

# RASDproj

Sofia Martellozzo - Valeria Detomas

Prof. Elisabetta Di Nitto - Anno 2021/2022

# Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
1.1	Purpose . . . . .	3
1.1.1	Goals . . . . .	3
1.2	Scope . . . . .	3
1.2.1	world phenomena . . . . .	4
1.2.2	shared phenomena . . . . .	4
1.3	Glossary . . . . .	5
1.3.1	Definitions . . . . .	5
1.3.2	Acronyms . . . . .	5
1.3.3	Abbreviations . . . . .	5
<b>2</b>	<b>Section 2</b>	<b>5</b>
2.1	Product Perspective . . . . .	5
2.1.1	Class Diagram . . . . .	5
2.1.2	State Diagram . . . . .	5
2.2	Product Functions . . . . .	6
2.2.1	Farmers insert data . . . . .	6
2.2.2	Farmers visualize data . . . . .	6
2.2.3	other functionalities . . . . .	6
2.2.4	Scenario . . . . .	6

# 1 Introduction

## 1.1 Purpose

The purpose of this document is to thoroughly describe Data-driven Predictive Farming in Telangana (DREAM). It presents functional and non functional requirements of the system and its components. Moreover it provides use cases and scenarios for the users involved.

This document is meant as a contractual basis for the customer and the developer.

### 1.1.1 Goals

- allow policy makers to retrieve information from farmers
- allow farmers to communicate with each other
- allow farmers to insert data, questions, problems
- the impact of meteorological data on farmers activity can be used for further information
- allow farmers to retrieve information relevant for their activity (meteo, humidity..)

## 1.2 Scope

The aim of the system is to acquire and combine data and information of farmers in Telangana. The system will also provide support both to Telangana's policy makers and farmers thanks to new innovative technologies.

(non so se vogliamo mettere questo : The system consists in a back-end server application and in a web application front-end)

Thanks to the system policy makers are able to get a complete picture of the agriculture status in the whole state. In order to do this, DREAM provides information that makes them able to give incentives to those farmers who are performing well and keep track of those who needs help. The farmers have access to a forum on which they are able to communicate with other farmers, a forum to spread useful suggestions and to request for help to those who are having a harder time. The application provides a personalized page for each farmer in which they can find, based on his location and type of production, specific advice, meteorological forecasts and the condition of the soil. This information are already provided by Telangana's government. In this page they can also find several buttons, one that allows them to specify any problem that they face, another one to update their production trend. There is also another button to let those who are recognized as good farmers send advice to the system, so that everyone can improve their knowledge about the local farming ... Data concerning weather are already provided by Telangana's government,

### **1.2.1 world phenomena**

- farmers decide type of production
- weather conditions influence production
- agronomists visit periodically farmers
- agronomists respond to help requests from farmers
- farmers can be identified as those who are performing well or not.
- farmers receive some type of advantage if they are the best one in their production activity

### **1.2.2 shared phenomena**

- humidity of soil is measured by sensors
- amount of water used by each farmer is retrieved by water irrigation system
- Telengana's governments collects data concerning weather forecast
- farmers insert data about their production in the system
- farmers can insert problems they face into the system
- farmers can answer to requests for help from other farmers
- farmers can discuss with each other through the system
- the system identifies the farmers who are performing well

## 1.3 Glossary

### 1.3.1 Definitions

### 1.3.2 Acronyms

### 1.3.3 Abbreviations

## 2 Section 2

### 2.1 Product Perspective

#### 2.1.1 Class Diagram

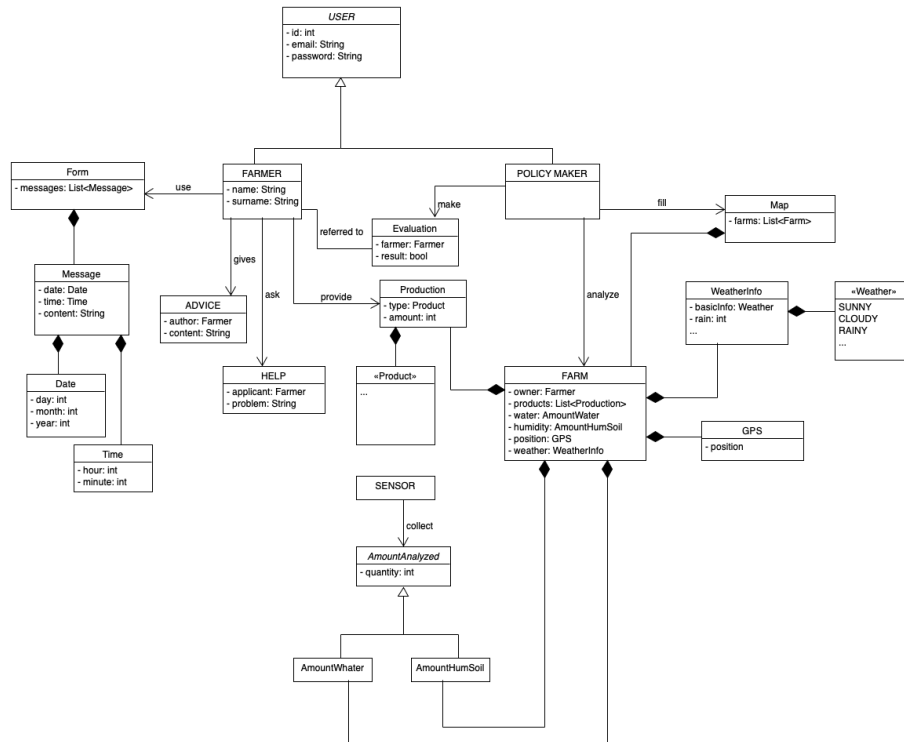


Figure 1: UML diagram.

#### 2.1.2 State Diagram

## 2.2 Product Functions

This section provides a summary of the main features and functions offered by the software regarding the goals already described in section 1.1.1

In the following description it is important to highlight that both the policy makers and the farmers must be logged in.

### 2.2.1 Farmers insert data

This functionality is accessible to all farmers. The application provides a form in which the farmer can easily insert data of his/her production. The form is easy to fill in, in order to complete it the farmer need to indicate:

- the **type of product**
- the **amount** producted of the selected type
- the **date** relative to the date of the production

If the farmer needs to add more than one type of product, he/she can fill in the form multiple times. After completing the form the user is redirected to the homepage and the policy makers can see the updated data. This functionality can be done more than once a day since the farmer can select the date, so it is possible for him to insert data of past days too.

### 2.2.2 Farmers visualize data

This functionality lets the farmer visualize all the data acquired from the system. The farmer can visualize all data on his homepage.

The application shows:

- meteorological short-term and long-term forecast
- amount of water used by the farmer
- humidity of soil
- personalized suggestions concerning specific crops to plant or specific fertilizers to use – based on their location and type of production

**should I say why he needs to visualize this data or how he uses it**

This functionality is always up to date, and does not need any input from the farmer. It is used by the farmer only to have a general view of his farm and on how could improve the productivity of his farm.

### 2.2.3 other functionalities

- identify how farmers are performing - interaction between farmers insertion of thing (request, suggestion, answer) in the forum

### 2.2.4 Scenario