Kenya Farm IoT – User Manual

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1. Introduction

Kenya Farm IoT (Shamba IoT) helps you monitor your farm using soil moisture sensors and get irrigation advice and alerts by SMS. This manual explains how to use the **web dashboard** and the **soil moisture dashboard page** on your phone or computer.

Main features:

- Register and log in with your phone number
- Add and manage soil moisture sensors
- View current readings and 7-day trends
- Get irrigation recommendations in **English** or **Swahili**
- Receive alerts and send recommendations by SMS
- Use a simple, mobile-friendly page that works **offline**

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2. Getting started

2.1 Opening the app

- **Web app (full dashboard):** Open the link provided by your administrator (e.g. `https://farm.example.com`) in a browser on your phone or computer.
- **Soil moisture page (simple view):** Open the soil dashboard link (e.g. `https://farm.example.com/soil-dashboard.html`). This page works on its own and can be saved for offline use.

2.2 Registering an account

1. Open the web app and click **Register** (or "Jisajili" in Swahili).
2. Enter:
    - **Phone number** – Kenyan number, e.g. `0712345678` (no spaces or plus sign).
    - **Password** – Choose a strong password and remember it.
    - **Name** (optional) – Your or your farm name.
    - **County** (optional) – Your county.
3. Click **Register**.
4. After success, you are redirected to **Login**. Log in with the same phone number and password.

Note: Keep your phone number and password safe; you need them to log in and receive SMS alerts.

2.3 Logging in

1. Open the web app and click **Login** (or "Ingia").
2. Enter your **phone number** and **password**.
3. Click **Login**.
4. You are taken to the **Dashboard**.

If you forget your password, contact your administrator to reset it.

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3. Dashboard (main web app)

After login you see the **Dashboard** with:

- **Sensors** – Total number of sensors you have added.
- **Active** – Number of sensors that are currently sending data.
- **Unread alerts** – Alerts that you have not yet marked as read.

You can:

- Click **Manage sensors** to add or edit sensors.
- Click **View alerts** to see all alerts and mark them as read.

Recent alerts are listed at the bottom. Click an alert to see details; you can mark it as read so it no longer counts as unread.

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4. Sensors

4.1 Viewing sensors

- From the Dashboard, click **Manage sensors**, or open **Sensors** from the menu.
- You see a list of all your sensors with name, type, location, and status (active/inactive).

4.2 Adding a sensor

1. Click **Add sensor** (or similar button).
2. Fill in:
    - **Name** – e.g. "Shamba la maize block A"
    - **Type** – e.g. "Soil moisture"
    - **Location** (optional) – e.g. "Block A, near water tank"
3. Save.

The system creates the sensor and shows its **ID**. You need this ID when configuring your physical sensor or MQTT device to send data to the platform.

4.3 Sensor details and readings

- Click a sensor to open its **detail** page.
- You see recent **readings** (e.g. soil moisture %) and can view history.
- Readings can come from:
    - The backend when your device sends data via MQTT or the API, or
    - Manual or demo data depending on how your system is set up.

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5. Alerts

- Open **Alerts** from the menu.
- You see a list of alerts (e.g. “Low soil moisture”, “High soil moisture”) with date and message.
- **Unread** alerts are highlighted. Click an alert and use **Mark as read** (if available) to clear it.
- When alerts are enabled, the system can send an **SMS** to your registered phone number for important events (e.g. soil too dry). SMS depends on administrator configuration (Africa's Talking or similar).

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6. Soil moisture dashboard page (simple view)

A **single-page soil moisture dashboard** is available for quick use on mobile and for offline use.

6.1 Opening the page

- Open: `https://your-domain.com/soil-dashboard.html`
  (Replace with the URL your administrator gives you.)

- You can **bookmark** this page on your phone for quick access.

6.2 What you see

1. **Current soil moisture** – A **large number** (percentage) with a **colour**:
    - **Green** – Good moisture level.
    - **Yellow/Orange** – Moderate; irrigation may be needed.
    - **Red** – Low; irrigation recommended.
2. **Last 7 days chart** – A graph showing moisture trend over the past week.
3. **Irrigation recommendation** – A short message in **Swahili** (e.g. “Tafadhali omwagilia” = Please irrigate, or “Unyevu wa kutosha” = Moisture is sufficient).

4. **Tuma SMS** (Send SMS) button – Copies the recommendation and opens your phone's SMS app so you can send the message to someone (e.g. a worker).

6.3 Offline use

- The page can **work offline** after you have opened it once while online. The app will cache the page and show **demo data** and a **client-side recommendation** when you have no internet.
- When back online, refresh the page to load live data from the server (if configured).

6.4 Optional: sensor and API

- If your administrator has set up the API and you are logged in (token stored), the page can show **live** readings and a **server-generated** recommendation.
- You can pass a **sensor ID** in the URL:
  `soil-dashboard.html?sensor_id=YOUR-SENSOR-UUID`
  so the 7-day chart uses that sensor's data.

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7. Language (English / Swahili)

- The main web app may offer an **English / Swahili** toggle (e.g. in the header or menu).
- Switch to **Swahili** to see labels and messages in Kiswahili.
- The **soil moisture dashboard page** shows recommendations in **Swahili** by default; the main dashboard may show alerts and labels in the selected language.

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8. Sending the recommendation by SMS

1. On the **soil moisture dashboard** page, read the **irrigation recommendation** (Swahili text).
2. Click **Tuma SMS** (Send SMS).
3. The text is **copied** and your device may open the **SMS app** with the message in the body.
4. Choose the recipient (e.g. farm worker) and send the SMS.

Note: "Tuma SMS" only prepares the message; it does not send it from the server. Actual sending uses your phone's SMS. For automatic SMS from the system (e.g. alerts), your administrator must configure Africa's Talking or another SMS provider.

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9. Tips for farmers

- **Check the dashboard** regularly, especially in dry seasons, to see if irrigation is needed.
- **Add sensors** in different parts of the farm (e.g. per block or crop) for better advice.
- **Keep your phone number** up to date in your profile so you receive alerts.

- **Use the soil dashboard page** on a phone and add it to the home screen for quick, offline-capable access.
- **Share the recommendation** with workers using the “Tuma SMS” button when you want them to irrigate or wait.

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10. Getting help

- **Forgot password** – Contact your system administrator.
- **Sensors not updating** – Ensure the device is powered and connected (Wi-Fi/cellular) and that the sensor ID in the device matches the one in the dashboard.
- **No SMS received** – Confirm with the administrator that SMS is enabled and your phone number is correct and verified.
- **Page not loading offline** – Open the soil dashboard page once while online so it can cache; then try again without internet.

End of User Manual