

## Field Report

This report consists of satellite results of one of your fields. Automated satellite Monitoring Service allows you to monitor multiple farming fields using latest satellite imagery.



Report Generation Date:  
2022-10-31



Satellite imagery capture Date:  
2022-10-31

## Field Details



Field Address:  
undefined



Field Area:  
0 sq m (approx.)



Field Location:  
Latitude:8.  
Longitude:6.

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# Understand the data for better farming

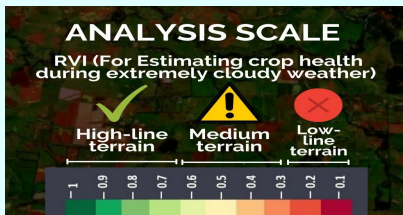
For cloudy weather use RVI

(Indicates cloudy in RGB/ETCI image)

ETCI



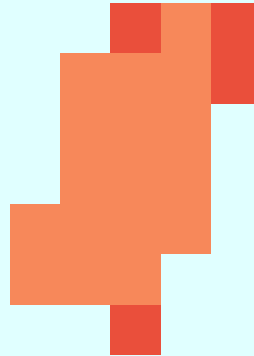
RVI



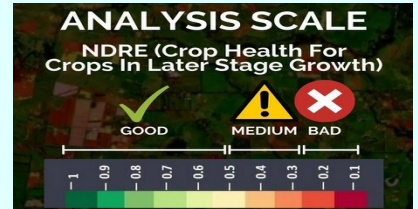
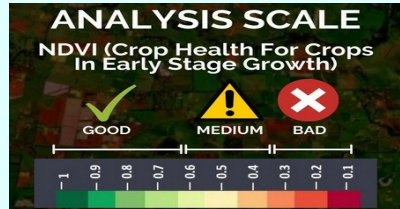
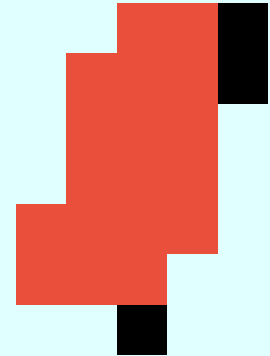
If your vegetation is at early growth stage

If your vegetation is at later growth stage

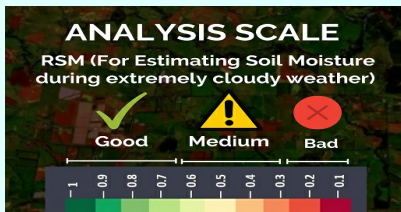
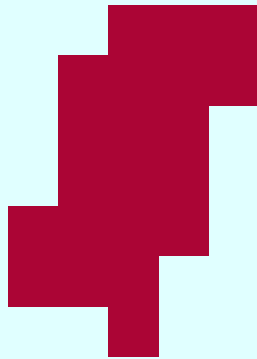
NDVI



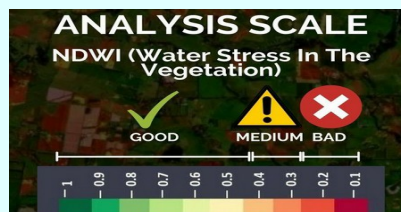
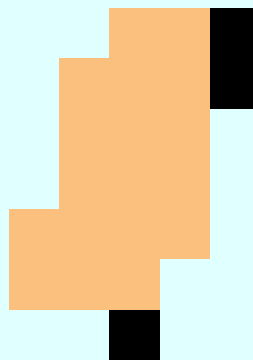
NDRE



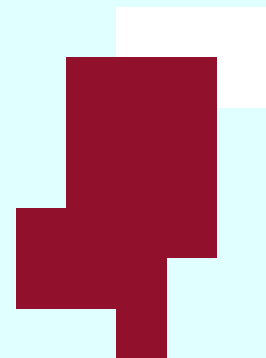
RSM



NDWI Image (For Irrigation)



Basis Analysis (For Crop Health & Irrigation)



If you are growing crops at a location on the field, then:

Your crop has good health and good water stress at these locations.	Visit these locations to check for water stress
Visit these locations to check for crop health	Visit these locations to check for water stress with priority
Visit these locations to check for crop health with priority	No Information Available Due to Cloud cover on these locations
Visit these locations for both crop health and water stress	

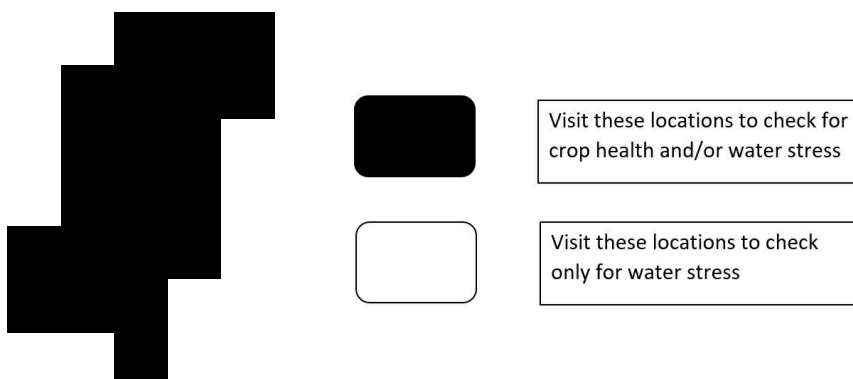


## RGB Image

True color image is the unaltered raw satellite image retrieved for your area, whereas Enhanced true color image is the processed satellite image of your area with enhanced land features. Using these two images you can see any observable land changes around your field which may be crucial for your farming practices.

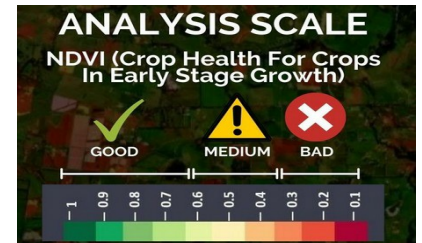


## Basic Analysis for Colourblind Visualization (Crop Health + Irrigation)



## RVI (Radar Vegetation Index)

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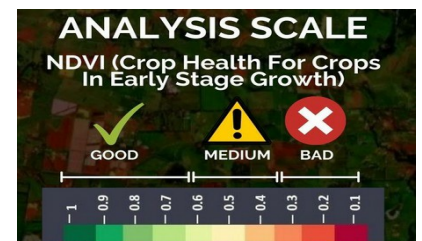


### Scientific Background

Radar Vegetation Index generally ranges between 0 and 1 and is a measure of the randomness of the scattering. RVI is near zero for a smooth bare surface and increases as a crop grows (up to a point in the growth cycle). Use this index for crop health estimation during cloudy weather."

## RSM (Radar Soil Moisture)

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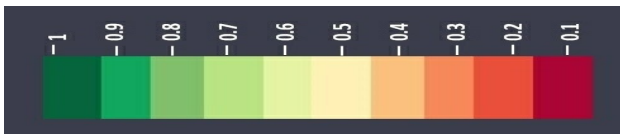
### Scientific Background

soil moisture measures status of plant health based on how plants reflect light at certain frequencies. Though we cannot perceive it with our eyes, everything around us (including plants) reflects wavelengths of light in visible and non-visible spectrum. Taking into account of certain wavelength is reflected, we can assess the current status of plants. If a plant is healthy, it will have large amount of chlorophyll on its leaves and will absorb good amount of visible light from 0.4 to 0.7 microns and reflect quite less of it and vice-versa, we take into account this basic principle in identifying crop health status of agricultural land.

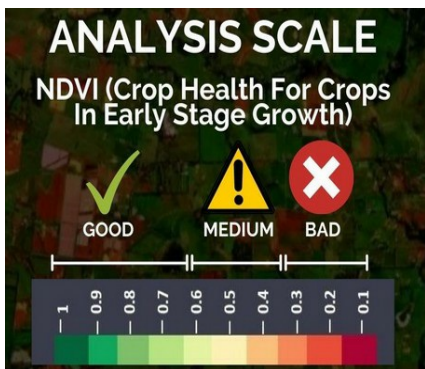
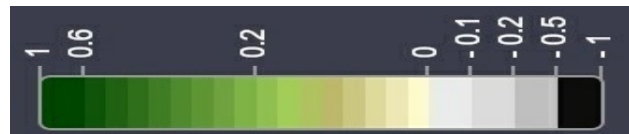
## NDVI (Normalized Difference Vegetation Index)

NDVI image provides you a colour map of the vegetation of your farming field and nearby areas. The areas shown in red are the regions where the crop growth may not be normal. You should refer to these images when your crop is in early stage of growth.

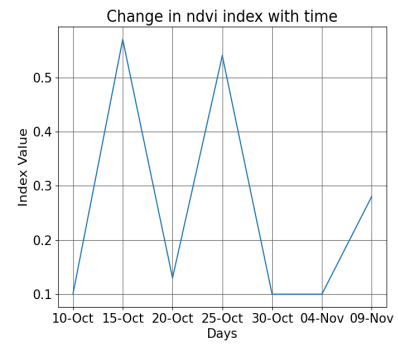
Use When vegetation is of good height"



Use When vegetation is of small height



Field Area in Different Health Zones	
<span style="color: darkgreen;">■</span>	NDVI: 0.9 to 1.0 -> 0 sq. m.
<span style="color: green;">■</span>	NDVI: 0.8 to 0.9 -> 0 sq. m.
<span style="color: lightgreen;">■</span>	NDVI: 0.7 to 0.8 -> 0 sq. m.
<span style="color: yellowgreen;">■</span>	NDVI: 0.6 to 0.7 -> 0 sq. m.
<span style="color: yellow;">■</span>	NDVI: 0.5 to 0.6 -> 0 sq. m.
<span style="color: orange;">■</span>	NDVI: 0.4 to 0.5 -> 0 sq. m.
<span style="color: orange;">■</span>	NDVI: 0.3 to 0.4 -> 1700 sq. m.
<span style="color: red;">■</span>	NDVI: 0.1 to 0.2 -> 400 sq. m.
<span style="color: darkred;">■</span>	NDVI: -1 to 0.1 -> 0 sq. m.



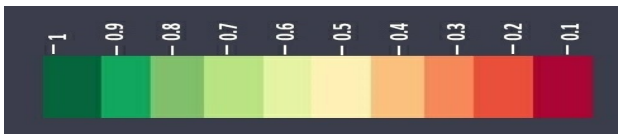
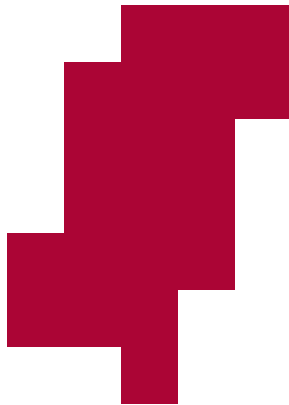
## Scientific Background

NDVI measures status of plant health based on how plants reflect light at certain frequencies. Though we cannot perceive it with our eyes, everything around us (including plants) reflects wavelengths of light in visible and non-visible spectrum. Taking into account of certain wavelength is reflected, we can assess the current status of plants. If a plant is healthy, it will have large amount of chlorophyll on its leaves and will absorb good amount of visible light from 0.4 to 0.7 microns and reflect quite less of it and vice-versa, we take into account this basic principle in identifying crop health status of agricultural land.

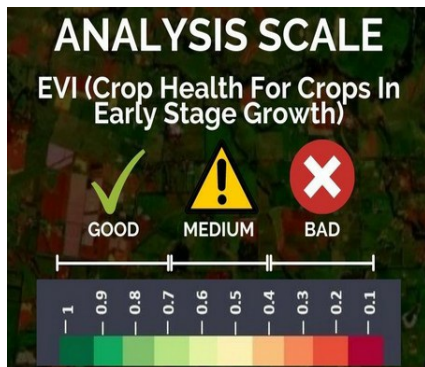
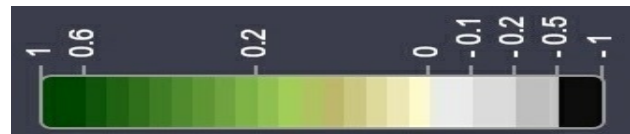
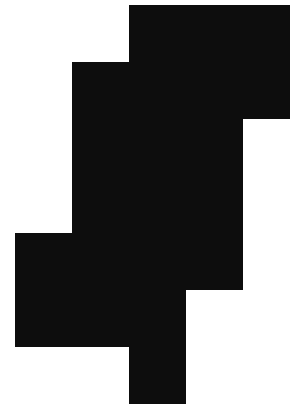
# EVI (Enhanced Vegetation Index)

EVI image provides you a colour map of the vegetation of your farming field and nearby areas. The areas shown in red are the regions where the crop growth may not be normal. You should refer to these images when your crop is in later stage of growth and your crop canopy is dense.

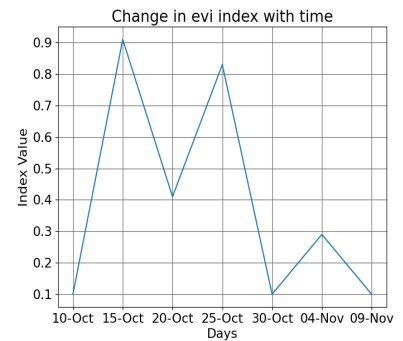
Use When vegetation is of good height"



Use When vegetation is of small height



Field Area in Different Health Zones	
Dark Green	EVI: 0.9 to 1.0 -> 0 sq. m.
Green	EVI: 0.8 to 0.9 -> 0 sq. m.
Light Green	EVI: 0.7 to 0.8 -> 0 sq. m.
Yellow-Green	EVI: 0.6 to 0.7 -> 0 sq. m.
Yellow	EVI: 0.5 to 0.6 -> 0 sq. m.
Orange-Yellow	EVI: 0.4 to 0.5 -> 0 sq. m.
Orange	EVI: 0.3 to 0.4 -> 0 sq. m.
Red-Orange	EVI: 0.2 to 0.3 -> 0 sq. m.
Red	EVI: 0.1 to 0.2 -> 0 sq. m.
Dark Red	EVI: -1 to 0.1 -> 2100 sq. m.



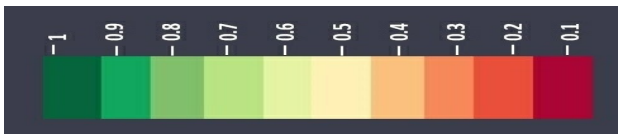
## Scientific Background

The Enhanced Vegetation Index (EVI) uses additional wavelengths of light to correct for the inaccuracies of NDVI. Variations in solar incidence angle, atmospheric conditions like distortions in the reflected light caused by the particles in the air, and signals from the ground cover below the vegetation are corrected for using EVI.

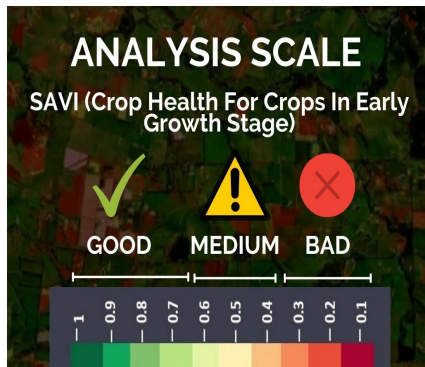
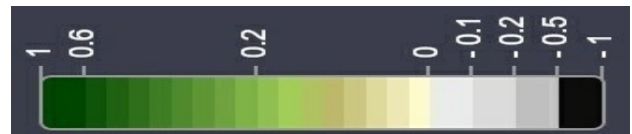
## SAVI (Soil Adjusted Vegetation Index)

SAVI image provides you a colour map of the vegetation of your farming field and nearby areas. The areas shown in red are the regions where the crop growth may not be normal. You should refer to these images when your crop is in the later stage of growth and your crop canopy is dense.

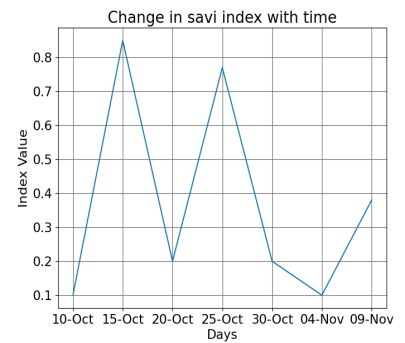
Use When vegetation is of good height"



Use When vegetation is of small height"



Field Area in Different Health Zones	
Dark Green	SAVI: 0.9 to 1.0 -> 0 sq. m.
Green	SAVI: 0.8 to 0.9 -> 0 sq. m.
Light Green	SAVI: 0.7 to 0.8 -> 0 sq. m.
Yellow-Green	SAVI: 0.6 to 0.7 -> 0 sq. m.
Yellow	SAVI: 0.5 to 0.6 -> 0 sq. m.
Light Orange	SAVI: 0.4 to 0.5 -> 0 sq. m.
Orange	SAVI: 0.3 to 0.4 -> 1700 sq. m.
Red-Orange	SAVI: 0.2 to 0.3 -> 400 sq. m.
Dark Red	SAVI: 0.1 to 0.2 -> 0 sq. m.
Black	SAVI: -1 to 0.1 -> 0 sq. m.



## Scientific Background

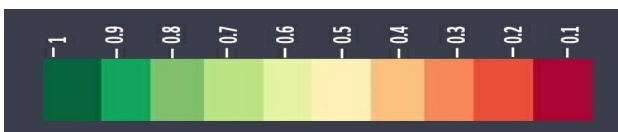
The soil-adjusted vegetation index was developed as a modification of the Normalized Difference Vegetation Index to correct for the influence of soil brightness when vegetative cover is low. The SAVI is structured similar to the NDVI but with the addition of a "soil brightness correction factor".



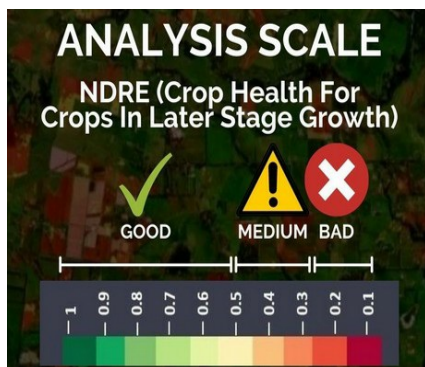
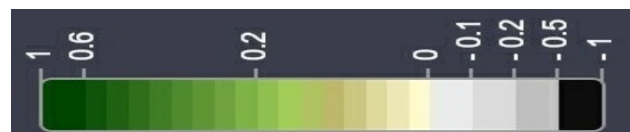
## NDRE (Normalized Difference Red Edge Image)

NDRE image provides you a colour map of the vegetation of your farming field and nearby areas. The areas shown in red are the regions where the crop growth may not be normal. You should refer to these images when your crop is in the later stage of growth. page 8

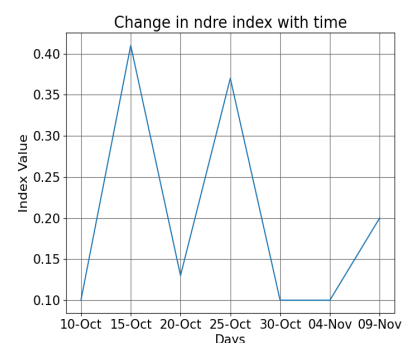
Use When vegetation is of good height"



Use When vegetation is of small height"



Field Area in Different Health Zones	
Dark Green	NDRE: 0.9 to 1.0 -> 0 sq. m.
Green	NDRE: 0.8 to 0.9 -> 0 sq. m.
Light Green	NDRE: 0.7 to 0.8 -> 0 sq. m.
Yellow-Green	NDRE: 0.6 to 0.7 -> 0 sq. m.
Yellow	NDRE: 0.5 to 0.6 -> 0 sq. m.
Orange	NDRE: 0.4 to 0.5 -> 0 sq. m.
Red-Orange	NDRE: 0.3 to 0.4 -> 0 sq. m.
Red	NDRE: 0.2 to 0.3 -> 2100 sq. m.
Dark Red	NDRE: -1 to 0.1 -> 0 sq. m.



## Scientific Background

NDRE uses combination of near infrared light and a frequency band that is in the transition region between visual red and NIR light. The red edge band of NDRE provides a measurement that is not strongly absorbed by just the topmost layers of leaves. By using NDRE, one can get better insight into crops in their later stage because it is able to observe further down into the canopy a well. NDRE is also less prone to saturation in the presence of dense vegetation. This will help us get much accurate results in pasture biomass estimation measurements. Thus, in situation like these, NDRE can provide a much accurate and better measurement of variability in an area in which the NDVI measurement would come simply as 1.0.

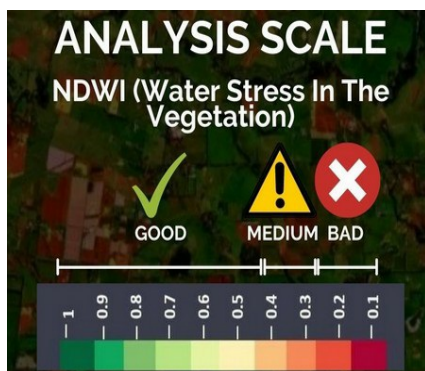
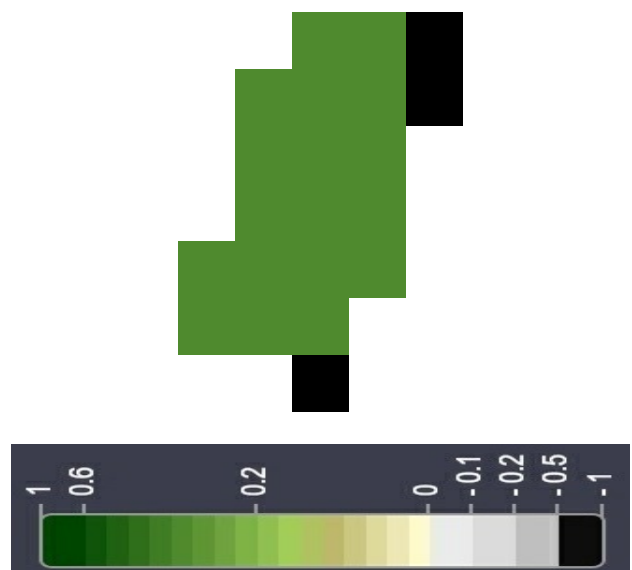
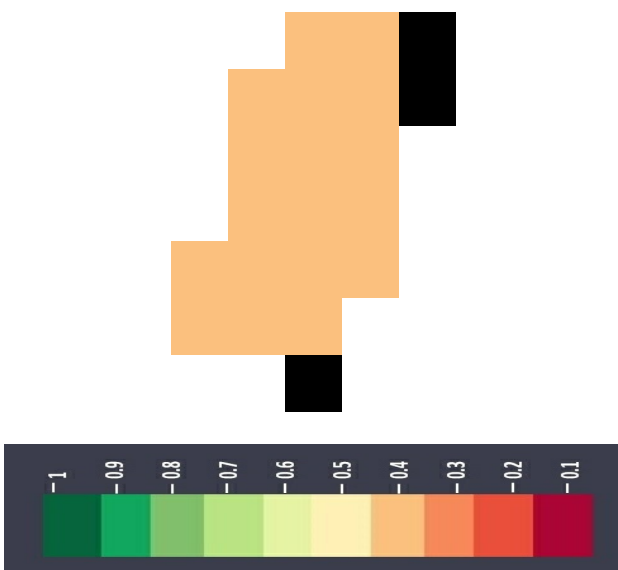
# Irrigation (NDWI, NDMI, Evapotranspiration)

## NDWI (Normalized Difference Water Index)

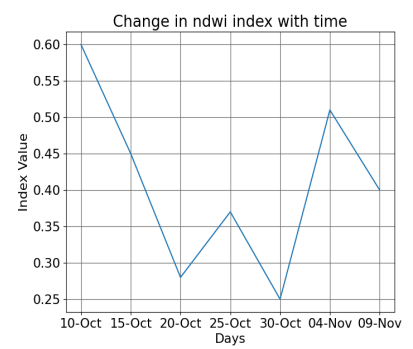
NDWI image provides you a colour map of the vegetation of your farming field and nearby areas. The areas shown in red are the regions where the water level may not be normal. In case of drought or less rainfall, these areas will be the most affected.

Use When vegetation is of good height"

Use When vegetation is of small height



Field Area in Different Health Zones	NDWI Range	Area Affected
Dark Green	0.9 to 1.0	-> 0 sq. m.
Green	0.8 to 0.9	-> 0 sq. m.
Light Green	0.7 to 0.8	-> 0 sq. m.
Yellow-Green	0.6 to 0.7	-> 0 sq. m.
Yellow	0.5 to 0.6	-> 0 sq. m.
Light Orange	0.4 to 0.5	-> 0 sq. m.
Orange	0.3 to 0.4	-> 2000 sq. m.
Red-Orange	0.2 to 0.3	-> 100 sq. m.
Red	0.1 to 0.2	-> 0 sq. m.
Dark Red	-1 to 0.1	-> 0 sq. m.



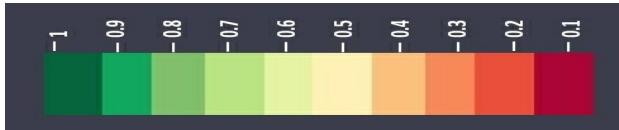
## Scientific Background

Vegetation cover on the earth surface undergoes severe quantity in plants during a drought. If affected areas are not identified in time, entire crops may be damaged. Hence, the early detection of water quantity in plants can prevent many of the negative impacts on crops. NDWI can help us control irrigation and significantly improve agriculture, especially in areas where meeting the need for water is difficult.

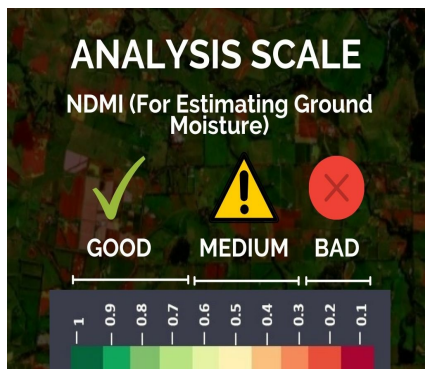
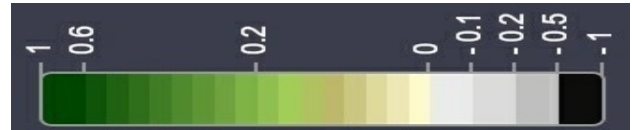
## NDMI (Normalized Difference Moisture Index)

Vegetation cover on the earth surface undergoes severe quantity in plants during a drought. If affected areas are not identified in time, entire crops may be damaged. Hence, the early detection of water quantity in plants can prevent many of the negative impacts on crops. NDMI can help us control irrigation and significantly improve agriculture, especially in areas where meeting the need for water is difficult.

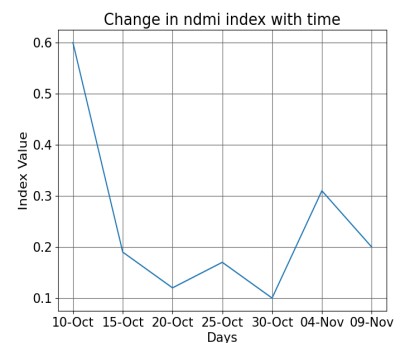
Use When vegetation is of good height"



Use When vegetation is of small height



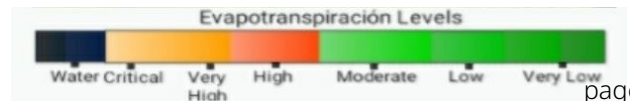
Field Area in Different Health Zones	
Dark Green	NDMI: 0.9 to 1.0 -> 0 sq. m.
Green	NDMI: 0.8 to 0.9 -> 0 sq. m.
Light Green	NDMI: 0.7 to 0.8 -> 0 sq. m.
Yellow-Green	NDMI: 0.6 to 0.7 -> 0 sq. m.
Yellow	NDMI: 0.5 to 0.6 -> 0 sq. m.
Orange	NDMI: 0.4 to 0.5 -> 0 sq. m.
Red-Orange	NDMI: 0.3 to 0.4 -> 0 sq. m.
Red	NDMI: 0.2 to 0.3 -> 0 sq. m.
Dark Red	NDMI: 0.1 to 0.2 -> 2100 sq. m.
Black	NDMI: -1 to 0.1 -> 0 sq. m.



## Scientific Background

The NDMI is a normalized difference moisture index, that uses NIR and SWIR bands to display moisture. The SWIR band reflects changes in both the vegetation water content and the spongy mesophyll structure in vegetation canopies, while the NIR reflectance is affected by leaf internal structure and leaf dry matter content but not by water content. The combination of the NIR with the SWIR removes variations induced by leaf internal structure and leaf dry matter content, improving the accuracy in retrieving the vegetation water content.

## Evapotranspiration



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Identifies Location where water is getting into the Atmosphere at a High rate

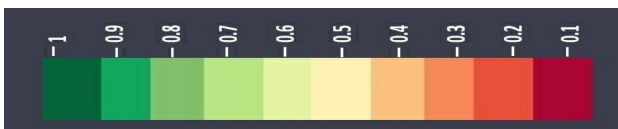
Satellite remote sensing of evapotranspiration is an essential part of the global observation system and provide inputs for agriculture, water resources management, weather forecasts, climate studies and many other applications.

## Soil Health (NDVI, EVI, SAVI, NDRE)

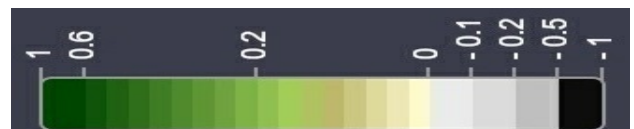
### NDVI (Normalized Difference Vegetation Index)

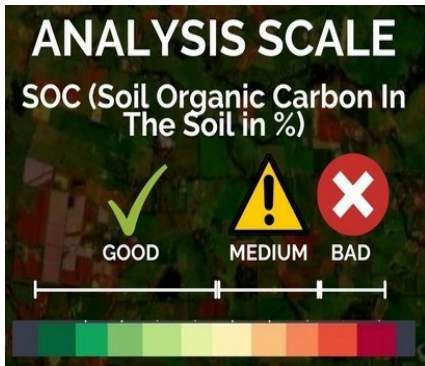
SOC image provides you a colour map of percentage of organic matter present at your selected field. Organic matter contributes to nutrient retention and turnover, soil structure, moisture retention and availability degradation of pollutants, carbon sequestration and soil resilience. The areas shown in red are the regions where the soil organic carbon is less than 1%.

Use When vegetation is of good height"



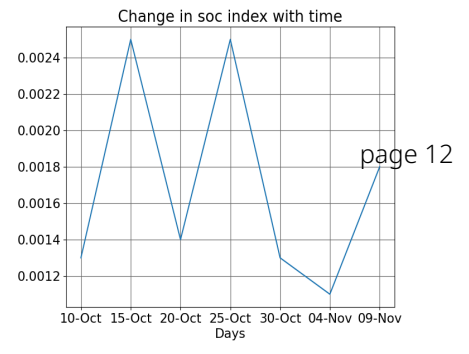
Use When vegetation is of small height





Field Area with Different SOC%

Dark Green	SOC: more than 0.25% -> 0 sq. m.
Green	SOC: 0.2% to 0.25% -> 0 sq. m.
Light Green	SOC: 0.15% to 0.2% -> 1200 sq. m.
Yellow-Green	SOC: 0.137% to 0.15% -> 900 sq. m.
Yellow	SOC: 0.125% to 0.137% -> 0 sq. m.
Light Orange	SOC: 0.112% to 0.125% -> 0 sq. m.
Orange	SOC: 0.1% to 0.112% -> 0 sq. m.
Dark Orange	SOC: 0.075% to 0.1% -> 0 sq. m.
Red-Orange	SOC: 0.05% to 0.075% -> 0 sq. m.
Dark Red	SOC: less than 0.05% -> 0 sq. m.



KEEP MONITORING FARMS

