Weather modification impact on reference evapotranspiration, soil salinity and desertification in arid regions: a case study

Abderrahman, W.A., Bader, T.A., Kahn, A.U., Ajward, M.H.

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Abstract: An increase in temperature of 1°C will result in increasing the ETo values by 1.6-4.2%, 0.6-4.0%, and 1.0-3.5% in the coastal, oasis and central areas, respectively. An increase in temperature of 5°C will result in increasing ETo values by 9.0-17.7%, 7.9-15.6%, and 7.1-13.7% in the coastal, oasis and central areas, respectively. If the increase in demands for irrigation water are not satisfied, then the yield will be reduced according to the yield response factor of each crop. A 10% water shortage will cause a yield reduction of 3.0%, 10.5% and 6.0-10.0% in alfalfa, tomato and date palm, respectively. The same water shortage will increase soil salinity by about 1.23 to 17.68 times the original salinity level. This will cause a further decrease in crop yield. -from Authors