

Irrigation Water Demand Increase Associated with projected Climate in the Upper Athi Basin

Major Irrigation water requirement occurs in the drier season of January -March, the baseline and three future RCPs were considered in the water resources simulation carried out (Annex 31). Irrigation acreage forecast figures were available only for near future period of 2011-2040 and the figures provided are for that period.

Figure one shows the season potential evapotranspiration (PET) for the baseline (1981-2010) and for the 2011-2040 for the three emission pathway projections. This is the average over the 30-year period.

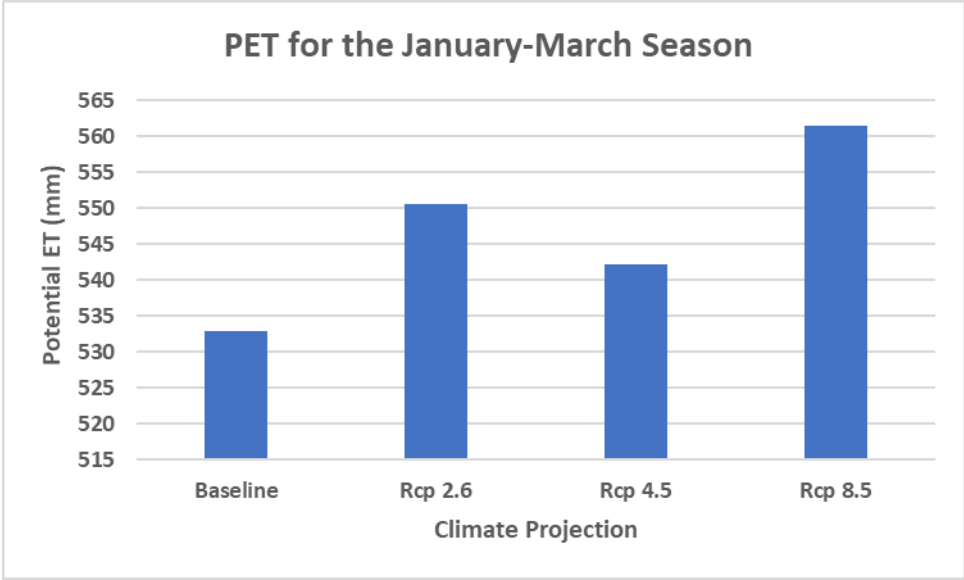


Figure 1: Mean Seasonal PET for January-March Period

Table one indicates the calculated net irrigation water requirement based on current and projected PET and irrigation area. In both cases the increase in irrigation demand is due to projected increase in PET. The mean increase for the January-March season is between 0.38 to 2.0 million cubic meters (MCM)

Table 1: Irrigation Water Requirement and Increase for the Upper Athi

	Irrigation Water Requirement (MCM)	Increase compared with baseline (MCM)	Irrigation Water Requirement (MCM)	Increase compared with baseline (MCM)
Climate Scenario	Using baseline Acreage		Using Forecasted Acreage	
Baseline	21.52		37.16	
Rcp 2.6	22.24	0.72	38.40	1.24
Rcp 4.5	21.90	0.38	37.81	0.65
Rcp 8.5	22.68	1.16	39.16	2.00