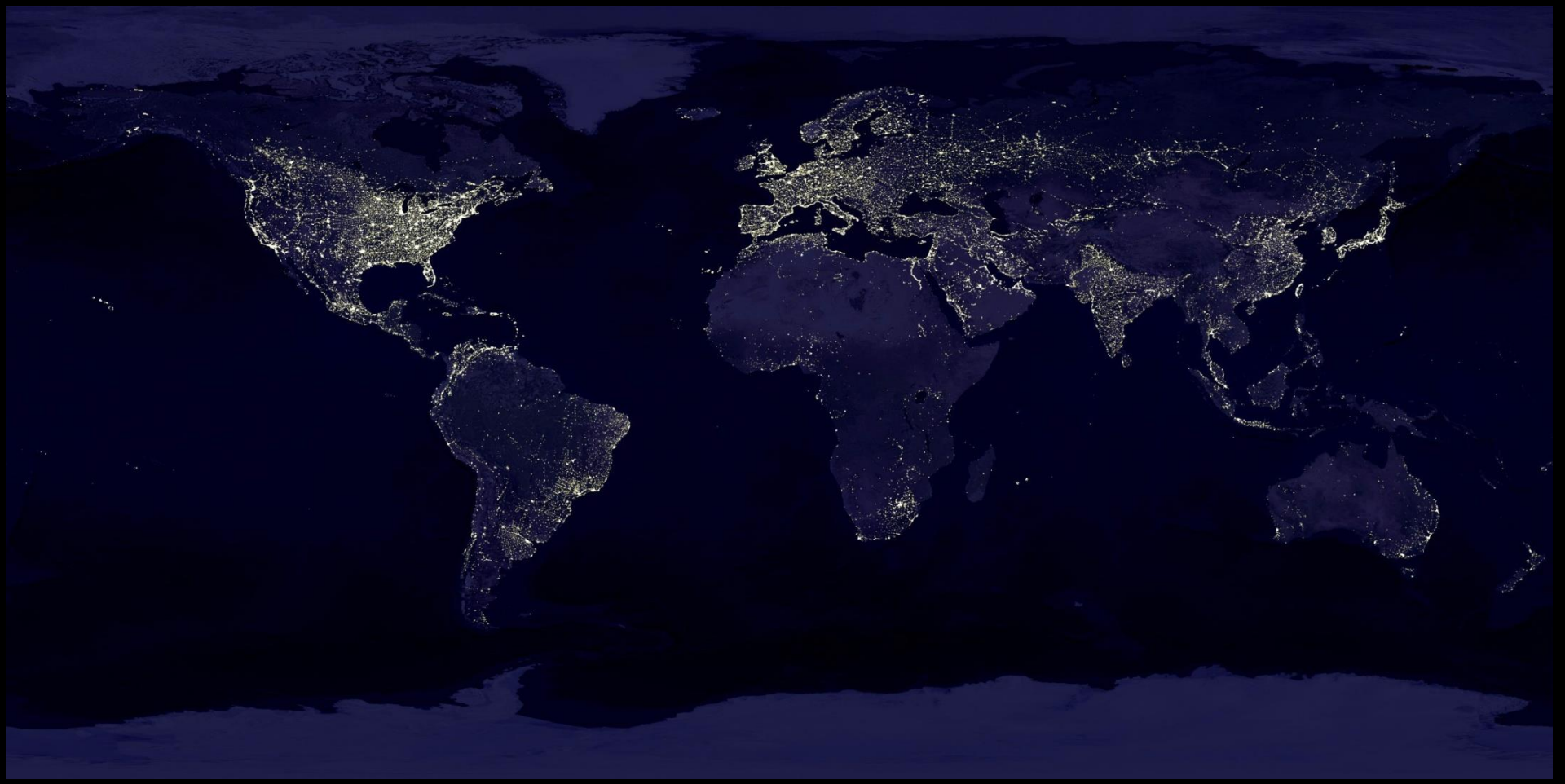


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Exercise 1

Linking climate change adaptation to development priorities in the case studies (posters)

Source of data: FAO 2018	World	Medit.	% of world
Land area (x million km2)		10	8
Population Total (x million)		510	7
GDP 2016 (billion US $)		9,088	15
Agr trade 2016 (billion $)		228	20
Total renewable water resources (km3/year)	54,977	1,169	2
Groundwater produced internally (km3/year)	9,943	299	3
Desalinated water (million m3/year)	3,058	887	29
Reused waste-water (million m3/year)	1,507	970	64
Irrigation 2016 (1000 ha)		32,493	10

Hydrological context

Transboundary Groundwater

	Rainfall (mm/yr)	Internal renewable water res. (km3/yr)	Renewable water res. (km3/yr)	Internal groundwater (km3/yr)
Algeria	89	13.90	14.32	1.70
Egypt	51	1.80	58.30	1.30
Libya	56	0.60	0.60	0.50
Morocco	346	29.00	29.00	10.00
Tunisia	313	4.15	4.56	1.45
France	867	178.50	203.70	100.00
Greece	652	58.00	74.25	10.30
Italy	832	182.50	191.30	43.00
Portugal	855	38.00	68.70	4.00
Spain	636	111.20	111.50	29.90

Scarcity (nat, soc)
Regulated water

Social context

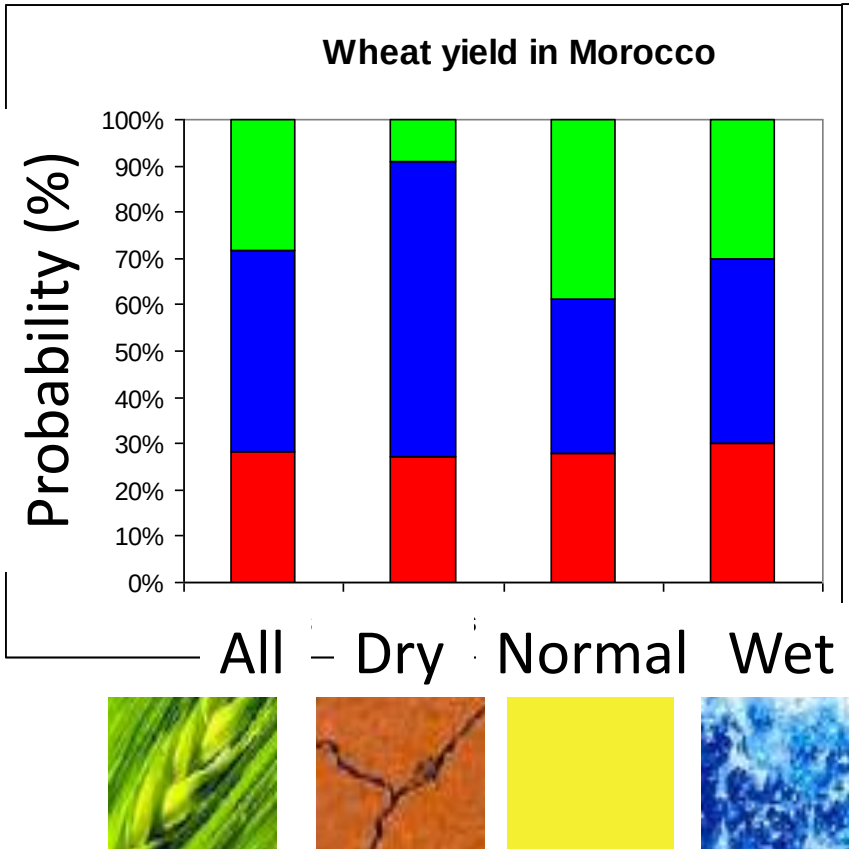
	Total area (km2) [Population (million)]	Total water use (km3/yr)	Total water use (% Renew-able)	Potential total renewable water res/person (m3/person/year)
Algeria	2,381,740 [30]	5.74	40	473
Egypt	1,001,450 [68]	61.70	106	859
Libya	1,759,540 [5]	5.73	954	113
Morocco	446,550 [30]	12.23	42	971
Tunisia	163,610 [9]	2.58	57	482
France	551,500 [59]	35.63	17	3,439
Greece	131,960 [11]	7.99	11	6,998
Italy	301,340 [58]	43.04	22	3,325
Portugal	91,980 [10]	7.40	11	6,859
Spain	505,990 [40]	35.90	32	2,794

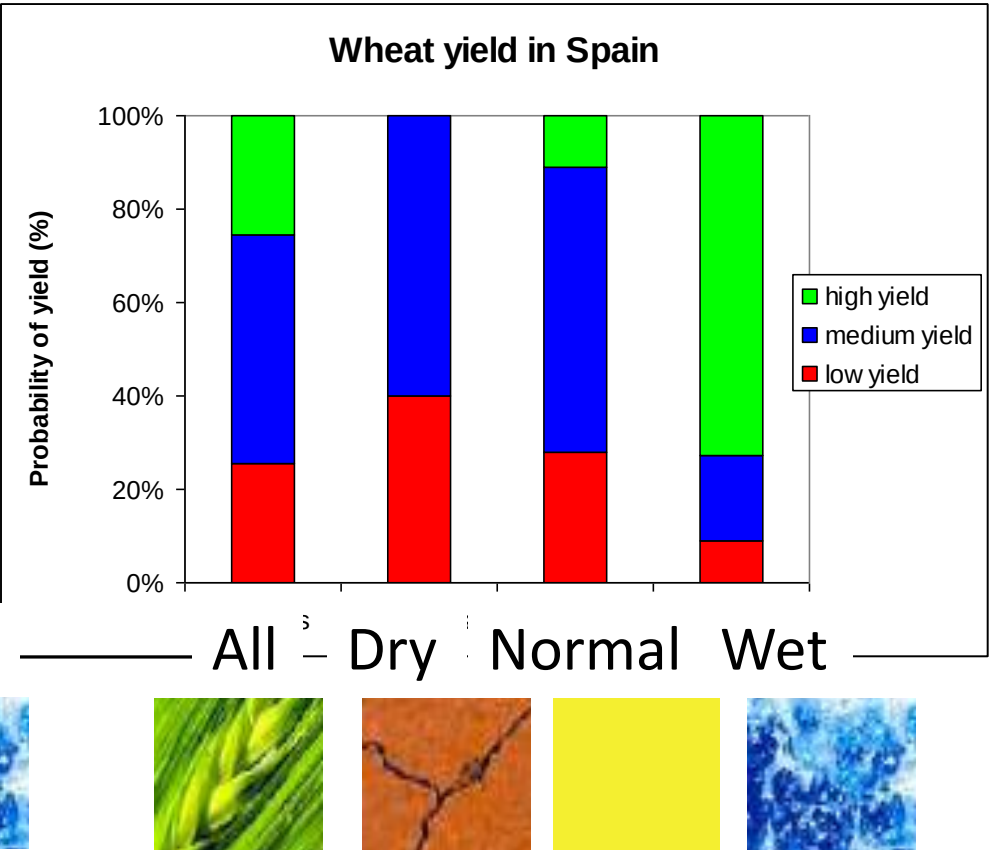
Drought planning

	Cyprus	Greece	Italy	Morocco	Tunisia	Spain
Institutional relations	low	low	low	low	high	med
Public part.	low	med	high	low	low	high
Basin management	no	yes	yes	partial	partial	yes
Monitoring	partial	partial	yes/bas	yes/Nat	yes/Nat	yes/bas
Drought in Water Law	no	yes	yes	yes	yes	yes
Contingency plan drought	no	partial	yes/reg	partial	yes/Nat	yes/bas
Groundwater ownership	pub/priv	pub	pub	pub/priv	pub	pub/priv

Source of data: Iglesias et al 2007

Complexity: need to understand local vulnerabilities





Low yield (bottom 25%)

Medium yield (between 25 and 75%)

High yield (top 25%)

Source: Iglesias and Moneo, 2004

- Climate change increases inequalities

- Climate change is a challenge to SDGs and environmental justice