## Inputs (from farmer)
- Farm coordinates
- Crop type
- Planting date
- Total growing days

## Data Acquisition
- 4 stages of crop growth dates
- Filtered data (SM, RZSM, ET, PET, and P) from global data for the farm with a reasonable radius (radius is calculated based on farm's size and data resolution)

## Processing
- Farm record ($\Delta$SM, $\Delta$RZSM, 8 d ET, 8 d PET, and 8 d P) [2010-2020]
- 8 d P, $\Delta$SM, and $\Delta$RZSM
- $\Delta$SM and $\Delta$RZSM conversion to depth based on the date. For past years all depth is 500 mm. Observed NI with and without $\Delta$SM
- RF to predict future $\Delta$SM, $\Delta$RZSM, ET, and PET

## Outputs
- Locate farm
- Show 4 stages of crop growth dates
- Calculate NI
- Theoretical daily breakdown of NI
- 3-week timeseries of P, ET, and PET