BUILDING QUANTITATIVE SCENARIOS OF IRRIGATION UNDER CLIMATIC AND ANTHROPOGENIC CHANGES IN THE MEDITERRANEAN AREA: APPLICATION TO MOROCCO
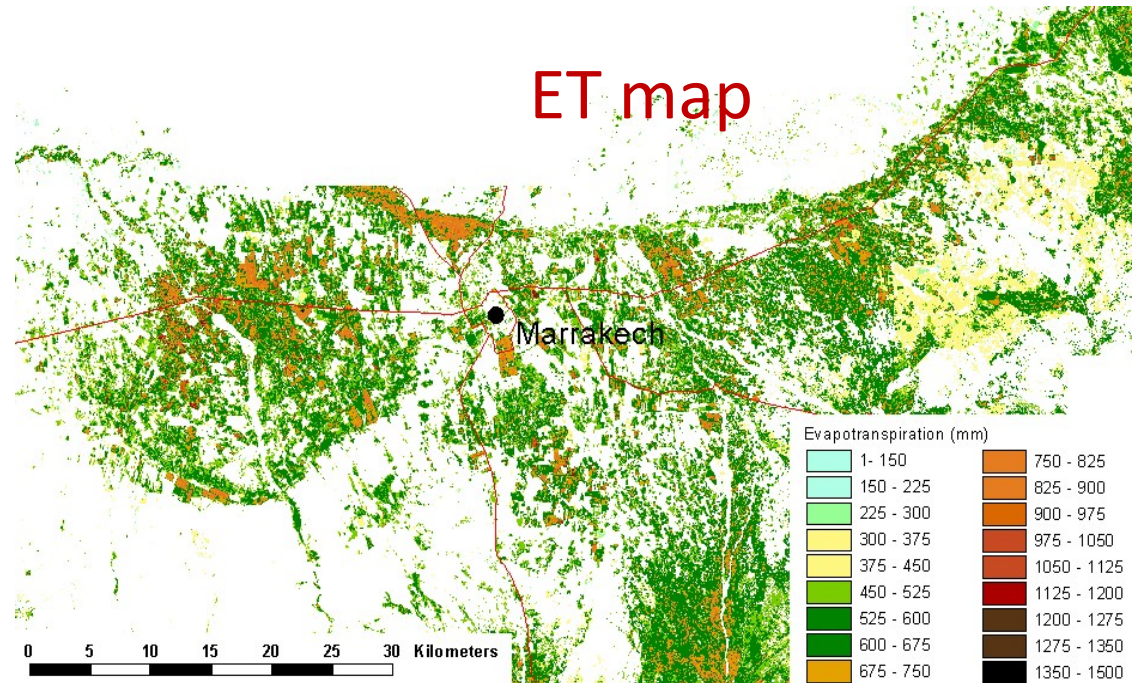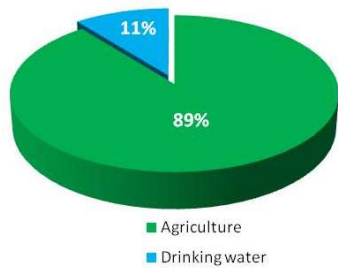
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STUDY AREA :
THE HAOUZ-TENSIFT PLAIN

Morocco

ET map

Evapotranspiration (mm)

1- 150	750 - 825
150 - 225	825 - 900
225 - 300	900 - 975
300 - 375	975 - 1050
375 - 450	1050 - 1125
450 - 525	1125 - 1200
525 - 600	1200 - 1275
600 - 675	1275 - 1350
675 - 750	1350 - 1500

0 5 10 15 20 25 30 Kilometers

11%

89%

■ Agriculture
■ Drinking water

IWR (irrigation Water Requirement) constitutes about 90 %
of the water consumption
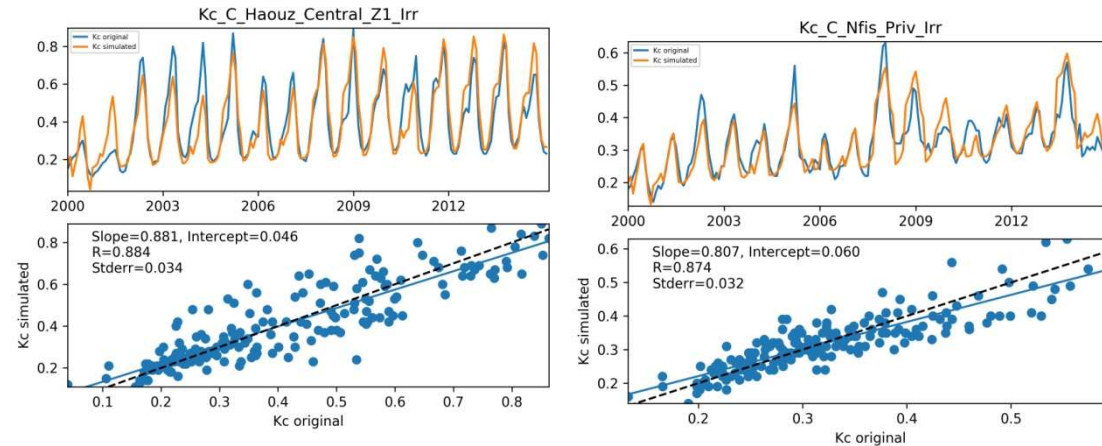
Méthod to estimate the future IWR until 2050?

$$IWR = \sum_{i=1}^{n}(ET_{c_i} - P_e) * Area_i = \sum_{i=1}^{n}\left[(K_{c_i} * ET_0) - P_e\right] * Area_i$$

Projection of a regression model of the observed evolution of K_c
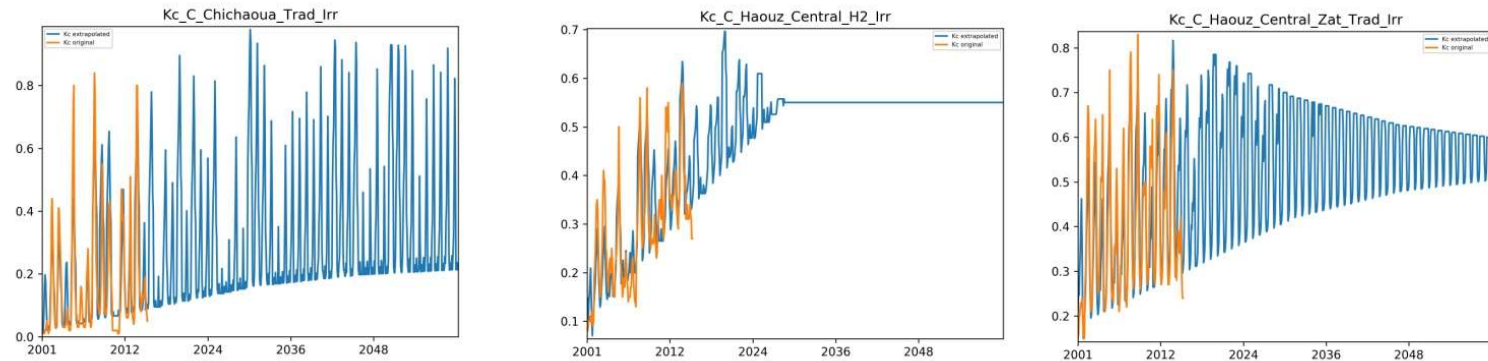
Climate change scenarios RCP 4.5 & RCP 8.5

Some results

Original Kc
vs Simulated
Kc

Examples of
projection of
Kc
RCP4.5

Some conclusions

The examination of irrigation water demand until 2050 suggests that the difference between RCP 4.5 & RCP 8.5 climate scenarios is very small (<2%)

Possibility of easily integrating the present simulated projections into other irrigation management scenarios