# Software Requirements Specification

# Farmer Empowerment through Digital Agricultural Solutions

# Web-Based System(FEDAS)

(Empowering farmers with knowledge)

Version 1.0

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System Analysis & Design - IS2106

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# Table of Contents

# 1.Introduction

The agricultural sector is important for global food security and economic stability. However smallholder farmers always lack access to essential information and resources, hindering their productivity and resilience. In reaction, leveraging technology through an online platform supply a solution to disseminate agricultural knowledge, promote best practices and enhance productivity. This document outlines the requirements for developing such a platform, aimed at encouraging farmers, fostering climate resilience and meeting market demand for sustainable agriculture.

# 2. Purpose

The purpose of this Software Requirements Specification document is to provide a comprehensive guide for the development of a Farmer Empowerment through Digital Agricultural Solutions Web-Based System(FEDAS). This platform aims to address the critical challenges faced by farmers worldwide by serving as a centralized hub for disseminating agricultural information, promoting sustainable farming practices, and enhancing agricultural productivity and resilience.

Through this platform, farmers will gain easy access to a wealth of agricultural resources, including expert advice, best practices, and market insights. By leveraging technology, the platform aims to empower farmers to make informed decisions about their farming techniques, optimize resource utilization, and adapt to changing environmental conditions, thereby contributing to their long-term success and the sustainability of global agriculture.

The SRS document outlines the functional and non-functional requirements necessary to realize the vision of the Farmer Empowerment through Digital Agricultural Solutions Web-Based System (FEDAS). By adhering to the requirements outlined in this document, the platform can effectively meet the needs of its intended users and fulfill its mission of revolutionizing agricultural practices for the betterment of farmers and the agricultural industry as a whole.

# 3. Intended Audience

**Farmers**

These are the primary audience seeking guidance, information and assistance in various aspects of farming such as crop management, pest control, soil health, irrigation techniques and post-harvest practices.

**Agricultural Workers**

Farm workers, managers and other personnel involved in the day-to-day operations of farms

**Agricultural Entrepreneurs**

For people interested in starting or expanding agricultural businesses, they can easily access resources such as planning, market analysis and loans and grants.

**Agribusinesses**

This includes suppliers of agricultural inputs such as seeds, fertilizers, pesticides as well as product buyers and service providers

**Government Agencies**

These include agricultural service centers, such as agricultural extension services, departments of agriculture and rural development agencies, to disseminate information, implement programs and provide support to farmers.

**Educational Institutions**

Agricultural service centers for conducting research, imparting training and offering educational programs , including agricultural colleges, universities and vocational training centers.

**Research Institutions**

Engaged in agricultural research and innovation, facilitating technology transfer, conducting field trials and disseminating research findings to farmers and stakeholders

**Community Organizations**

Farmer cooperatives, self-help groups and grassroots organizations can seek support from agriculture service centers for networking and access to resources

**Consumers**

Consumers benefit indirectly through improved agricultural practices, increased food availability, and increased food safety and quality because they are not directly served by agricultural service centers.

# 4. Project Scope

The online agricultural platform aims to be a one-stop resource for farmers, offering the latest information on all aspects of farming, from growing crops to managing livestock. It promotes sustainable methods like organic farming and smart irrigation through educational content and expert advice. The platform encourages community interaction through forums and webinars, helping farmers and experts share knowledge and work together. Plus, it includes a marketplace where farmers can buy and sell their products and services.

# 5. Functional Requirements

## 5.1 User Management

User registration functionality allows farmers and other users to create personalized accounts on the platform, granting them access to its features. Through the registration process, users can provide necessary information and set up login credentials for future access.

Authentication ensures the security of user accounts by implementing secure mechanisms to verify users' identities during login. By requiring authentication, the platform can prevent unauthorized access and protect users' sensitive information from potential security threats.

## 5.2 Agricultural Information Repository

The platform's goal is to disseminate agricultural information effectively to users, encompassing a variety of features to enhance accessibility and usability.

**Comprehensive Database**

The platform will host a vast repository of agricultural information covering various crops, livestock, and farming techniques.

**Categorization and Tagging**

Information will be organized into categories and tagged with relevant keywords to facilitate easy navigation and searchability.

**Multimedia Content**

Information will be presented in diverse formats, including text articles, images, videos, and interactive tools to cater to different learning preferences.

## 5.3 Farming Best Practices

**Guidance and Recommendations**

A dedicated section of the platform will offer guidance on farming best practices, including crop cultivation techniques, pest and disease management strategies, soil health improvement, and irrigation methods.

**Expert Insights**

Expert agronomists and agricultural researchers will contribute their insights and recommendations to ensure the accuracy and relevance of the content.

## 5.4 Climate Resilience and Sustainable Agriculture

**Resilience Resources**

Resources for building climate resilience in agriculture will be provided, offering information on climate-smart farming practices, drought-resistant crops, water conservation methods, and weather forecasting tools.

**Sustainability Guidelines**

The platform will emphasize sustainable agriculture principles, promoting practices that minimize environmental impact, conserve natural resources, and promote biodiversity.

## 5.5 Fertilizer and Pesticide Guidance

**Recommendation System**

A recommendation system for fertilizers and pesticides will be implemented, offering tailored advice based on crop type, soil conditions, pest prevalence, and environmental factors.

**Market Demand Analysis**

Insights into market demand for agricultural products will be provided, guiding farmers in making informed decisions about crop selection and production planning.

## 5.6 Market Demand Analysis Tools

**Market insights**

Tools for analyzing market demand for agricultural products will be available, providing farmers with insights into pricing trends, consumer preferences, and market opportunities.

**Data visualization**

Market demand data will be presented in interactive charts and graphs to facilitate data interpretation and decision-making.

## 5.7 User Interaction and Engagement

**Interactive Features**

Interactive features such as discussion forums, live Q&A sessions, and community groups will facilitate user interaction and knowledge sharing among farmers and experts.

**Feedback Mechanisms**

Feedback mechanisms will be integrated to allow users to provide input on the platform's content, usability, and functionality, ensuring continuous improvement and relevance.

# 6. Non-functional Requirements

## 6.1 Performance

The platform needs to handle a large number of users at the same time without slowing down, and it should respond quickly when users search for information or retrieve data.

## 6.2 Security

User data should be encrypted and securely stored to prevent unauthorized access, and all communications should utilize secure connections (HTTPS) to ensure the confidentiality and integrity of data transmitted over the platform.

## 6.3 Usability

The platform should have a user-friendly interface, making it easy for everyone to navigate. It should also include features that make it accessible for people with disabilities, ensuring usability for all.

# 7. References


- **WM Asanka Bandara**

  Regional Agricultural Development Officer

  Agricultural Service Centre

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