# MRV Connect: A Streamlined MRV Solution for Agroforestry

## Project Overview

**MRV Connect** is a proof-of-concept prototype designed to simplify and democratize the Monitoring, Reporting, and Verification (MRV) process for small-scale agroforestry and carbon offset projects. It addresses the significant barrier that complex and manual data collection presents to smallholder farmers and non-profits, enabling more widespread and efficient participation in the carbon market.

The core of this application is a lightweight, single-page web application that uses Google's powerful APIs to create an intuitive user experience.

## Key Features

* **Mobile-First Data Entry:** A simple, responsive interface allows users to easily log key metrics like tree counts and crop yields directly from their mobile devices.
* **AI-Powered Analysis:** The application integrates the **Gemini API** to provide automated, real-time analysis of the data. This means users don't need a technical background to understand their project's progress and carbon impact.
* **Secure & Real-Time Data Storage:** All data is securely stored in a Firebase Firestore database, ensuring that it is tamper-proof and accessible to all authorized stakeholders.
* **Real-Time Communication:** A built-in chat system, powered by Firebase, allows for instant communication between project managers and field agents, improving collaboration and problem-solving.
* **Decentralized Verification:** The platform's transparent data model enables efficient third-party verification, building trust and integrity in the carbon credits generated.

## Technology Stack

* **Frontend:** HTML, CSS, JavaScript (all contained within a single index.html file for simplicity and portability)
* **Backend & Database:** Google Firebase (Firestore and Authentication)
* **AI Integration:** Google Gemini API for real-time data analysis and insights

## Getting Started

To run this project, you will need to set up a Google Firebase project and enable Firebase Authentication and Firestore.

1. **Clone the repository:**  
   git clone [your-repository-url]
2. **Set up Firebase:**
   * Create a new project in the Firebase Console.
   * Enable **Firestore Database**.
   * Enable **Authentication** and choose **Anonymous** sign-in for initial testing.
3. **Configure the app:**
   * In the Firebase Console, go to **Project Settings > General** and find your Firebase configuration object.
   * Copy this object and replace the firebaseConfig placeholder in the index.html file.
   * Set the **app\_id** in the index.html file to your Firebase project's app ID.
4. **Run the application:**
   * Open the index.html file in your web browser. The app will automatically initialize and you can begin testing the features.

## Contributing

This project is a prototype, and contributions are welcome. Feel free to fork the repository, make improvements, and submit a pull request.

## License

This project is licensed under the MIT License.