

Farm Management System

Crop Management Module

Crop Management Module Structure

Primary Sections:

1. **Dashboard**
2. **Plot/Field Management**
3. **Scheduling Events/Reminders**
4. **Yield and Performance Report**

Visual Hierarchy Diagram

Below is a suggested outline for a hierarchy diagram of the **Crop Management Module**:

- **Crop Management Module**
 - Dashboard
 - Plot Overview
 - Current Crop Details
 - Cost Overview
 - Monitoring and Alerts
 - Yield Breakdown
 - Financial Outcome
 - Farmer Satisfaction
 - Plot/Field Management
 - Land/Plot Record
 - Crop Record
 - Cost Tracking
 - Land Preparation
 - Seed Selection and Sowing
 - Irrigation
 - Fertilization
 - Weed Control/Monitoring
 - Pest and Disease Management
 - Harvesting
 - Post-Harvest Processing
 - Result Summary
 - Yield Breakdown
 - Financial Outcome
 - Scheduling Events/Reminders
 - Report Generation

Explanation:

1. Dashboard

The Dashboard serves as an overview of the current status of a selected plot, providing real-time insights into crop performance and updates.

- **1. Plot Overview**

Displays essential plot details including:

- **Plot Name:** Name of the plot.
- **Location:** Geographical area where the plot is located.
- **Total Area:** Total land area in acres or kanal.
- **Land Type:** Specifies if the plot is **Irrigated (Nehri)** or **Rainfed (Barani)**.

- **2. Current Crop Details**

Presents information about the crop currently planted:

- **Crop Name:** The type of crop (e.g., wheat, rice).
- **Seed Quantity:** Total amount of seeds sown in the plot.
- **Sowing Date:** Date the seeds were planted.
- **Crop Stage:** Current stage of the crop; can be updated to reflect stages like **Initial**, **Growing**, or **Harvesting**.

- **3. Cost Overview**

Summarizes financial details on expenditures:

- **Total Cost:** Cumulative cost incurred so far.
- **Cost Breakdown:** Detailed view of cost categories (e.g., labor, materials).

- **4. Monitoring & Alerts**

Tracks plot conditions and sends alerts for timely interventions:

- **Alerts:** New updates on plot conditions.
- **Statistics:** Graphical analysis of costs and activities.

- **5. Yield Breakdown Summary**

Shows crop yield details once the crop is harvested:

- **Total Yield Quantity:** Amount of crop produced.
- **Yield Grade:** Quality assessment (e.g., Good, Poor).
- **Unit of Measure:** Custom unit based on farmer preference (kg, tons, etc.).
- **Expected Yield:** Projected yield amount.
- **Yield Satisfaction:** Farmer's assessment (Yes/No).
- **Notes:** Additional comments on yield.

- **6. Financial Outcome**

Financial summary after harvesting:

- **Total Production Cost:** Sum of all expenses.
- **Total Sell Revenue:** Total income from the crop.
- **Net Profit:** Profit after deducting expenses.
- **Notes:** Additional comments on financial outcome.

- **7. Satisfaction Level**

Farmer's overall satisfaction with the crop, recorded after harvest.

Note: The last three sections (Yield Breakdown Summary, Financial Outcome, Satisfaction Level) are only visible once the crop cycle is completed.

2. Plot/Field Management

This section manages individual plot records within the farmer's total land area.

- **A. Land Record**

Basic plot information entry:

- **Plot Name:** Unique name or ID of the plot.
- **Area:** Plot area in acres or kanal.
- **Location:** Specific plot location.
- **Soil Type:** Type of soil (e.g., Sandy, Clay).
- **Land Type:** **Irrigated (Nehri)** or **Rainfed (Barani)**.
- **Land Suitability:** Assessment of plot suitability for different crops.
- **Notes:** Additional comments or observations.

- **B. Crop Record**

Crop details specific to each plot:

- **Season:** Growing season (e.g., Rabi, Kharif).
- **Crop Type:** Category (Vegetable, Fruit, Cereal, etc.).
- **Crop Name:** Specific name of the crop (e.g., wheat).
- **Duration:** Expected growing period.
- **Notes:** Additional information.

- **C. Cost Tracking**

Allows tracking of expenses in each farming stage with tailored categories:

- **Land Preparation**
 - **Equipment Cost:** Cost of tools used for soil preparation.
 - **Material Cost:** Any materials required during this stage.
 - **Labor Cost:** Wages for workers involved in land preparation.
 - **Transport Cost:** Cost of moving materials or equipment.
 - **Miscellaneous Cost:** Additional expenses, if any.
 - **Date:** Date when the land preparation was performed.
- **Seed Selection and Sowing**
 - **Seed Type:** Type of seed used.
 - **Seed Quality:** Quality grade of the seeds.
 - **Seed Quantity:** Amount of seed used.
 - **Unit of Measure:** Unit for the seed quantity (e.g., kg, lbs).
 - **Equipment Cost:** Cost of tools used for sowing.
 - **Seed Cost:** Cost of seeds (instead of Material Cost).
 - **Labor Cost:** Wages for workers involved in seed selection and sowing.

- Transport Cost: Cost of moving seeds and equipment.
- Miscellaneous Cost: Additional expenses, if any.
- Date: Date when sowing was performed.
- **Irrigation**
 - Equipment Cost: Cost of tools used for irrigation.
 - Material Cost: Any materials required during this stage.
 - Labor Cost: Wages for workers involved in irrigation.
 - Transport Cost: Cost of moving water or irrigation equipment.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when the irrigation task was performed.
- **Fertilization**
 - Fertilizer Type: Type of fertilizer used.
 - Fertilizer Brand: Brand of the fertilizer.
 - Fertilizer Quantity: Amount of fertilizer applied.
 - Unit of Measure: Unit for the fertilizer quantity (e.g., kg, lbs).
 - Equipment Cost: Cost of tools used for fertilization.
 - Fertilizer Cost: Cost of fertilizer (instead of Material Cost).
 - Labor Cost: Wages for workers involved in fertilization.
 - Transport Cost: Cost of moving fertilizers and equipment.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when fertilization was performed.
- **Weed Control/Monitoring**
 - Equipment Cost: Cost of tools used for weed control.
 - Material Cost: Any materials required during this stage.
 - Labor Cost: Wages for workers involved in weed control.
 - Transport Cost: Cost of moving equipment or materials.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when the weed control task was performed.
- **Pest and Disease Management**
 - Pest Type/Name: Name or type of pest being managed.
 - Spray/Medicine Name: Name of the pesticide or medicine used.
 - Spray/Medicine Quantity: Amount of pesticide or medicine applied.
 - Unit of Measure: Unit for the quantity (e.g., liters, ml).
 - Equipment Cost: Cost of tools used for pest management.
 - Spray/Medicine Cost: Cost of spray or medicine (instead of Material Cost).
 - Labor Cost: Wages for workers involved in pest management.
 - Transport Cost: Cost of moving spray/medicine and equipment.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when pest management was performed.

- **Harvesting**
 - Harvest Method: Method used for harvesting (e.g., manual, machinery).
 - Harvested Crop Quantity: Amount of crop harvested.
 - Unit of Measure: Unit for the crop quantity (e.g., kg, tons).
 - Equipment Cost: Cost of tools used for harvesting.
 - Harvesting Cost: Direct cost of harvesting (instead of Material Cost).
 - Labor Cost: Wages for workers involved in harvesting.
 - Transport Cost: Cost of transporting harvested crops.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when harvesting was performed.
 - **Post-Harvesting**
 - Processing Method: Type of processing done (e.g., drying, cleaning, storage, selling).
 - Equipment Cost: Cost of tools used for post-harvest processing.
 - Post-Harvest Cost: Cost specific to post-harvest processing (instead of Material Cost).
 - Labor Cost: Wages for workers involved in post-harvest processing.
 - Transport Cost: Cost of transporting post-harvest materials.
 - Miscellaneous Cost: Additional expenses, if any.
 - Date: Date when post-harvest processing was performed.
 - **D. Result Summary**

Summary data of the crop's lifecycle:

 - **Yield Breakdown Summary:**
 - **Total Yield Quantity:** Amount produced.
 - **Yield Grade:** Quality rating.
 - **Expected Yield:** Projected production.
 - **Satisfaction:** Farmer's satisfaction.
 - **Notes:** Additional observations.
 - **Financial Outcome:**
 - **Total Production Cost:** Sum of all expenses.
 - **Sell Revenue:** Total income.
 - **Net Profit:** Profit earned.
 - **Notes:** Final remarks.
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3. Scheduling Events/Reminders

Schedule and manage key activities for the plot to stay on track:

- **Plot Selection:** Plot/area for the event.
- **Activity Type:** Selected task for notification (e.g., irrigation, fertilization).
- **Date & Time:** Scheduled time for the event.
- **Notes:** Any additional instructions or descriptions.

4. Yield and Performance Report

Generates an in-depth report on the crop's overall performance:

❖ Cover Page

- **Farm Name** (کھیت کا نام): The name or ID of the farm.
- **Plot Name** (پلاٹ کا نام): The specific plot this report covers.
- **Date of Report Generation** (رپورٹ کی تیاری کی تاریخ): Automatic generation date.
- **Season and Year** (موسم اور سال): For example, Spring 2024 or Winter 2024.

❖ Crop Overview

- **Crop Name** (فصل کا نام): Name of the crop, e.g., Wheat.
- **Land Type** (زمین کی قسم): Specifies the irrigation type, such as **Barani (Rainfed)** or **Nahri (Canal)**.
- **Total Area of Plot** (کل رقبہ): Size of the plot, measured in acres, hectares, etc.
- **Crop Cycle Duration** (فصل کا دورانیہ): Total period from sowing to harvest, in days or months.
- **Expected Yield** (تخمینی پیداوار) vs. **Actual Yield** (حقیقی پیداوار):
 - Quantities (kg, tons, etc.) to compare expected and actual production.
 - Quality Grades: Categorization of the crop quality.

❖ Growth Stage Summary

This section provides an overview of each stage completed in the crop lifecycle, with details on costs, dates, and inputs.

- **Land Preparation**
 - **Start and End Date** (شروع اور ختم ہونے کی تاریخ): Duration of land preparation.
 - **Cost** (لاگت): Expenses for labor, equipment, and other resources involved in preparing the land.
- **Seed Selection and Sowing**
 - **Seed Type and Quality** (بیج کی قسم اور معیار): Type and quality grade of seeds selected.
 - **Quantity and Cost** (مقدار اور لاگت): Amount of seeds sown and associated costs.
- **Irrigation**
 - **Number of Irrigation Cycles** (آبیاشی کے دور): Total irrigation rounds conducted.
 - **Water Source and Cost** (پانی کا ذریعہ اور لاگت): Source of water (e.g., canal, well) and expenses for irrigation.
- **Fertilization**

- **Fertilizer Type and Amount** (کھاد کی قسم اور مقدار): Types of fertilizers used and quantities applied.
 - **Cost of Fertilizers** (کھاد کی لاگت): Total cost for all fertilizer applications.
- **Pest and Disease Management**
 - **Treatments Used** (علاج): Methods and chemicals employed to manage pests and diseases.
 - **Cost** (لاگت): Expenses associated with pest and disease control.
- **Harvesting**
 - **Harvest Method** (طریقہ کار): The technique used, such as **Manual** or **Machinery**.
 - **Labor and Equipment Costs** (مزدوری اور آلات کی لاگت): Expenses related to labor and equipment for harvesting.
- **Post-Harvest Processing**
 - **Storage and Processing Costs** (ذخیرہ اور پراسیسنگ لاگت): Costs incurred for storing and processing harvested crops.

❖ Financial Summary

Provides a comprehensive overview of financial outcomes for the crop lifecycle.

- **Total Costs Incurred** (کل لاگت): Summation of all expenses from each stage.
- **Estimated Revenue** (تخمینی آمدنی): Projected revenue based on market rates.
- **Final Profit or Loss** (آخری نفع یا نقصان): Net profit or loss, calculated as the difference between revenue and total costs.

❖ Crop Health Monitoring Insights

Insights on crop health and management practices throughout the growth period.

- **Irrigation Efficiency** (آبیاری کی کارکردگی): Tracks water usage efficiency and patterns.
- **Fertilization and Soil Health** (کھاد اور مٹی کی صحت): Overview of nutrient levels, types of fertilizers used, and feedback on soil health.
- **Pest and Disease Incidents** (کھڑوں اور بیماریوں کے واقعات): Record of any pest outbreaks, disease occurrences, and treatment measures.

❖ Overall Satisfaction & Recommendations

Provides an opportunity for farmer feedback and suggestions for future crop improvement.

- **Farmer's Rating** (کسان کی درجہ بندی): Space for the farmer to provide an overall satisfaction rating for the crop cycle.
 - **Recommendations** (سفارشات): Personalized suggestions based on the current report, such as adjustments for soil quality, fertilization timing, or crop rotation practices to improve yield in future cycles.
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Livestock Management Module

Livestock Management Module Structure

1. Dashboard

- Livestock Overview
- Current Livestock Details
- Cost Overview
- Monitoring & Alerts
- Production Breakdown

2. Livestock Section

- Animal Registration
- Monitoring
 - Health Monitoring
 - Feeding Monitoring
 - Milking Monitoring
 - Growth and Weight Monitoring
- Expenses
- Production
- Losses
- Farm Records

3. Scheduled Activities / Reminders & Alerts

Explanation

Dashboard

1. Livestock Overview

This section provides a summary of the total livestock on the farm.

- **Total Livestock Count:** Total number of animals on the farm.
- **Types of Livestock:** Breakdown by species (e.g., cows, buffalo, sheep).
- **Health Status:** Overview of livestock health (Healthy, Sick, In Treatment).
- **Location Distribution:** Distribution of livestock across different locations or farms.

2. Current Livestock Details

Displays essential details about the livestock categories.

- **Cows:** Current count and health status.
- **Buffalo:** Current count and health status.
- **Sheep:** Current count and health status.
- **Age Distribution:** Age distribution of livestock within each category.

3. Cost Overview

Summarizes financial details regarding livestock management.

- **Total Costs:** Cumulative costs incurred so far.
- **Cost Breakdown:** Detailed view of cost categories (e.g., feed, veterinary care).

4. Monitoring & Alerts

Tracks conditions of the livestock and sends alerts for timely interventions.

- **Alerts:** Notifications about livestock health or management needs.
- **Statistics:** Graphical analysis of costs and activities.

5. Production Breakdown

Shows production details related to livestock.

- **Total Milk Production:** Amount of milk produced.
- **Total Sold Animals:** Number of animals sold in the reporting period.
- **Total Sold Price:** Total revenue from sold animals.

Livestock Section

• Animal Registration (جانوروں کا اندراج)

• Input Fields (14 entries):

- ID (شناختی نمبر)
- Sex (جنس)
- Weight (وزن)
- Breed (نسل)
- Age (عمر)
- Health Status (صحت کی حالت)
- Symptoms (علامات)
- Medicine Prescribed (ادویات تجویز کردہ)
- Feed Type (خوراک کی قسم)
- Feed Quantity/Unit (خوراک کی مقدار / اکائی)
- Date (تاریخ) (Mandatory)
- *Description (تفصیل)
- Milking Quantity/Unit (دودھ کی مقدار / اکائی)
- Status (حالت)
 - Options: Alive (زندہ), Sold (بیچا گیا), Dead (مردہ)

• Monitoring (نگرانی)

• Sub-sections:

- **Health Monitoring (صحت کی نگرانی)**
 - Check Date (معائنہ کی تاریخ) (Mandatory)
 - Vet Name (ویٹرنری کا نام)
 - Health Issues Recorded (صحت کے مسائل کا ریکارڈ)
- **Feeding Monitoring (خوراک کی نگرانی)**
 - Feed Log Date (خوراک کے ریکارڈ کی تاریخ) (Mandatory)
 - Daily Feed Quantity (روزانہ کی خوراک کی مقدار)
 - Feeding Schedule (خوراک کا شیڈول)
- **Milking Monitoring (دودھ دوہنے کی نگرانی)**
 - Milking Date (دودھ دوہنے کی تاریخ) (Mandatory)
 - Milking Method (دودھ دوہنے کا طریقہ)
 - Milk Quality Check (دودھ کی معیار کی جانچ)
- **Growth and Weight Monitoring (نشوونما اور وزن کی نگرانی)**
 - Weight Measurement Date (وزن کی پیمائش کی تاریخ) (Mandatory)
 - Current Weight (موجودہ وزن)
 - Growth Rate (نشوونما کی شرح)
- **Expenses (اخراجات)**
 - **Cost Categories and Input Fields:**
 - Animal Acquisition Costs (جانوروں کی خریداری کے اخراجات)
 - Purchase Price (خریداری کی قیمت) (Mandatory)
 - Purchase Date (خریداری کی تاریخ) (Mandatory)
 - Transportation Costs (نقل و حمل کے اخراجات)
 - Health and Veterinary Costs (صحت اور ویٹرنری کے اخراجات)
 - Veterinary Visit Date (ویٹرنری کی ملاقات کی تاریخ) (Mandatory)
 - Vaccination Fees (ویکسینیشن کی فیس) (Mandatory)
 - Medication Costs (ادویات کے اخراجات) (Mandatory)
 - Additional Treatment Costs (مزید علاج کے اخراجات)
 - Feeding Costs (خوراک کے اخراجات)
 - Feed Purchase Date (خوراک کی خریداری کی تاریخ) (Mandatory)
 - Feed Quantity Purchased (خریدی گئی خوراک کی مقدار) (Mandatory)
 - Cost of Feed (خوراک کی قیمت) (Mandatory)
 - Housing and Maintenance Costs (رہائش اور دیکھ بھال کے اخراجات)
 - Maintenance Date (دیکھ بھال کی تاریخ) (Mandatory)
 - Cost of Maintenance (دیکھ بھال کے اخراجات) (Mandatory)
 - Repair Costs (مرمت کے اخراجات)
 - Labor Costs (مزدوری کے اخراجات)
 - Employee Name (ملازم کا نام) (Mandatory)
 - Position (عہدہ) (Mandatory)
 - Salary (تنخواہ) (Mandatory)
 - Payment Date (اداگی کی تاریخ) (Mandatory)
 - Overtime Pay (اضافی تنخواہ)

- Bonuses (انعامات)
- Transportation Costs (نقل و حمل کے اخراجات) (Mandatory)
 - Transport Date (نقل و حمل کی تاریخ) (Mandatory)
 - Transport Cost (نقل و حمل کی قیمت) (Mandatory)
 - Distance Travelled (سفر کی دوری)
- Miscellaneous Costs (متفرق اخراجات) (Mandatory)
 - Expense Description (اخراجات کی تفصیل) (Mandatory)
 - Amount (رقم) (Mandatory)
 - Expense Date (اخراجات کی تاریخ) (Mandatory)

• Production (پیداوار)

• Categories and Input Fields:

- Milk Production (دودھ کی پیداوار)
 - Total Milk Yield (مکمل دودھ کی پیداوار) (Mandatory)
 - Quality Testing Results (معیار کی جانچ کے نتائج)
- Meat Production (گوشت کی پیداوار)
 - Number of Animals Slaughtered (ذبح کیے گئے جانوروں کی تعداد) (Mandatory)
 - Weight of Meat (گوشت کا وزن) (Mandatory)
- Other Products (دیگر پیداوار)
 - Type of Product (پیداوار کی قسم) (Mandatory)
 - Quantity Produced (پیداوار کی مقدار) (Mandatory)
- Sales Tracking (فروخت کی نگرانی)
 - Sale Date (فروخت کی تاریخ) (Mandatory)
 - Quantity Sold (بیچی گئی مقدار) (Mandatory)
 - Sale Price (فروخت کی قیمت) (Mandatory)

• Losses (نقصانات)

• Input Fields:

- Loss Type (نقصان کی قسم) (Mandatory)
 - Options: Lost (گم), Died (مردہ), Misplaced (غلط جگہ پر)
- Animal ID (جانور کا شناختی نمبر) (Mandatory)
- Date of Loss (نقصان کی تاریخ) (Mandatory)
- Description of Incident (واقعی کی تفصیل) (Mandatory)
- Estimated Value (تخمینی قیمت) (Mandatory)

• Farm Records (فارم ریکارڈ)

• Input Fields:

- Farm Name (فارم کا نام)
- Area (علاقہ)
- Location (مقام)
- Total Livestock Count (کل جانوروں کی تعداد)
- Health Records Summary (صحت کا ریکارڈ خلاصہ)

Scheduled Activities / Reminders & Alerts

Keep track of important livestock care activities with scheduled notifications.

Input Fields:

1. **Event Type**
Options: Health Check, Vaccination, Feeding, Milking, Cleaning, Maintenance.
2. **Date of Event**
Scheduled date. *Mandatory*
3. **Time**
Specific time for the event.
4. **Assigned Staff**
Staff responsible for the activity.
5. **Notification Type**
Options: Immediate, Day Before, Weekly, Custom.
6. **Description**
Additional instructions or notes.

Resources Management Module

Resource Management Hierarchical Structure

1. **Resource Management**
 - **1.1 Resource Registration**
 - **1.1.1 Human Resources**
 - **Input Fields:**
 - Resource Type: Dropdown selection (e.g., Labor, Veterinary Services)
 - Worker Name: Text (name of worker)
 - Role/Position: Text (e.g., farmer, vet)
 - Total Cost: Number in PKR
 - Work Start Date: Date
 - Work End Date: Date
 - Notes: Text (any additional information)
 - **1.1.2 Other Resources**
 - **Input Fields:**
 - Resource Type: Dropdown selection (choose from: Seeds, Fertilizer, Water, Feeds, Equipment, Vehicles, Storage Facilities, Money, Others)
 - Quantity: Number (e.g., number of vehicles or amount of money)

- Unit: Dropdown selection (e.g., units for equipment, PKR for money)
 - Total Cost: Auto-calculated (Quantity × Cost per Unit)
 - Notes: Text (any additional information)
 - **1.2 Resource Usage Tracking**
 - **Input Fields:**
 - Resource Type: Dropdown selection
 - Quantity Used: Number (amount used)
 - Remaining Quantity: Auto-calculated based on initial quantity minus quantity used
 - Usage Purpose: Text (e.g., planting, feeding, etc.)
 - Date of Usage: Date
 - Notes: Text (any additional details)
 - **1.3 Maintenance and Repairs**
 - **Input Fields:**
 - Resource Type: Dropdown selection
 - Maintenance Type: Text (e.g., repair, servicing)
 - Cost of Maintenance: Number (cost incurred)
 - Date of Maintenance: Date
 - Notes: Text (details about the maintenance performed)
 - **1.4 Selling Resources**
 - **Input Fields:**
 - Resource Type: Dropdown selection
 - Quantity Sold: Number (amount sold)
 - Sale Price per Unit: Number (price received)
 - Total Sale Price: Auto-calculated (Quantity Sold × Sale Price per Unit)
 - Date of Sale: Date
 - Notes: Text (details about the sale)
- 2. **Dashboard Overview**
 - **2.1 Resource Overview**
 - Human Resources Overview
 - Equipment and Vehicles
 - Material Resources
 - **2.2 Maintenance and Repair Summary**
 - **2.3 Budget Summary**
 - **2.4 Resource Status & Alerts**
- 3. **Reminder/Alerts**
 - **Input Fields:**
 - Resource Type: Dropdown Selection (e.g., Seeds, Fertilizer, Water, Feeds, Equipment, Vehicles, Money, Others)
 - Alert Type: Dropdown Selection (e.g., Low Inventory, Repair Needed, Expiry Alert)
 - Threshold Value / Expiry Date / Repair Date: Number and Date inputs
 - Alert Timeframe: Number of Days in Advance
 - Frequency of Reminder: Dropdown (e.g., daily, weekly, monthly)
 - Notes: Text (optional field for additional details)
 - Enable/Disable and Edit Reminder: Checkbox or Toggle and Edit Button

4. Report Generation

- 4.1 Report Overview
- 4.2 Resource Summary by Type
 - Human Resources
 - Other Resources
- 4.3 Resource Usage & Maintenance Summary
- 4.4 Overall Observations

Explanation:

Managing Resources

Objective: Efficiently record, track, maintain, and manage resources (human and material) for optimized farm operations.

1. Resource Registration

Action: Record the details of human and other resources.

Human Resources

- **Resource Type:** Dropdown selection (e.g., Labor, Veterinary Services)
- **Worker Name:** Text (name of worker)
- **Role/Position:** Text (e.g., farmer, vet)
- **Total Cost:** Number in PKR
- **Work Start Date:** Date
- **Work End Date:** Date
- **Notes:** Text (any additional information)

Other Resources

- **Options:**
 - Seeds
 - Fertilizer
 - Water
 - Feeds (Type like wheat, rice, or others)
 - Equipment (e.g., tractor, milking machine)
 - Vehicles (e.g., truck, tractor for transportation)
 - Storage Facilities
 - Money
 - Others (with a text input field)
- **Input Fields:**
 - **Resource Type:** Dropdown selection (choose from above)
 - **Quantity:** Number (e.g., number of vehicles or amount of money)
 - **Unit:** Dropdown selection (e.g., units for equipment, PKR for money)
 - **Total Cost:** Auto-calculated (Quantity × Cost per Unit)
 - **Notes:** Text (any additional information)

2. Resource Usage Tracking

Action: Track the consumption or use of each resource over time.

Input Fields:

- **Resource Type:** Dropdown selection
- **Quantity Used:** Number (amount used)
- **Remaining Quantity:** Auto-calculated based on initial quantity minus quantity used
- **Usage Purpose:** Text (e.g., planting, feeding, etc.)
- **Date of Usage:** Date
- **Notes:** Text (any additional details)

3. Maintenance and Repairs

Action: Record any maintenance, repairs, or servicing required for equipment or facilities.

Input Fields:

- **Resource Type:** Dropdown selection
- **Maintenance Type:** Text (e.g., repair, servicing)
- **Cost of Maintenance:** Number (cost incurred)
- **Date of Maintenance:** Date
- **Notes:** Text (details about the maintenance performed)

4. Selling Resources

Action: Manage the sale of any resources (e.g., surplus equipment, livestock, etc.).

Input Fields:

- **Resource Type:** Dropdown selection
- **Quantity Sold:** Number (amount sold)
- **Sale Price per Unit:** Number (price received)
- **Total Sale Price:** Auto-calculated (Quantity Sold × Sale Price per Unit)
- **Date of Sale:** Date
- **Notes:** Text (details about the sale)

Dashboard Overview

1. Resource Overview

Objective: Show total resources with quantity tracking and financials, based on their type.

Human Resources Overview

- **Total Workers:** Display count of all registered workers.
- **Total Labor Cost:** Sum of all Total Cost fields for human resources, representing wages or salaries.

Equipment and Vehicles

- **Inventory List:** List all equipment and vehicles registered in the system (e.g., tractor, milking machine, transportation vehicles).
- **Quantity Available:** Display total count for each type of equipment or vehicle.
- **Maintenance Cost Summary:** Show cumulative cost of maintenance activities recorded for each equipment type.

Material Resources (Seeds, Fertilizer, Water, Feeds)

- **Current Quantity:** Display remaining quantity for each resource type (e.g., Seeds, Fertilizer).
- **Total Cost to Date:** Show total cost incurred for each type from the registration records.
- **Low Inventory Alert:** Display if remaining quantity falls below threshold for each material resource.

2. Maintenance and Repair Summary

Objective: Show all resources that have maintenance needs or recent maintenance history.

- **Scheduled Maintenance:**
 - **Resource Type:** Name of resource scheduled for maintenance.
 - **Maintenance Due Date:** Date when maintenance is scheduled.
 - **Maintenance Type:** Type of maintenance required (e.g., repair, servicing).
- **Recent Repairs:**
 - **Resource Type:** Name of resource recently repaired or serviced.
 - **Cost of Repair:** Cost of recent maintenance activities.
 - **Date of Maintenance:** Date on which the repair was completed.
- **Upcoming Maintenance Alerts:**
 - Resources requiring immediate or urgent maintenance, highlighted if due soon or overdue.

3. Budget Summary

Objective: Track budget and spending across different resources.

- **Budget Allocation vs. Spending**
 - **Resource Type:** Dropdown selection of resource categories (e.g., seeds, equipment, human resources).
 - **Initial Budget:** Allocated budget for each resource type.
 - **Amount Spent:** Total amount spent to date on each resource type.
 - **Remaining Budget:** Auto-calculated (Initial Budget - Amount Spent) for each resource type.

- **Overspending Alerts:**
 - Highlight resource categories where Amount Spent has exceeded the Initial Budget.

4. Resource Status & Alerts

Objective: Provide real-time alerts and reminders for low stock, expiring resources, and maintenance needs.

- **Low Inventory Alerts:**
 - **Resource Type:** Name of resource running low (based on minimum quantity threshold).
 - **Remaining Quantity:** Display current quantity available.
 - **Suggested Reorder Action:** Prompt if quantity is critically low.
- **Upcoming Maintenance Reminders:**
 - **Resource Type:** Name of resource with upcoming scheduled maintenance.
 - **Due Date:** Date maintenance is due.
 - **Cost Estimate:** Display anticipated cost if applicable.
- **Resource Expiry Alerts:**
 - **Perishable Resources:** Show any perishable items nearing expiration.
 - **Expiry Date:** Date the resource is expected to expire or become unusable.
 - **Suggested Action:** Suggested action, e.g., “Use by XX date” or “Reorder.”

Reminders/Alerts

Reminder/Alerts Settings

- **Resource Type:**
 - Dropdown Selection: Choose from list (e.g., Seeds, Fertilizer, Water, Feeds, Equipment, Vehicles, Money, Others).
- **Alert Type:**
 - Dropdown Selection: Select the type of alert, such as:
 - Low Inventory: Notifies when stock is low.
 - Repair Needed: Indicates the need for maintenance or repairs.
 - Expiry Alert: For perishable items or items with limited shelf life.
- **Threshold Value / Expiry Date / Repair Date:**
 - **Number (Threshold):** User-defined threshold for low inventory (e.g., 10 kg for seeds).
 - **Date:** For Expiry Alerts and scheduled Repair dates.
- **Alert Timeframe:**
 - **Number of Days in Advance:** Set how far in advance the reminder should be triggered. Default: 15 days for Expiry Alerts.
- **Frequency of Reminder:**
 - Dropdown: Select how often to remind (e.g., daily, weekly, monthly) until the action is taken or item is replaced.
- **Notes:**
 - **Text:** Optional field for additional details regarding the reminder.

- **Enable/Disable and Edit Reminder:**
 - **Checkbox or Toggle:** To enable or disable specific alerts.
 - **Edit Button:** Allows modifications to reminder settings at any time.

Resource Management Report Format

1. Report Overview

- **Report Period:** Weekly, Monthly, or Yearly.
- **Generated On:** Current date.
- **Total Resources Managed:** Summary count (e.g., total workers, equipment, consumables).

2. Resource Summary by Type

Human Resources

- **Total Workers:** Total count of workers used in the period.
- **Total Cost (PKR):** Sum of salaries or payments for the selected period.
- **Resource Details:**
 - **Worker Name**
 - **Role/Position**
 - **Work Duration** (start and end dates)
 - **Total Cost Incurred**
 - **Notes:** Any additional notes added by the user.

Other Resources

- **Resource Overview:**
 - List of resources categorized (e.g., seeds, water, feeds, equipment, vehicles).
- **Quantities:**
 - **Starting Quantity:** Quantity at the beginning of the period.
 - **Used Quantity:** Quantity consumed within the period.
 - **Remaining Quantity:** Quantity at the end of the period.
- **Total Cost (PKR):** Costs associated with each resource type.
- **Notes:** Additional details per resource.

3. Resource Usage & Maintenance Summary

Usage Tracking

- **Total Amount Used:** Total quantity of each resource consumed.
- **Purpose of Usage:** E.g., feeding, irrigation.
- **Date-Wise Usage Breakdown:** List showing dates and corresponding usage amounts.

Maintenance & Repairs

- **Equipment & Vehicles:**

- **Maintenance Type:** E.g., repair, servicing.
- **Cost Incurred (PKR)**
- **Maintenance Dates:** Date of maintenance and any upcoming schedules.
- **Notes:** Additional maintenance-related details.

4. Overall Observations

- **Resource Efficiency:** Comparison of budget usage and quantities consumed.
- **Suggestions/Actions Needed:** Automatically generated or user-entered notes for improvements or adjustments based on usage patterns and costs.

LLM (Chat Bot)

- **Objective:** Provide farmers with an interactive support tool for querying and decision-making related to crop planning, livestock management, and resource allocation.
- **Features:**
 - **Contextual Response:** Ability to ask questions and receive tailored advice based on current farm data.
 - **Knowledge Areas:** Include crop planning, livestock health checks, resource tracking, and financial management.
 - **Integration with FMS Modules:** Pull relevant data from your system to provide accurate, real-time answers.