# Product Requirements Document (PRD)

### Product Name: Farmer Underground Directory

**Prepared by**: Emilda Solutions Pvt. Ltd.  
 **Date**: 26 May 2025

## 1. Product Overview

The Farmer Underground Directory is a web application designed to connect local farmers with consumers, promoting sustainable agriculture and strengthening local food systems. It offers two primary user modes—**Buyer** and **Seller**—with seamless switching between purchasing and selling agricultural products.

## 2. User Modes

### 2.1 Buyer Mode

* Browse, search, and purchase products from local farmers.

### 2.2 Seller Mode

* List products, manage inventory, and respond to customer requests.

## 3. Core Features

### 3.1 Authentication System

* User registration and login
* Profile management
* Mode switching (Buyer/Seller)

### 3.2 Marketplace

* Product browsing and filtering (via **Algolia**)
* Detailed product listings
* Order placement and management

### 3.3 Seller Tools

* Product listing management
* Request handling

### 3.4 Location Services

* Serviceable area management
* Location-based filtering (via **Google Maps**)

## 4. User Flows

### 4.1 Buyer Mode Flow

* **Homepage**: Featured products carousel, quick marketplace access, platform introduction
* **Marketplace Feed**: Product browsing, filters (type, location, attributes)
* **Product Details**: Gallery, full info, seller profile, ratings
* **Orders**: Order history, status tracking
* **User Profile**: Personal info, address book, notifications
* **Seller Profiles**: Bio, listings, reviews

### 4.2 Seller Mode Flow

* **Dashboard**: Active listings, request counters, quick actions
* **Listings Management**: View/add/edit listings, toggle draft/active
* **Listing Form**: Product details, pricing, service areas
* **Request Management**: View/filter/update requests
* **Seller Profile**: Business info, working hours, certifications
* **Seller Settings**: Business description, highlights, images, location management

## 5. Page Functionality

### 5.1 Common Pages

* **Homepage (/)**: Intro, carousel, CTAs
* **Auth (/auth)**: Login, register, password recovery
* **Donate (/donate)**: Mission, support options
* **Profile (/profile)**: Settings, mode preferences
* **Address (/address)**: Add/edit addresses
* **Notifications (/notifications)**: Alerts, preferences
* **Membership (/membership)**: Plan details, upgrade options

### 5.2 Buyer Pages

* **Marketplace (/marketplace)**: Grid/list views, filters, sort
* **Listing Detail (/listing/:id)**: Gallery, specs, send interest
* **Seller Profile (/seller/:id)**: Bio, ratings, product list
* **Orders (/orders)**: History, status, reorder options

### 5.3 Seller Pages

* **Dashboard (/dashboard)**: Listings, requests, activity
* **Listings (/seller/listings)**: All listings, quick actions
* **Listing Form (/seller/listings/new)**: Create/edit listings
* **Listing Detail (/seller/listings/:id)**: Performance, edit/delete
* **Requests (/seller/requests)**: Manage incoming requests
* **Settings (/seller/settings)**: Notifications, payment info
* **Profile (/seller/profile)**: Business info, certifications

## 6. Technical Features

* **UI**: Responsive design (Tailwind CSS, Lucide React, Embla Carousel)
* **Search**: Algolia instant search
* **Maps**: Google Maps integration
* **File Uploads**: React-dropzone with previews
* **Forms**: Input validation, tagging
* **Notifications**: In-app toasts, Firebase Cloud Messaging
* **Drag & Drop**: DND Kit for sortable interfaces

## 7. Tech Stack

| **Layer** | **Technology** |
| --- | --- |
| **Frontend** | React + Vite |
| **Styling** | Tailwind CSS |
| **State** | React Context / Redux (optional) |
| **Icons** | Lucide React |
| **Carousel** | Embla Carousel |
| **Backend** | Firebase (Firestore, Auth, Storage, Functions) |
| **Search** | Algolia |
| **Maps** | Google Maps API |
| **Notifications** | Firebase Cloud Messaging, Sonner |

## 8. Detailed Feature List

### User Account Management

* **Registration & Authentication**: Email/password, password recovery, role selection
* **Profile Management**: Personal info, photo, contact info
* **Mode Switching**: Toggle between Buyer and Seller

### Marketplace

* **Product Browsing**: Featured carousel, services, sellers, list/grid view
* **Search & Filtering**: Type, price, certifications, sort
* **Product Details**: Image gallery, unit selection, availability
* **Seller Profiles**: Bio, certifications, contact, catalog

### Buyer Features

* **Order Management**: Order history, status
* **Location Services**: Address book

### Seller Features

* **Dashboard**: Active listings, new requests, quick actions
* **Listing Management**: Create/edit listings, toggle status
* **Product Info**: Type, description, price, stock
* **Media**: Upload/reorder images, featured image
* **Inventory Control**: Stock tracking, out-of-stock handling
* **Tags & Certifications**: Add/edit/display
* **Specifications**: Technical details per listing
* **Service Areas**: Delivery radius config
* **Request Handling**: Inbox, status updates, messaging
* **Business Profile**: Info, certifications

### Communication

* **Request System**: Buyer requests, seller status updates

### Mapping

* **Location Display**: Farm markers, service overlays on maps

### UI/UX

* **Design System**: Earthy color palette, responsive design
* **Component Library**: Forms, cards, tabs, carousels
* **File Handling**: Drag-and-drop uploads with previews

## 9. Non-Functional Requirements

| **Category** | **Specification** |
| --- | --- |
| Performance | Fast loads, optimized assets, efficient queries |
| Security | Secure auth, data encryption, validation |
| Deployment | Netlify, SPA routing, fallback redirects |

## 10. System Architecture

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User Browser ──▶ React App (Vite) on Netlify

├─ Static Assets / SPA Routing

└─ API Calls to Firebase Backend

├─ Firestore (users, listings, orders)

├─ Firebase Auth

├─ Firebase Storage (images/docs)

├─ Firebase Cloud Functions

└─ External Services:

├─ Algolia (Search)

└─ Google Maps API

## 11. Sitemap

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/ → Home

/auth → Login/Register

/donate → Donate

/profile → User Profile

/address → Address Manager

/notifications → Notifications

/membership → Membership

/marketplace → Marketplace Feed

/listing/:id → Listing Detail

/seller/:id → Seller Profile

/orders → Orders

/dashboard → Seller Dashboard

/seller/listings → Manage Listings

/seller/listings/new → New Listing

/seller/listings/:id → Listing Detail (Seller)

/seller/requests → Requests

/seller/settings → Seller Settings

/seller/profile → Seller Profile Management

## 12. Key User Journeys

### Buyer

* Home → Marketplace → Filter/Search → Product Detail → Send Interest → Confirmation

### Seller

* Switch to Seller Mode → Dashboard → Add/Edit Listings → Manage Requests → Track Performance

## 13. Stakeholders & RACI

| **Role** | **Name/Team** | **Responsibility** |
| --- | --- | --- |
| Product Owner | Farmer Underground Directory | Define requirements, approve deliverables |
| Project Manager | Emilda Solutions | Planning, timelines |
| UI/UX Designer | Emilda Design Team | Wireframes, visuals, usability |
| Engineering | Emilda Dev Team | Development, code reviews, testing |
| QA | Emilda QA Team | Test planning, defect tracking |

## 14. Risks & Mitigations

| **Risk** | **Impact** | **Mitigation** |
| --- | --- | --- |
| Algolia Index Limits | Search failure | Use startup credits, prune old data |
| Firebase Outages | App downtime | Multi-region setup, offline caching |
| Google Maps API Changes | Location issues | Monitor updates, implement fallbacks |

## Next Steps

* Share meeting summaries for UI changes
* Validate all functional details and edge cases
* Final review and approval of PRD

### 15. Client Approval & Sign-Off

#### The undersigned confirms that they have reviewed and approved the contents of this Product Requirements Document (PRD) for the Farmer Underground Directory. This approval indicates agreement on the scope, features, and deliverables as outlined. Any subsequent changes will require a formal change request and mutual consent.

#### Client Representative Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Organization: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_