

Supplementary Materials:

Figure S1. Importance of the variables for the approach-1 algorithm

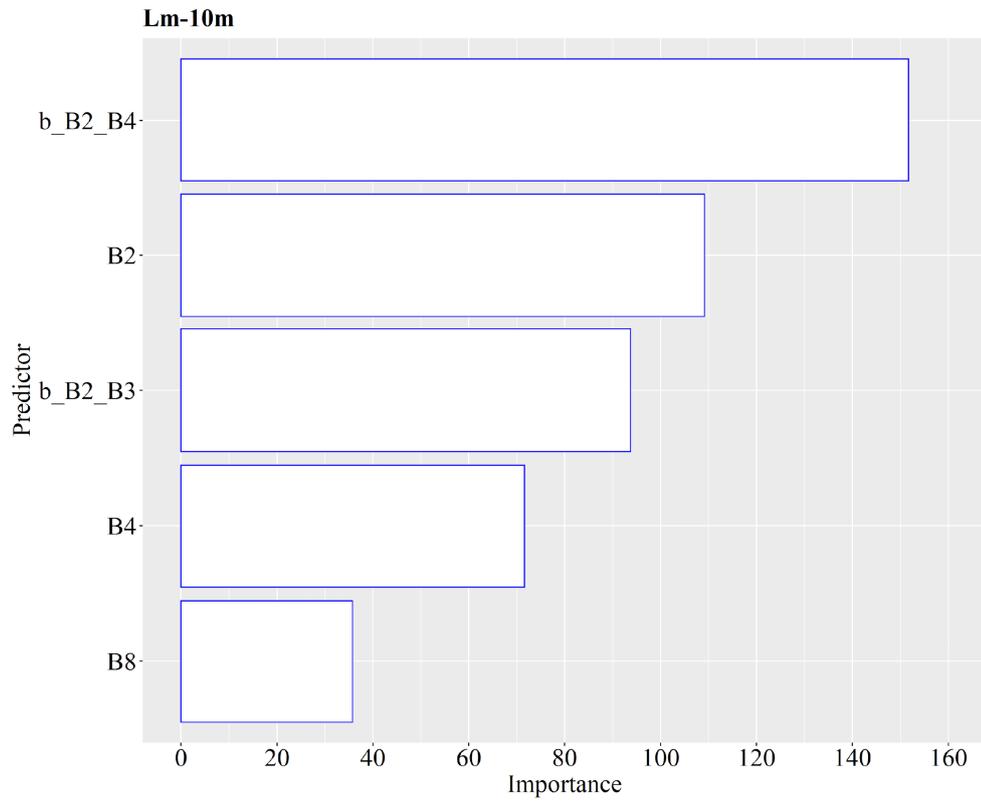


Figure S2. Importance of the variables for the approach-1 Cubist algorithm

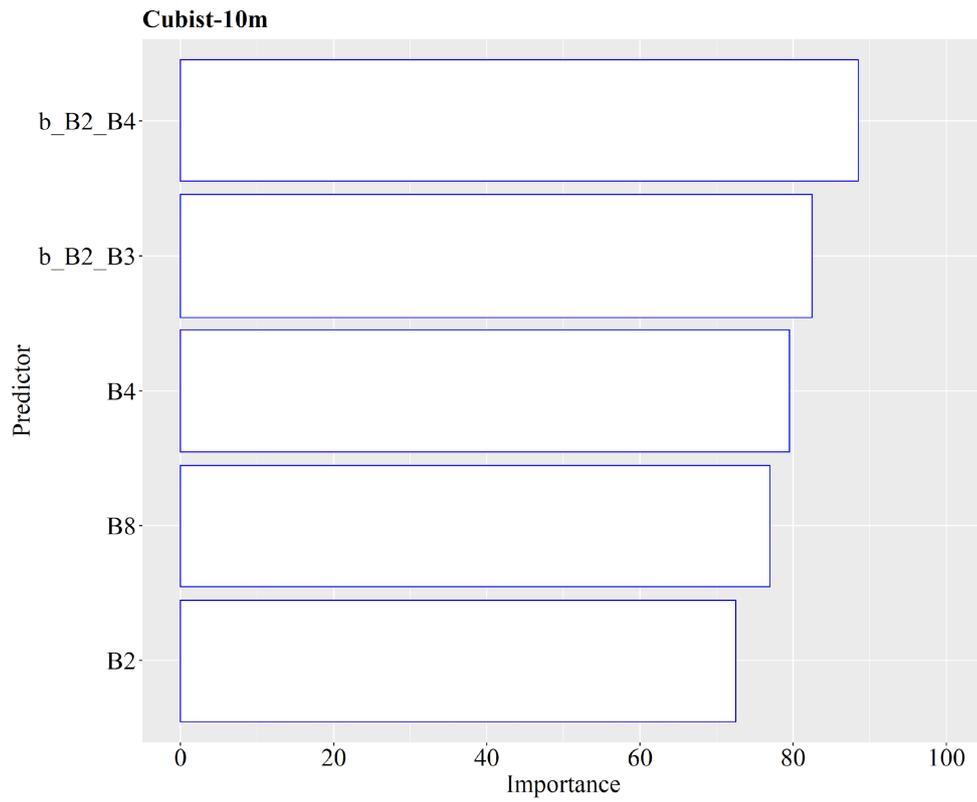


Figure S3. Importance of the variables for the approach-1 XgbLinear algorithm

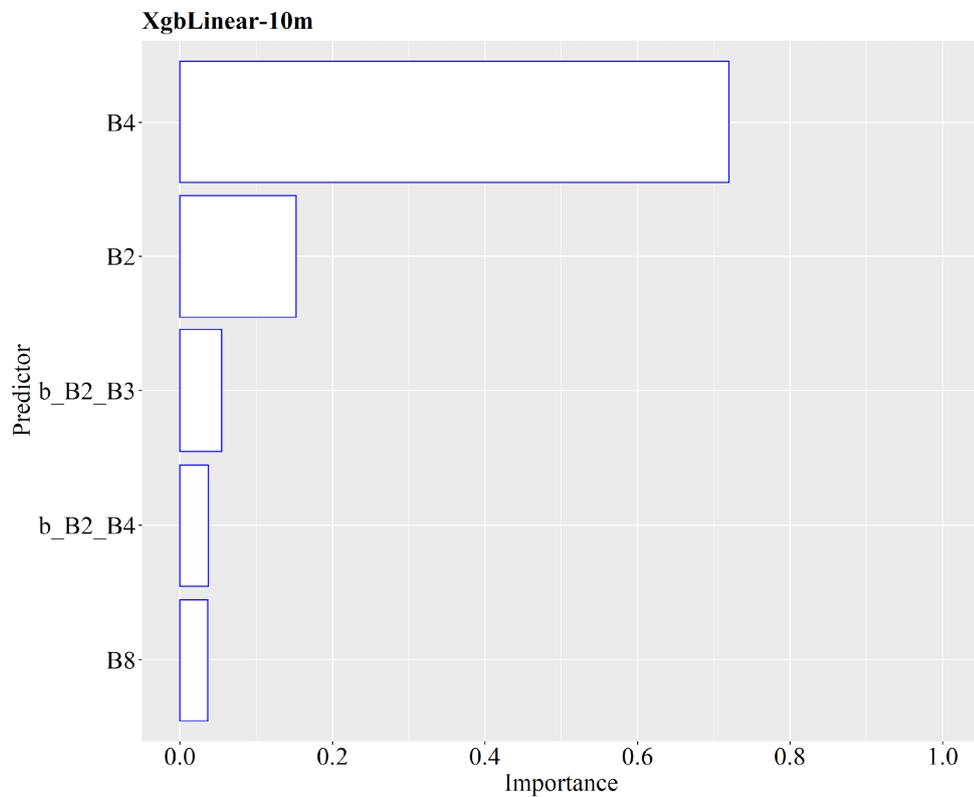


Figure S4. Importance of the variables for the approach-1 XgbTree algorithm

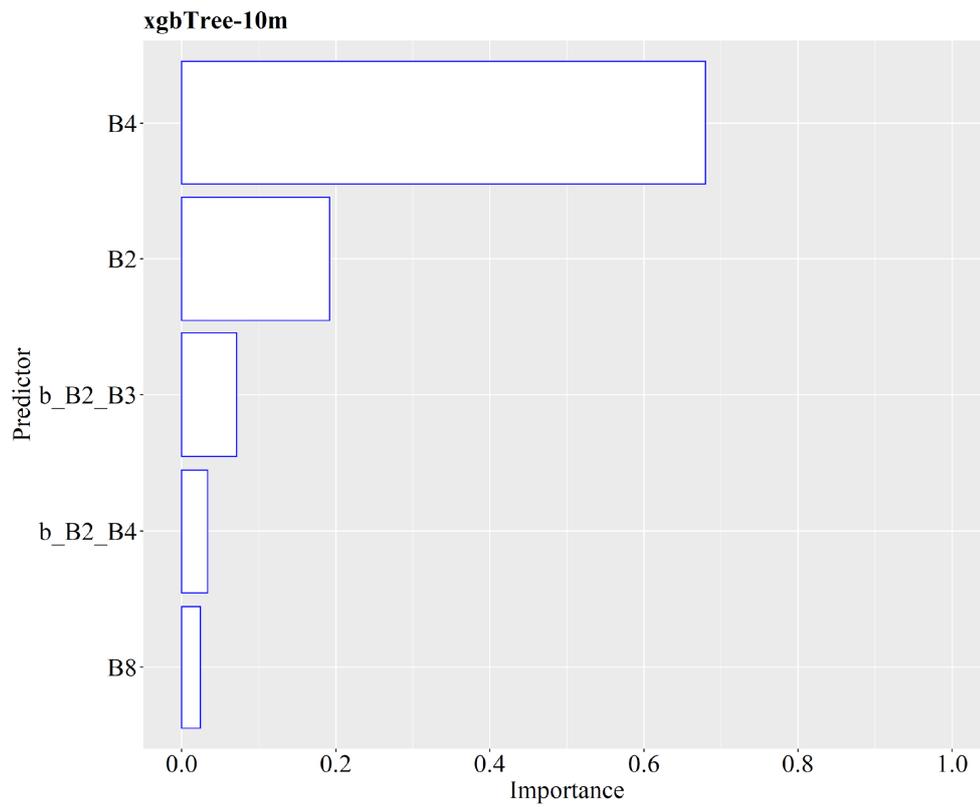


Figure S5. Importance of the variables for the approach-2 LM algorithm

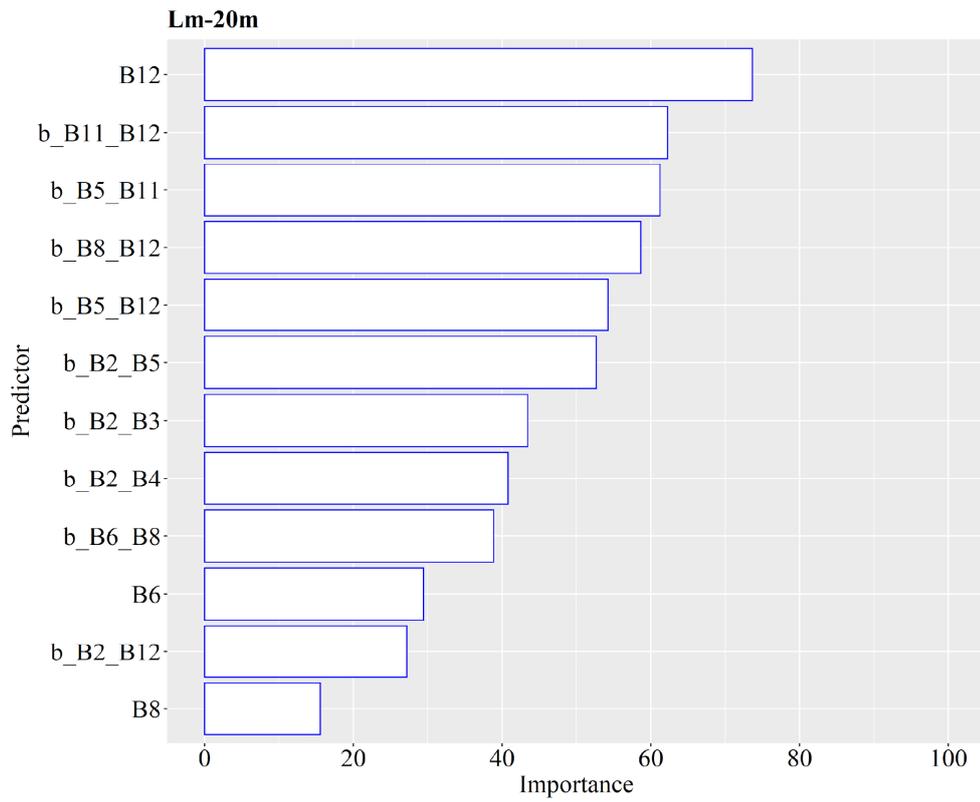


Figure S6. Importance of the variables for the approach-2 Cubist algorithm

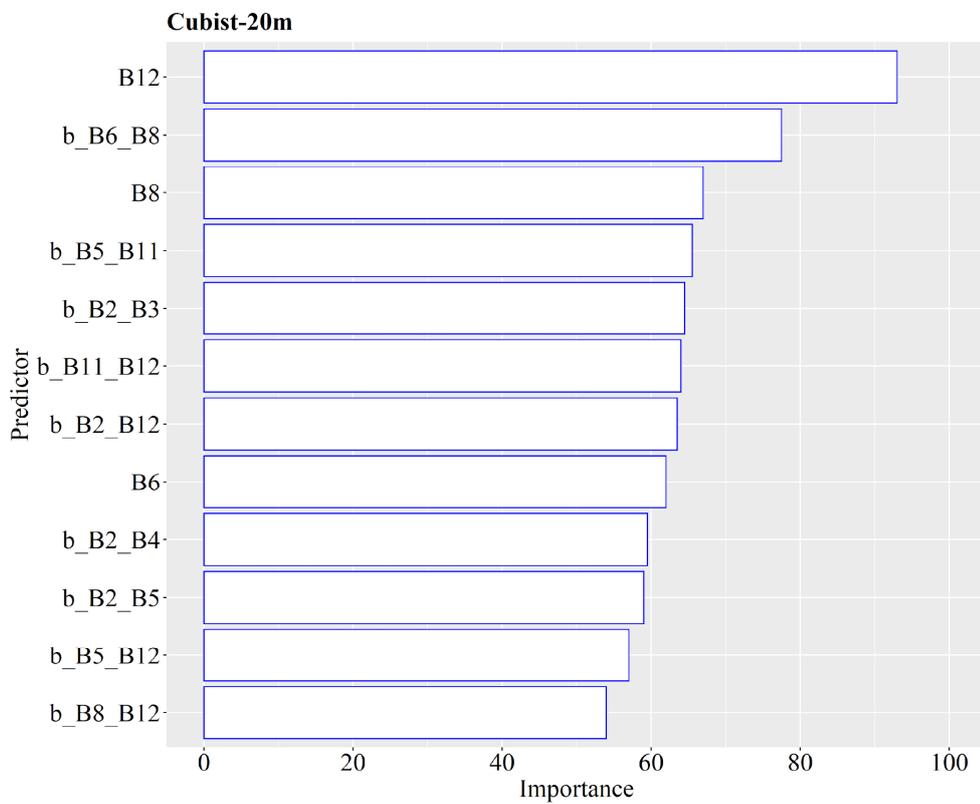


Figure S7. Importance of the variables for the approach-2 XgbLinear algorithm

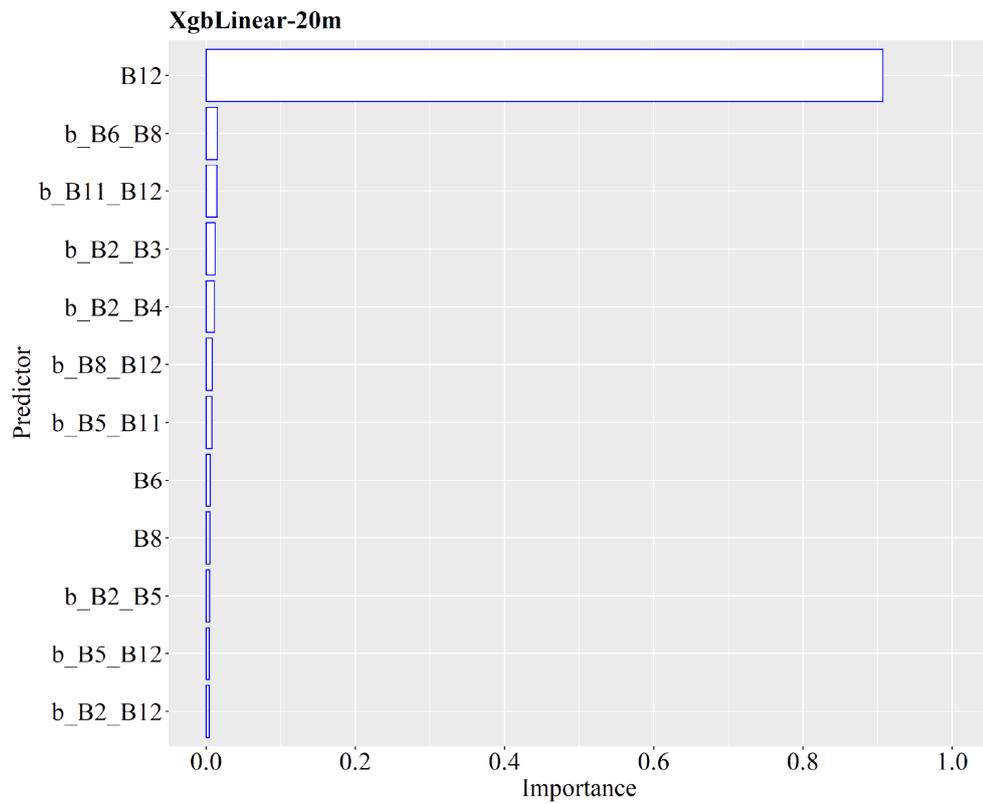


Figure S8. Importance of the variables for the approach-2 XgbTree algorithm

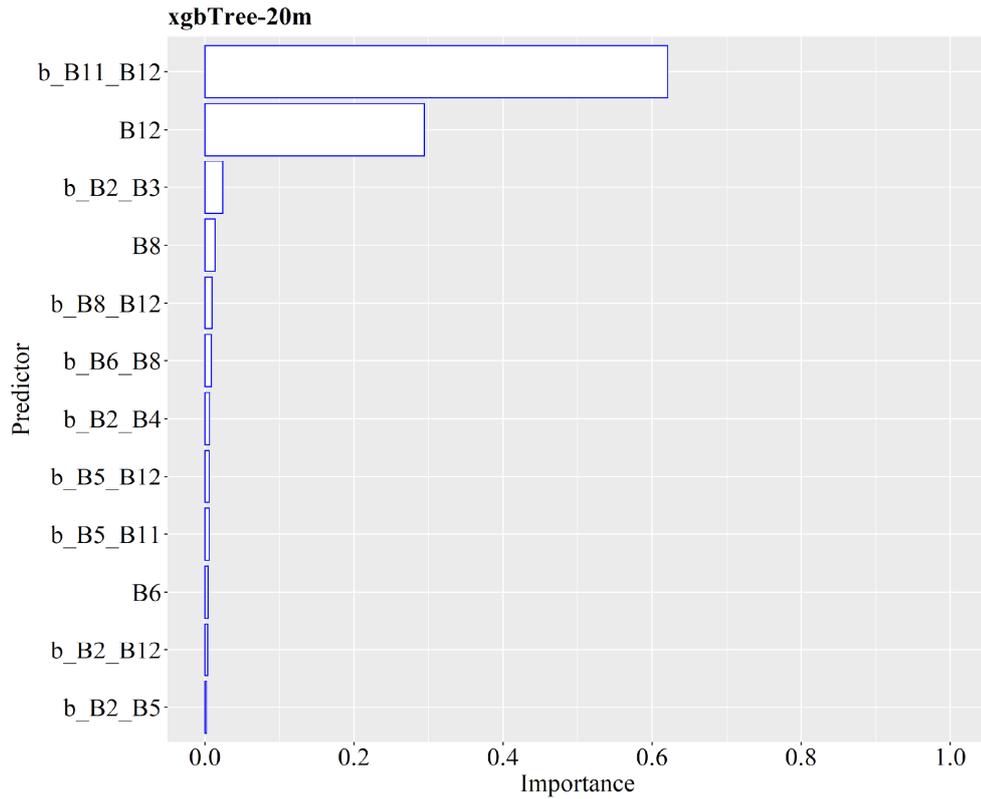


Table S1: List of abbreviations

| Abbreviations |
|--|
| ET _a = Actual Evapotranspiration |
| ET _{ints} = Instantaneous Evapotranspiration |
| ET _o = Reference Potential Evapotranspiration of the Grass |
| ET _r = Reference Potential Evapotranspiration of the Afalfa |
| ET _{rF} = Evapotranspiration Fraction |
| METRIC = Mapping Evapotranspiration at High Resolution with Internalized Calibration |
| ML = Machine Learning |
| MSI = MultiSpectral Instrument |
| OLI = Operational Land Imager |
| R ² = Coefficient of Determination |
| RMSE = Root Mean Squared Error |
| MAE = Mean Absolute Error |
| MBE = Mean Bias Error |
| SAFER = Simple Algorithm for Evapotranspiration Retrieving |
| SEBAL = Surface Energy Balance Algorithm for Land |
| TIRS = Thermal Infrared Sensor |
| P = Precipitation |
| T _{mean} = Mean Air Temperature |
| T _{max} = Maximum Air Temperature |
| T _{min} = Minimum Air Temperature |
| μm = Micrometer |
| m = Meter |
| K _c = Crop Coefficient |
| LE = Latent Energy |
| ρ _w = Density of Water |
| λ = Latent Heat of Vaporization |

Ts = Surface Temperature
Rn = Net Radiation
G = Sensible Flux of Heat Transferred to the Ground
H = Sensible Flux of Heat Convected to Air
Rs↓ = Input of Shortwave Radiation
 α = Surface Albedo
RL↓ = Input of Long Waves
RL↑ = Output of Long Waves
 ϵ_0 = Surface Thermal Emissivity
LAI = Leaf Area Index
 ρ_{air} = Air Density
Cp = Specific Heat of Air at Constant Pressure
dT = Temperature Difference Between Two Heights
 r_{ah} = Aerodynamic Drag
 ρ_B = Reflectance of Blue
 ρ_G = Reflectance of Green
 ρ_R = Reflectance of Red
 ρ_{NIR} = Reflectance of Near-Infrared
 ρ_{Re} = Reflectance of Red Edge
 ρ_{SWIR} = Reflectance of Shortwave Infrared
NRPB = Normalized Ratio Procedure Between Bands
LM = Linear Regression
Xgblinear = eXtreme Gradient Boosting-linear method
XgbTree = eXtreme Gradient Boosting-tree method
DAE = Days After Emergency
FAO = Food and Agriculture Organization
