

# Problem

## Mekong Delta, Vietnam

In 2016, saltwater intrusion damaged **210,000** hectares of agricultural land

Since December 2019, salinity intrusion affected **250,000** families (1.3 million people)

In 2024, it was estimated annual losses exceeded **VND70 trillion (\$2.96 billion)** due to salt intrusion

## Global

An estimation of **approximately one billion hectares** of land was **affected by salinization globally**, which is equivalent to **around 7% of the Earth's land surface**.

Source  
[Mekong Delta](#)  
[World number](#)  
[VN express](#)

# Solution



**Farmers pick**

- Type of plant
- Planting location

**We estimate compatibility**

- Moisture
- Salinization
- Thermal
- Biomass

**A successful crop**

# How we execute

*Surface Reflectance*  
**Landsat**

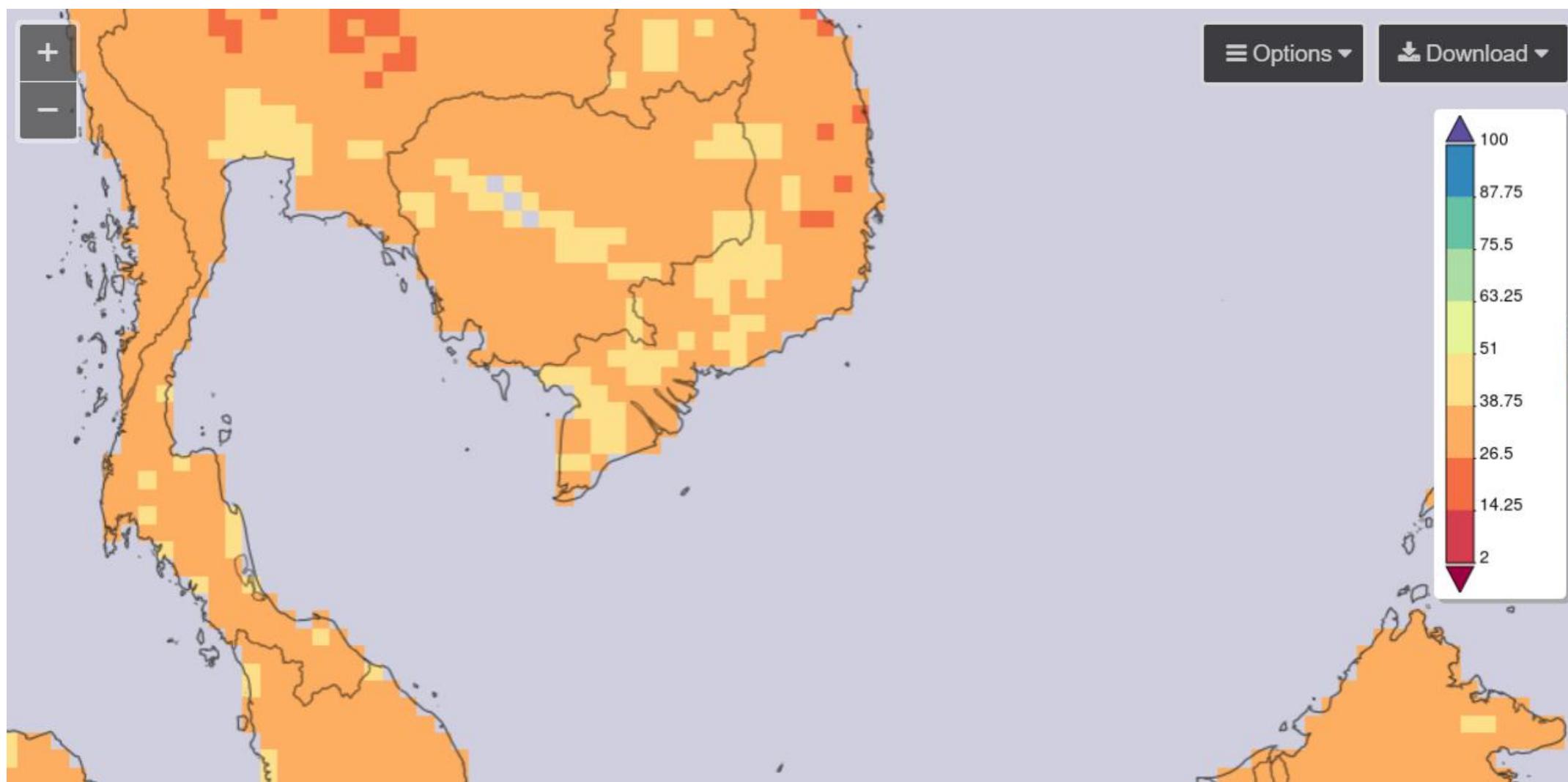
Thermal  
**LDAS**

Soil Moisture  
**LDAS**

Land-cover  
**MODIS**

Biomass Indices  
**GEDI**

Rainfall  
**LDAS**



# Stakeholders



**Farmers' Associations:**  
educate farmers and facilitate  
crop planning.



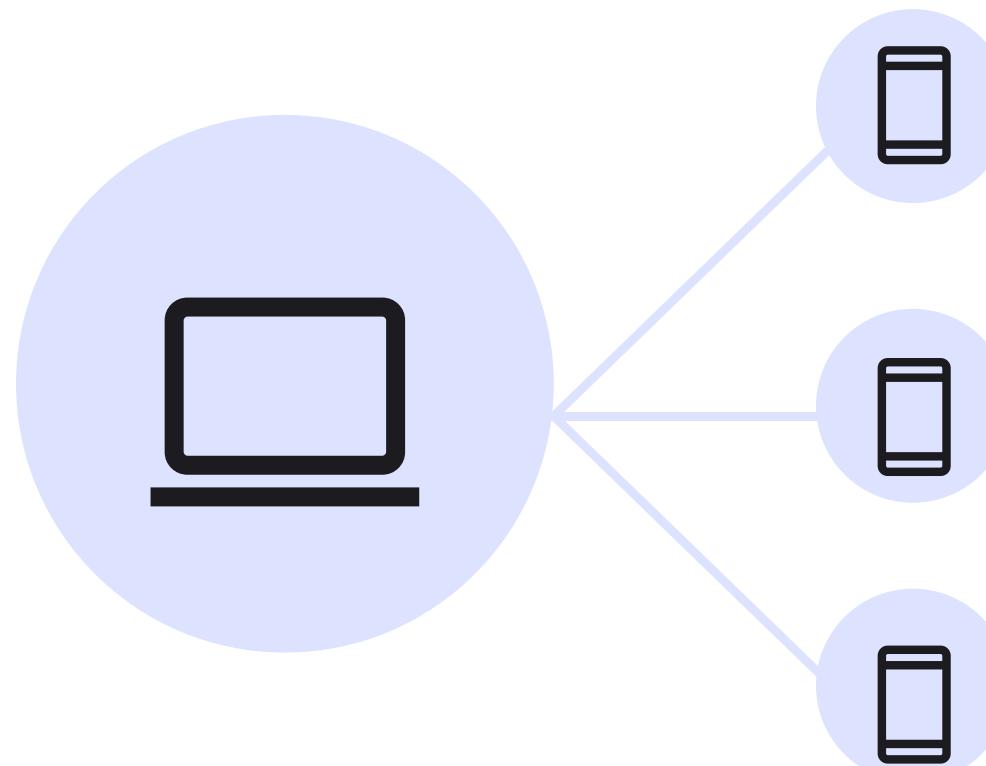
**Individual Farmers:**  
direct users of the tool  
for crop selection.



**Authorities and Law makers:**  
support and regulation of  
agricultural practices.

# Use case 1

Farmers' Associations: Input data to educate and advise farmers on the most suitable crops for their land.

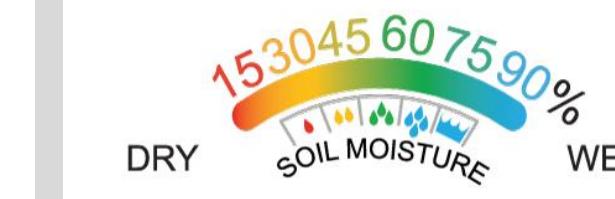


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Moisture
Salinity Tolerance
Biomass

1
5
3
0
4
5
6
0
7
5
9
0
%

DRY  WET

TOLERATES EXTREMELY DRY SOIL
TOLERATES DRY / WELL DRAINED SOIL
TOLERATES MOIST SOIL ←
TOLERATES WET SOIL

**Risk**

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**Benefits**

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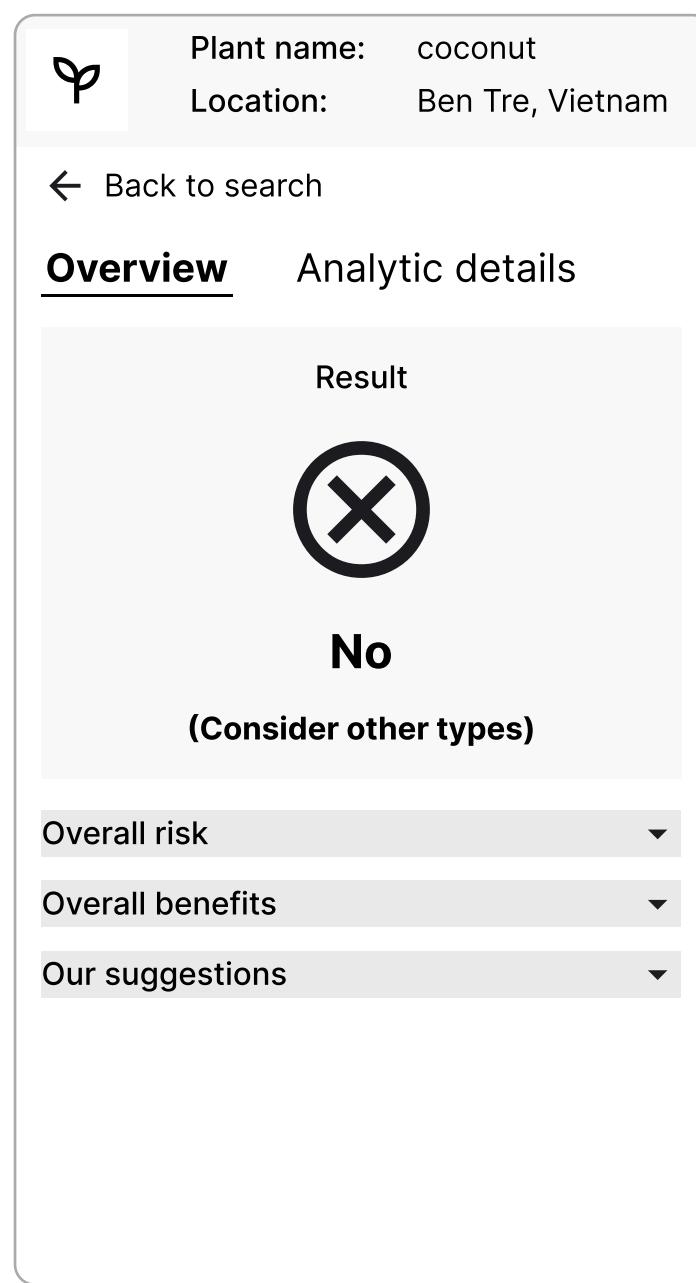
No

Reconsider again

# Use case 2

Individual Farmers: Receive updates via SMS or visit the website to inform farmers about the best crops to grow.

## From website



Plant name: coconut  
Location: Ben Tre, Vietnam

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Result

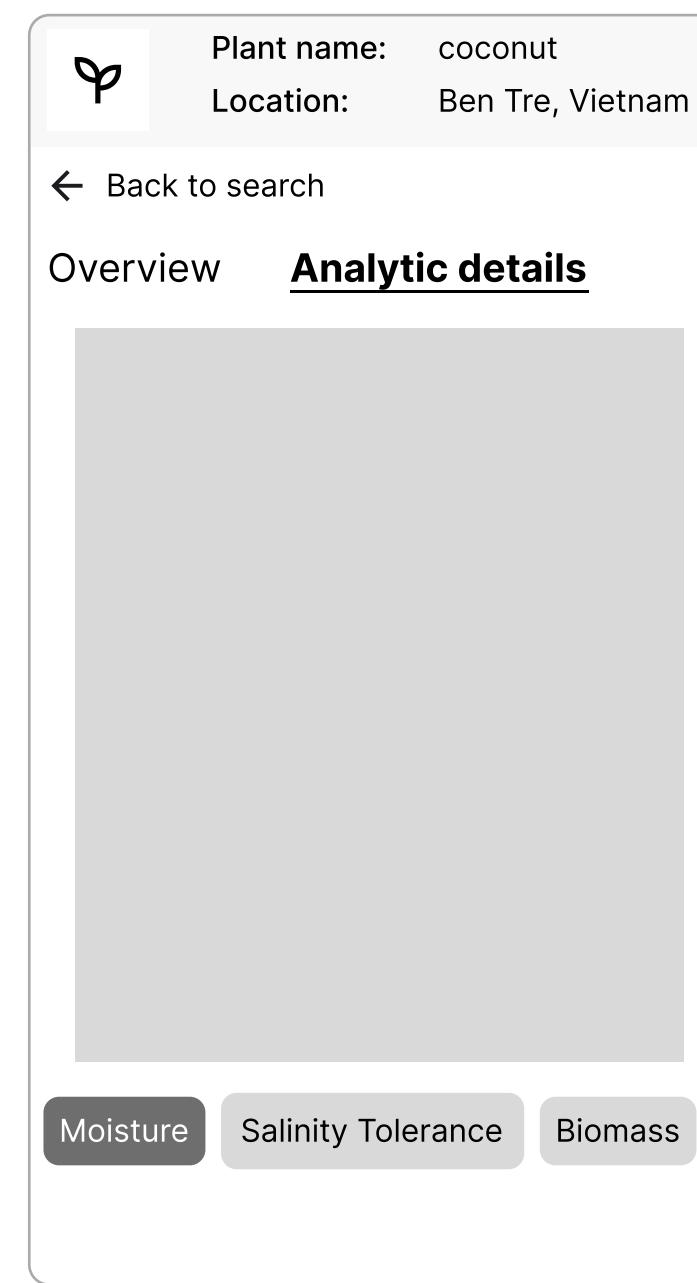
**No**

(Consider other types)

Overall risk

Overall benefits

Our suggestions



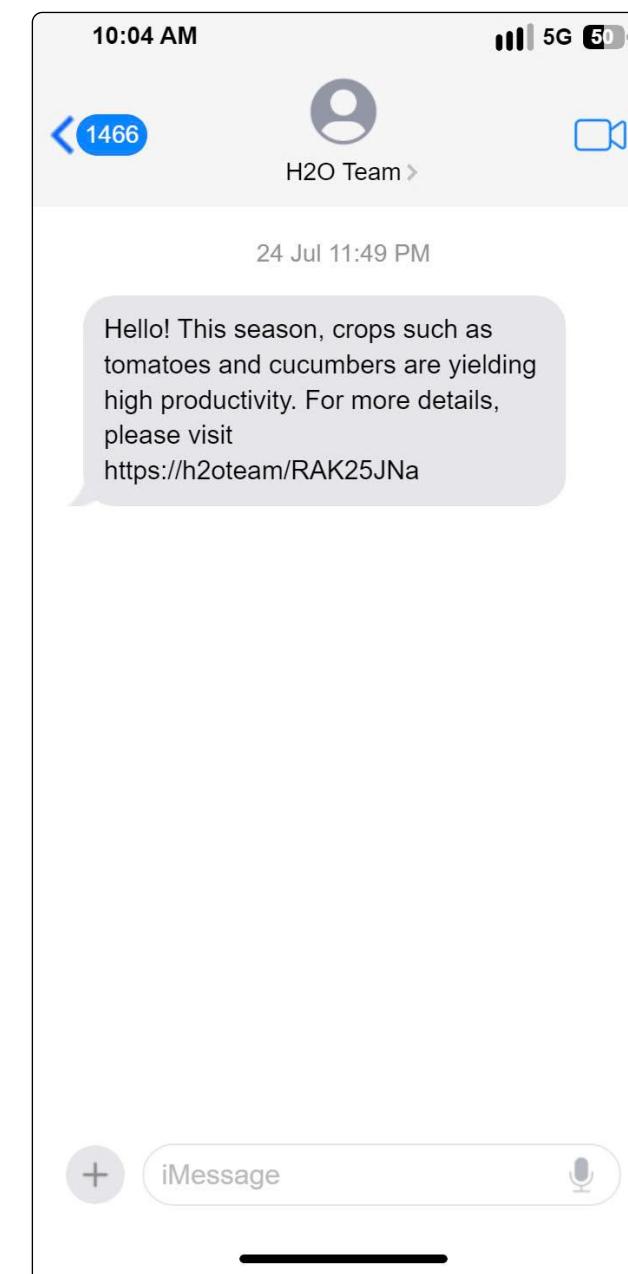
Plant name: coconut  
Location: Ben Tre, Vietnam

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Moisture Salinity Tolerance Biomass

## From text message



# Impact



We help farmers  
**Save time, money, labor** with  
informed crop decision making.

We pioneer  
**data-driven** agricultural decision  
making with remote-sensing Earth  
Observation data.

**We are H2O !**



Image source  
[Pexels](#)

# Thank you~!



**We appreciate your time**

**H2O team**

Hai Au • Khuyen • Nhan • Toan • Thien





## Problem

Farmers face significant risks in crop selection due to unpredictable factors such as weather, surface water salinity, soil salinity, moisture levels, and biomass conditions. These challenges make it difficult for them to decide which crops to plant, leading to potential losses if conditions prove unsuitable.

## Context

**The Mekong Delta region**, which serves as the focal point for our project, is particularly vulnerable to **unpredictable water and soil conditions (resources)**. Farmers often struggle to make informed decisions about crop choices, resulting in wasted resources when unfavorable environmental factors emerge.

Plants Applied: Coconut, pineapple, rice, mangoes and more.

## Solution

We offer an intuitive tool that allows farmers and farming groups to input plant types and receive real-time analysis on the suitability of growing that crop, based on:

- Salinity levels (in water?) → but how it can help inform users from salt water intrusion in Mekong Delta
- Moisture content (water needs)
- Biomass data (fertility of the soil?)

## Key Stakeholders

- Farmers' Associations: educate farmers and facilitate crop planning.
- Individual Farmers: direct users of the tool for crop selection.
- Investors: Provide financial backing and resources.
- Authorities and Law makers: support and regulation of agricultural practices.

## Use cases

We will implement a responsive web application designed for easy access by all stakeholders.

### Use Cases:

1. Farmers' Associations: Input data to educate and advise farmers on the most suitable crops for their land.
2. Individual Farmers: Receive updates via SMS or visit the website to assess the best crops to grow.

## Impact

Our tool will help farmers:

- **Save time, money, and labor** by making more informed crop choices.
- Reduce risks related to environmental unpredictability.
- Increase agricultural productivity through data-driven decision-making.

Further impact metrics to be defined.

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Plant name: Coconut

Location: Ben Tre, Vietnam

Time 2024-2025



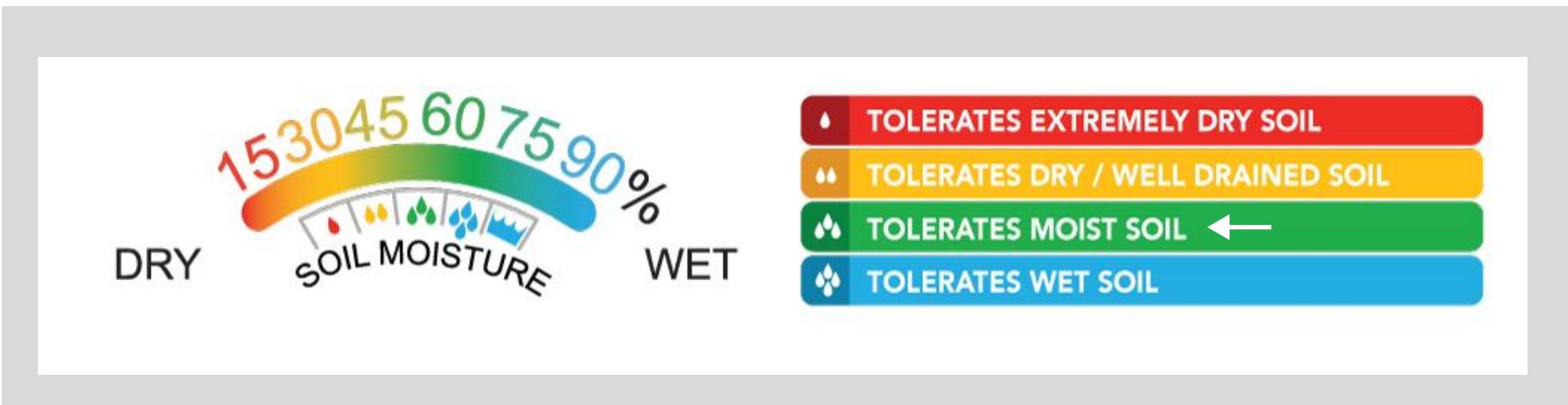
No

[Reconsider again](#)

Moisture

Salinity Tolerance

Biomass



## Risk

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## Benefits

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