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To: Agriculture Water Use Efficiency
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Notes to the example method 2, energy balance, states “provide guidance on how to use or delete method 2”. Field scale use is made possible by the 30 meter resolution of the freely available imagery. The end product of image processing is a set of estimates of the fraction of reference ET (ET_rF) pixel by pixel across the area of interest. ET_rF is the crop coefficient, the K_c of CIMIS, of the 30 m. square portion of a field.

ET_rF of each pixel may be multiplied by reference ET from CIMIS to obtain crop ET (ET_c) for the 24 hour period on a pixel by pixel basis. This is the same as multiplying CIMIS reference ET by a crop coefficient, only in this case the crop coefficient is highly localized. Therefore, this is a cost effective method to produce local K_c’s. An estimate of ET_c for a field is obtained by summing the ET_c values of the pixels contained by the field. (Pixel values for various dimensions may be recalculated and may be clipped in a GIS to obtain any desired accuracy of fit.) Similarly, an average of the ET_rF values of the pixels produces an average K_c for the field. Seasonal interpolation of the ET_rF values produces seasonal K_c curves for the field. Averages and deviations of K_c values may be calculated for any similar state and crop, plasticulture bell peppers or mature almond orchards for example.

It is suggested that annual publication of the K_c curves and ET_c’s, with deviations, for crops in the various districts would be a meaningful contribution.

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