

## Introduction

To optimize water use efficiency of rice with less environmental impacts, productive (Evaporation) water use of crop production needs to be partitioned. We quantified the contribution of transpiration to total ecosystem evapotranspiration by a stable water isotope partitioning approach and FAO 56 Penmann ET modeling approach.



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$$R_E = \frac{1}{\alpha_k \alpha^+ (1-h)} (R_e - \alpha^+ h R_a)$$



Bayceer

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# FAO 56 PM approach Reference evapotranspiration

$$\frac{A(R_n - G) + \gamma \frac{900}{T + 273} u_2(e_s - e_a)}{\Delta + \gamma (1 + 0.34u_2)}$$
(Allen, 96.)

- $K_{cb} = 1 \left[\frac{NDVI_{\text{max}} NDVI}{NDVI_{\text{max}} NDVI_{\text{min}}}\right]^{\overline{k^*}}$ 
  - (Choudhury, et al., 94.)



Figure 6: UAV and high resolution NDVI

### Crop evapotranspiration

ETcrop = (Kcb + Ke).ETo

(Allen, 96.)



Figure 7: Measured against modled water fluxes.