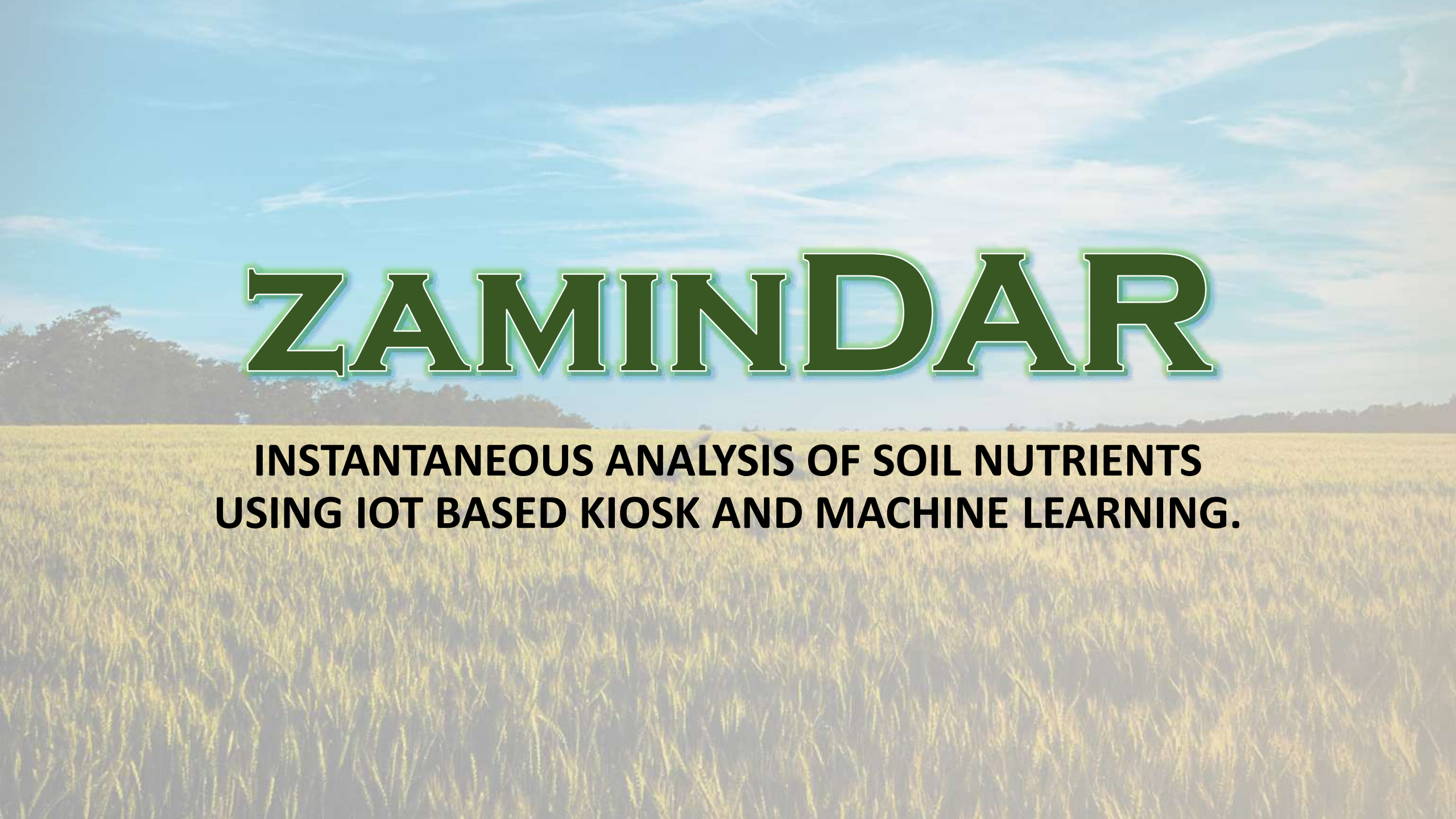

ZAMINDAR
INSTANTANEOUS ANALYSIS OF SOIL NUTRIENTS
USING IOT BASED KIOSK AND MACHINE LEARNING.

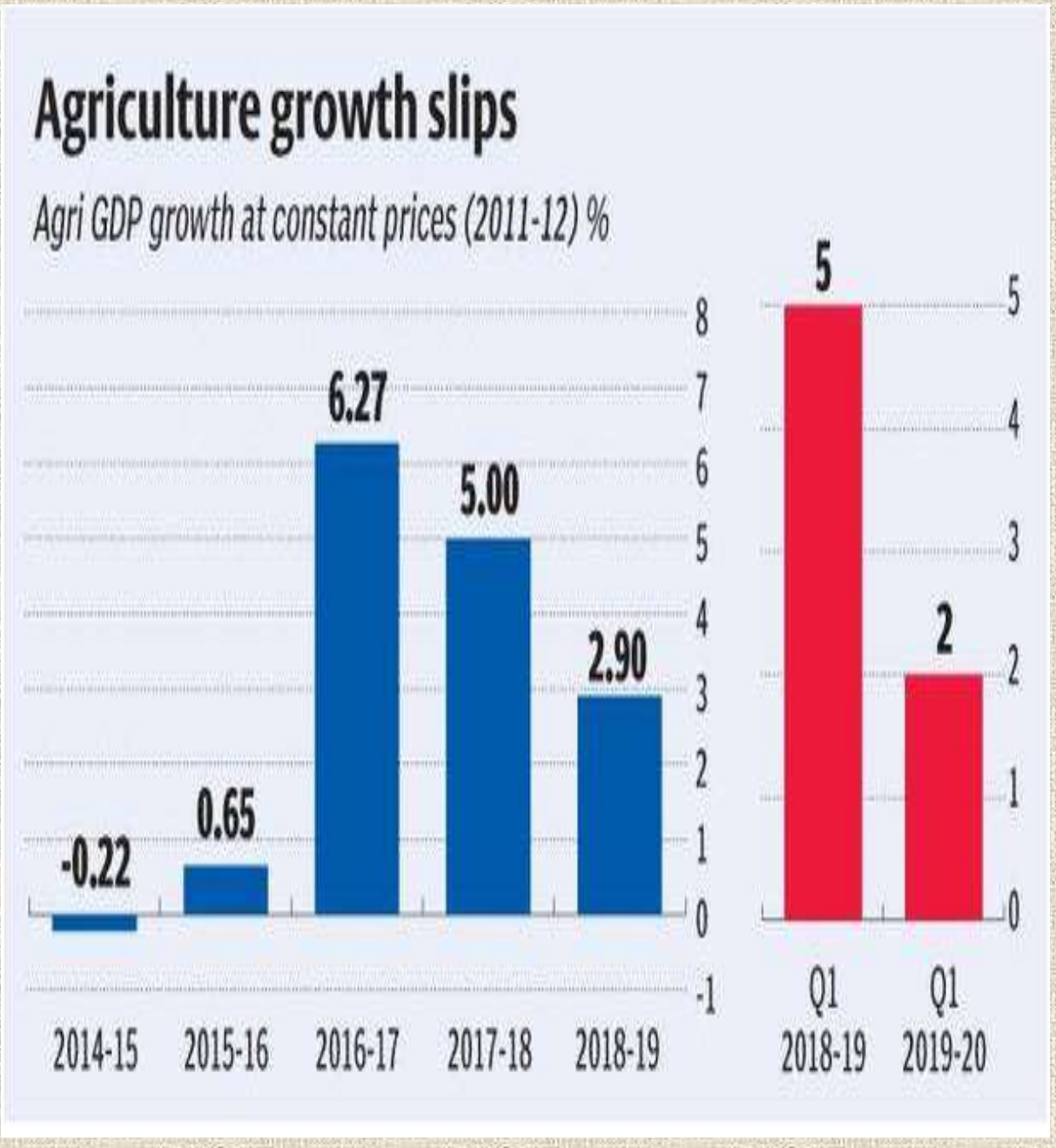
WHY

PRS Legislative research, India in 2015, decline in agricultural productivity 5% to 1% due to **imbalanced use of fertilizers.**

Reduction of food grain output growth from **5% to 2%** from **2012 to 2018.** – **The Hindu**

In the country,
No. of soil laboratories - **2804**.
No. of farmers - **17 crores**.
Thin ratio - *napanta*

Analysis of soil quality in laboratory and report generation is **time consuming – Market Research.**



Farmers keen on leaving agriculture: Expert

Times News Network | Feb 8, 2019, 09:48 IST

A- A+

MYSURU: Nearly 42% of farmers in the country do not want to continue to do agriculture but instead want to settle down in urban areas, said S Rajendran, professor of economics, The Gandhigram Rural Institute, Tamil Nadu.

Delivering the keynote address during the two-day national seminar on 'Agrarian crisis and farmers' suicide in India: Causes, consequences and remedies,' organised by Centre for Study of Societal Exclusion and Inclusive Policy, Manasagangothri, on Thursday Rajendran said, "Across the country, 48 percent of people are directly or indirectly involved in agriculture but the contribution of the sector to for GDP is just

PROBLEM STATEMENT

23.66% of agricultural land is being unutilised. One of the reasons is due to lack of knowledge on soil fertility. Farmers with low crop yield need instant soil quality report to cultivate suitable crops to increase crop production.

SOLUTION

Our Solution is an **easily operable kiosk** which **senses the soil nutrient components** and analyses the values obtained to provide a detailed report, along with **crop suggestions** suitable for the soil, **instantaneously** through a **message service.** The farmer can then buy the required seeds and fertilizers to get a greater yield.

CAD Model of the product

FEATURES

Instantaneous analysis

Suitable fertilizer to maintain fertility

Suitable crops and estimated yield

Communication through messages

Final model of the device

TECHNOLOGIES INVOLVED

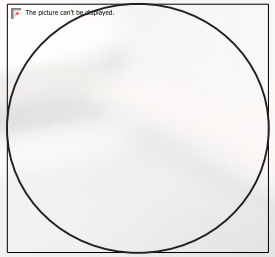
X-ray fluorescent spectrometry

Chemical Reagents for sample preparation

Mid and Near Infra Red Spectrometry

AWS EC2 and Twilio Message Service

USER EXPERIENCE JOURNEY



Collect soil samples from 5 different areas of field

Prepare a proper soil sample mix

Wait for 5 min to get the result.

Place it in the device.

Enter the mobile number

Receive SMS showing crop and fertilizer suggestions to the mobile phone.

SCALABILITY OF OUR PRODUCT

- ✓ The product can be made of three variants :
- ✓ Version 1: A portable probe which can give the qualitative analysis of the soil.
- ✓ Version 2: A kiosk design which provides quantitative analysis of the soil nutrients and suggest the suitable crops and fertilizers.
- ✓ Version 3: An advanced version of the kiosk which considers day to day weather report and monthly market demand of the crops before suggesting the farmers.
- ✓ With such scalability and feasibility problems related to various farmers sections can be addressed effectively.

THE TEAM

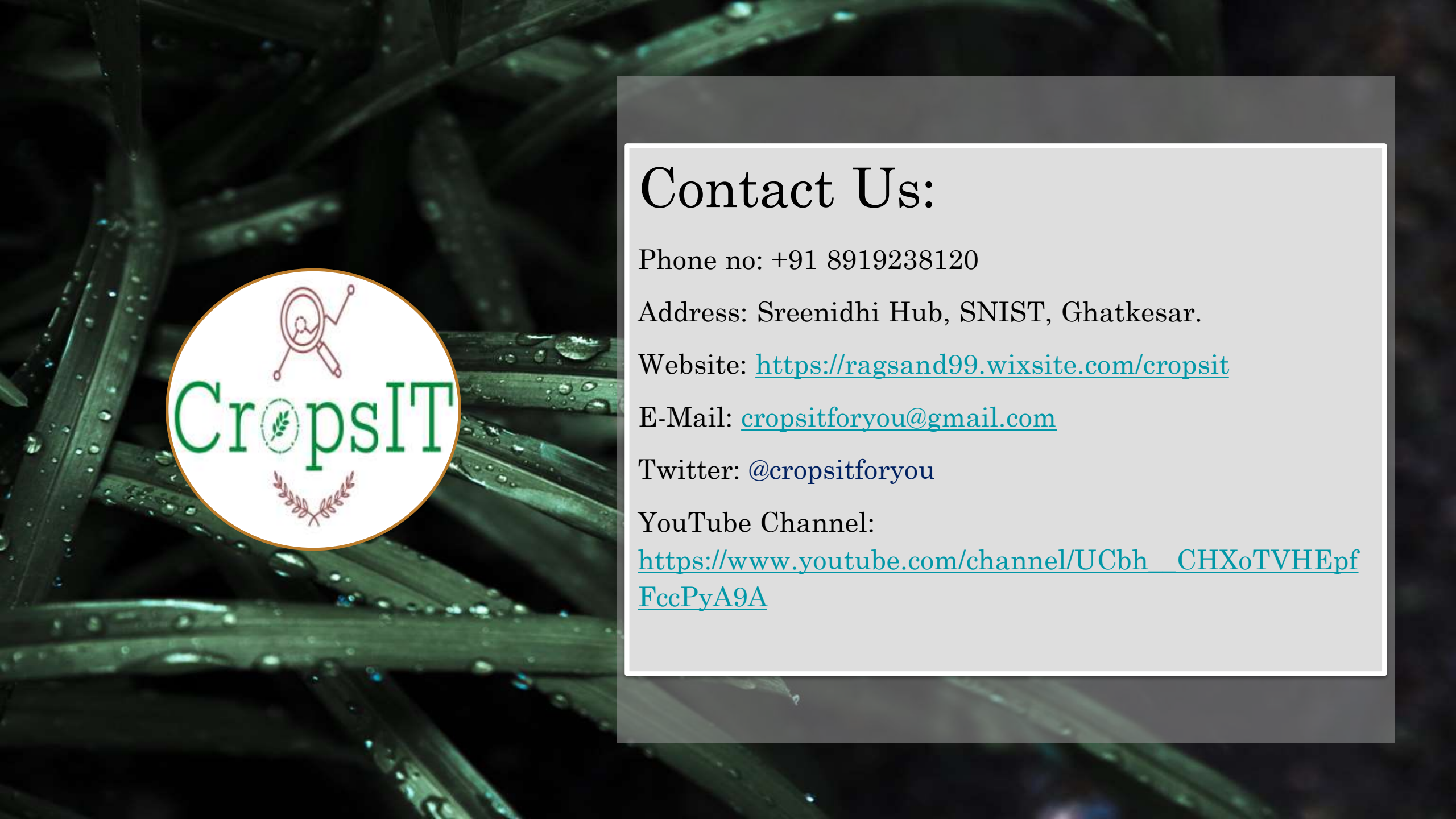
Sai Darshan Kema

Tharun Kumar Reddy

Ragampudy Sandeep

Bhavya Yellapragada

CropsIT



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