

Service Desk for Agriculture

AN INTELLIGENT AGRICULTURAL CALL
CENTER WITH MULTIPLE AGENTS AND
SECURE AUTOMATION

Large agribusinesses, cooperatives, and corporate farms receive hundreds of repetitive calls every day. with several exceeding the mark of 3,000 employees or members.

"My planter has a faulty sensor, what now?"

"I need an urgent agronomic report."

"My fertilizer stock is low."

"I want to know what pest is attacking my corn."

Organization	Sector	No. of Employees	No. of Members/Associates	Note
Coamo	Grains (soy, corn, wheat)	+9,000	+30,000	Largest agro-industrial cooperative in Latin America
Aurora Coop	Meat and dairy	+35,000	+100,000	One of the largest in Brazil
Copersucar	Sugarcane, ethanol	Thousands (exact figures not public)	+1,000 producer associates	Largest sugar and ethanol cooperative in the world
Cocamar	Diversified (soy, corn, coffee)	+3,000	+16,000	Strong presence in Paraná
Sugarcane sector (mills)	Sugarcane, sugar, ethanol	~690,000 direct jobs	—	Average per mill: between 3,000 and 10,000 employees

Problem

Agro Solution



Introducing the **AgroHelpdesk** for Agribusiness and Agriculture, an intelligent service center built on a multi-agent architecture and focused on secure automation, full transparency, and proper scalability.

The platform allows producers, technicians, and collaborators to request any type of support via chat, web, WhatsApp, Teams, or even voice, by sending messages, photos, or audio.



How Its Works

- 01

FieldSense Agent → Identifies the intent of the request (e.g., pest diagnosis, machine failure, input request, technical report).
- 02

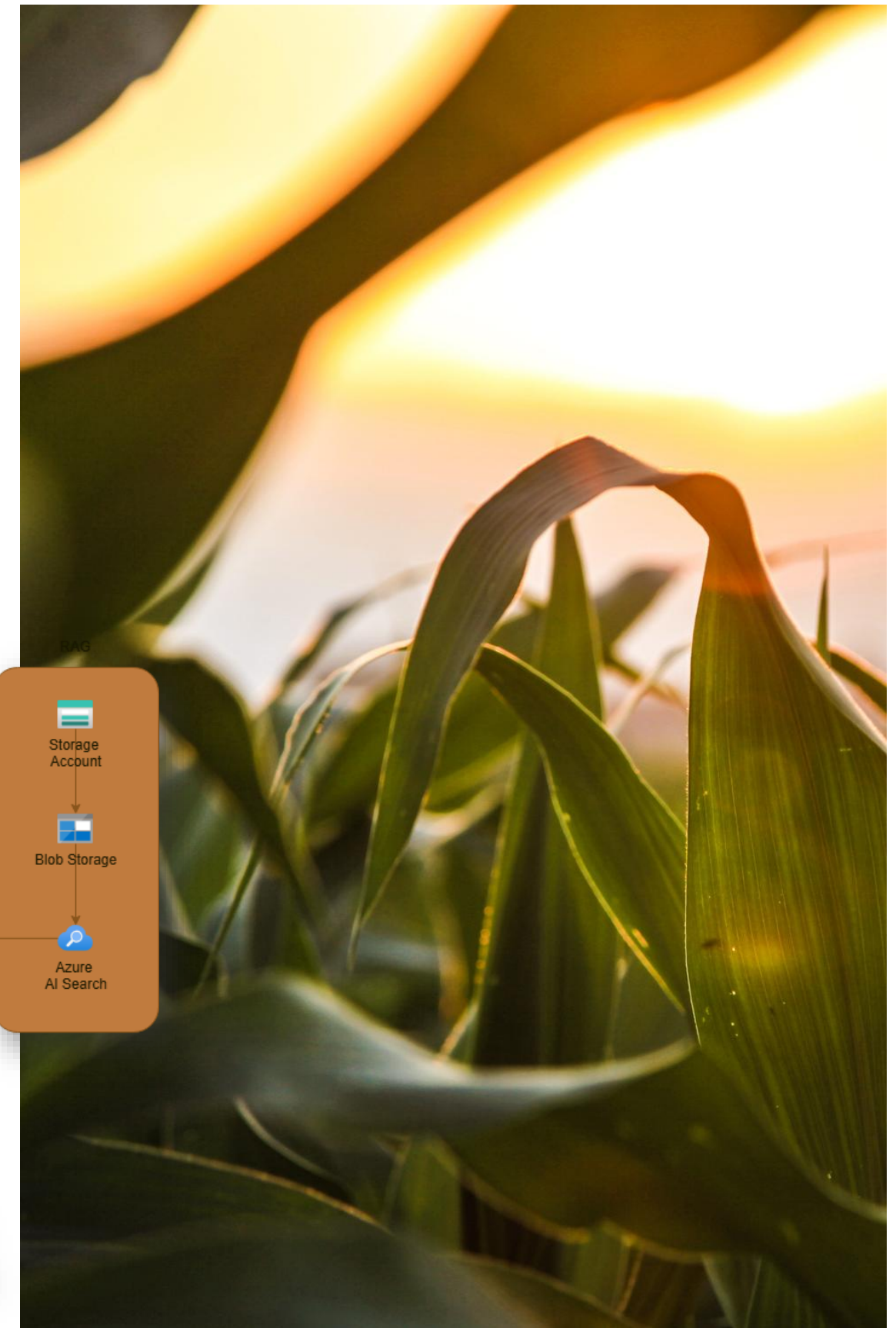
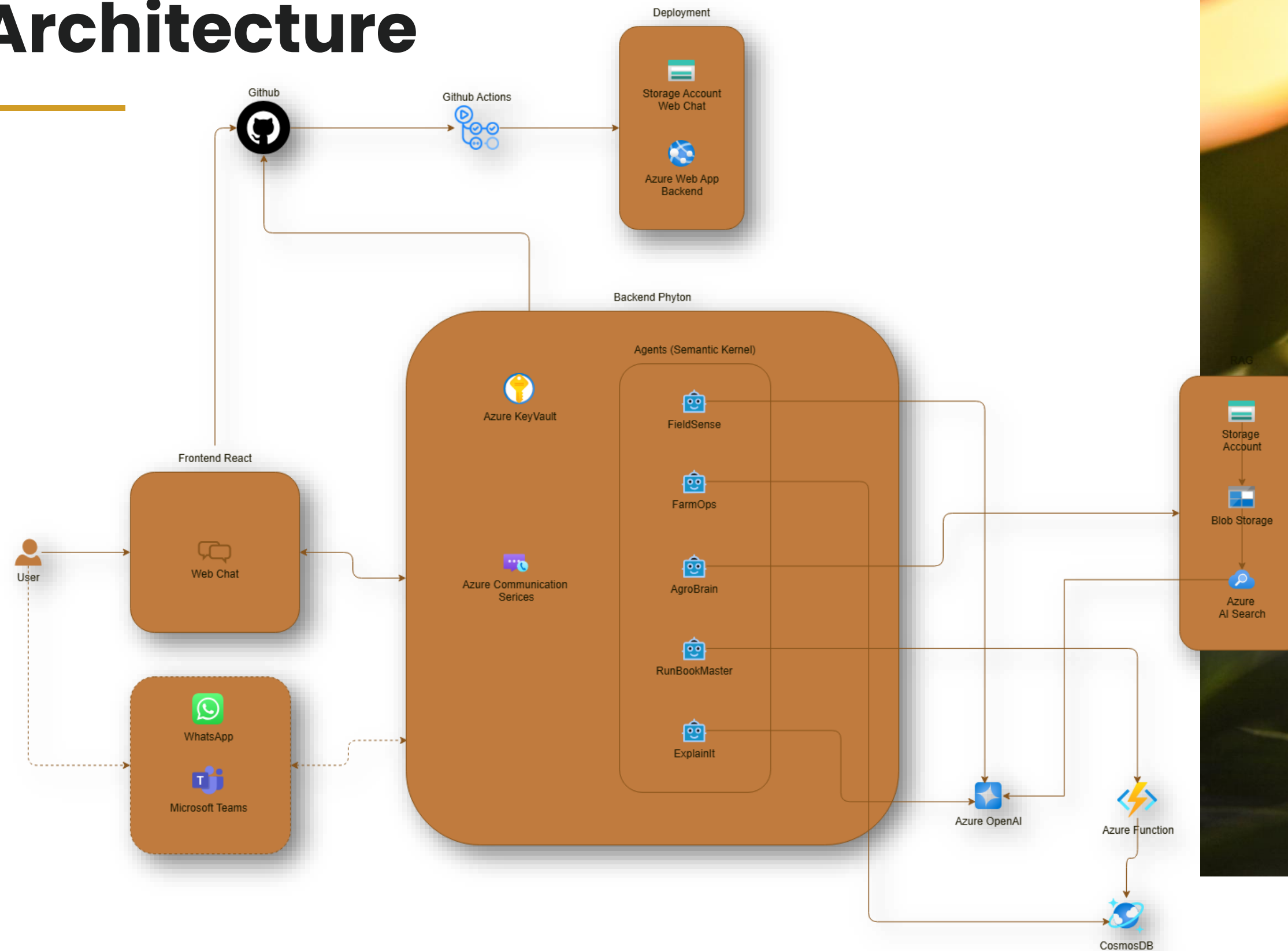
FarmOps Agent → Information collection and context enrichment.
- 03

AgroBrain → Consults phytosanitary bulletins, farm history, IoT sensors, and equipment manuals. (RAG)
- 04

RunbookMaster Agent → Decision-making and automation.
- 04

ExplainIt Agent → Full transparency and audit trails.

Architecture



AgroHelpdesk

Intelligent Farm

Dashboard

Workflow

Metrics

Map

Agents

FieldSense

FarmOps

AgroBrain

RunbookMaster

ExplainIt

Runbooks

Generate Pest Report

Open Urgent Work Order

Stock Inquiry

Pre-fill ART

Compliance Check

LOCATION

Hangemot

SUPERVISOR

Prelates

HP

INTELLIGENT SEQUENCE

Agro AI Orchestration

Coordinated flow between intent, knowledge, decision and response agents.

CURRENT CALL

T-001 · Soybean pest

TOTAL TIME

7.8 seconds

MODEL CONFIDENCE

92% · High

FieldSense

Completed

FarmOps

Completed

AgroBrain

In progress

RunbookMaster

Pending

ExplainIt

Pending

Detailed agent status

FieldSense

Intent Agent

Identifies the client's intention

2.5s

FarmOps

Info Collector

Collects additional information

3.8s

AgroBrain

Knowledge Agent

Analyzes agricultural data and knowledge

In progress...

RunbookMaster

Decision Agent

Executes runbooks and makes decisions

Waiting in queue

ExplainIt

Transparency Agent

Explains the process and provides recommendations

Waiting in queue

LOCATION

Hangemot

SUPERVISOR

Prelates

HP

CROP

Corn

Agent History

field-sense

Mechanical failure detected

06:02:11

farm-ops

Collected telemetry and last service

06:03:33

Chat with Client

Chat Simulation — T-002

Conversation with the client and real-time analysis by agents

I found some caterpillars in plot 22. Can you see what it is?

08:00:00

Sure, can you send me a photo?

08:01:00

[Photo sent]

08:02:00

I analyzed the photo and identified Helicoverpa armigera caterpillar. Since your crop is at V5 stage and the weather allows inspection, I recommend monitoring 3 more points in the plot. Here is the automatic report with current risk and suggested locations to check. I also notified agronomist Maria, who will review the case.

08:05:00

Type your message...

Send

Resolved

Escalate

AgroHelpdesk

Intelligent Farm

Dashboard

Workflow

ACS Chat

Transparency

Metrics

Map

Agents

FieldSense

FarmOps

AgroBrain

RunbookMaster

ExplainIt

Runbooks

LOCATION

Hangemot

SUPERVISOR

Prelates

HP

Plot Map

Visualize plots and their current status

Interactive Map with Leaflet

Active Alerts

T-22

Soybean

Pest Alert

T-12

Corn

Maintenance

T-07

Cotton

Normal

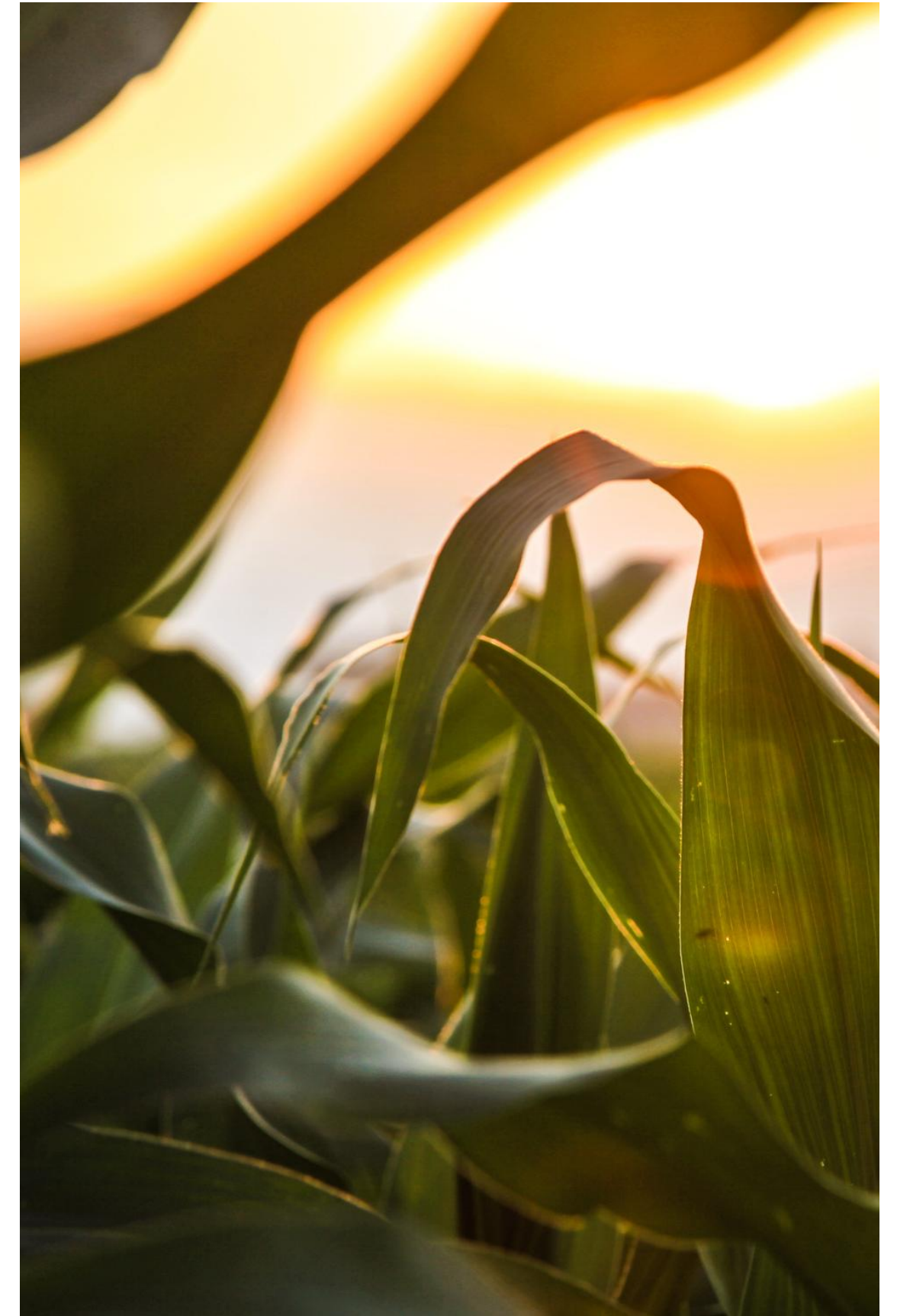
Runbook Sample

ID	Name	Safety	Auto-Execute	Description
RB-01	Generate Pest Report	Safe	Yes	Creates comprehensive pest analysis report
RB-02	Open Urgent Work Order	Critical	No	Opens high-priority maintenance ticket
RB-03	Inventory Check	Safe	Yes	Verifies stock levels and availability
RB-04	Pre-fill ART Report	Critical	No	Prepares regulatory compliance document
RB-05	Compliance Check	Safe	Yes	Validates licenses and environmental permits



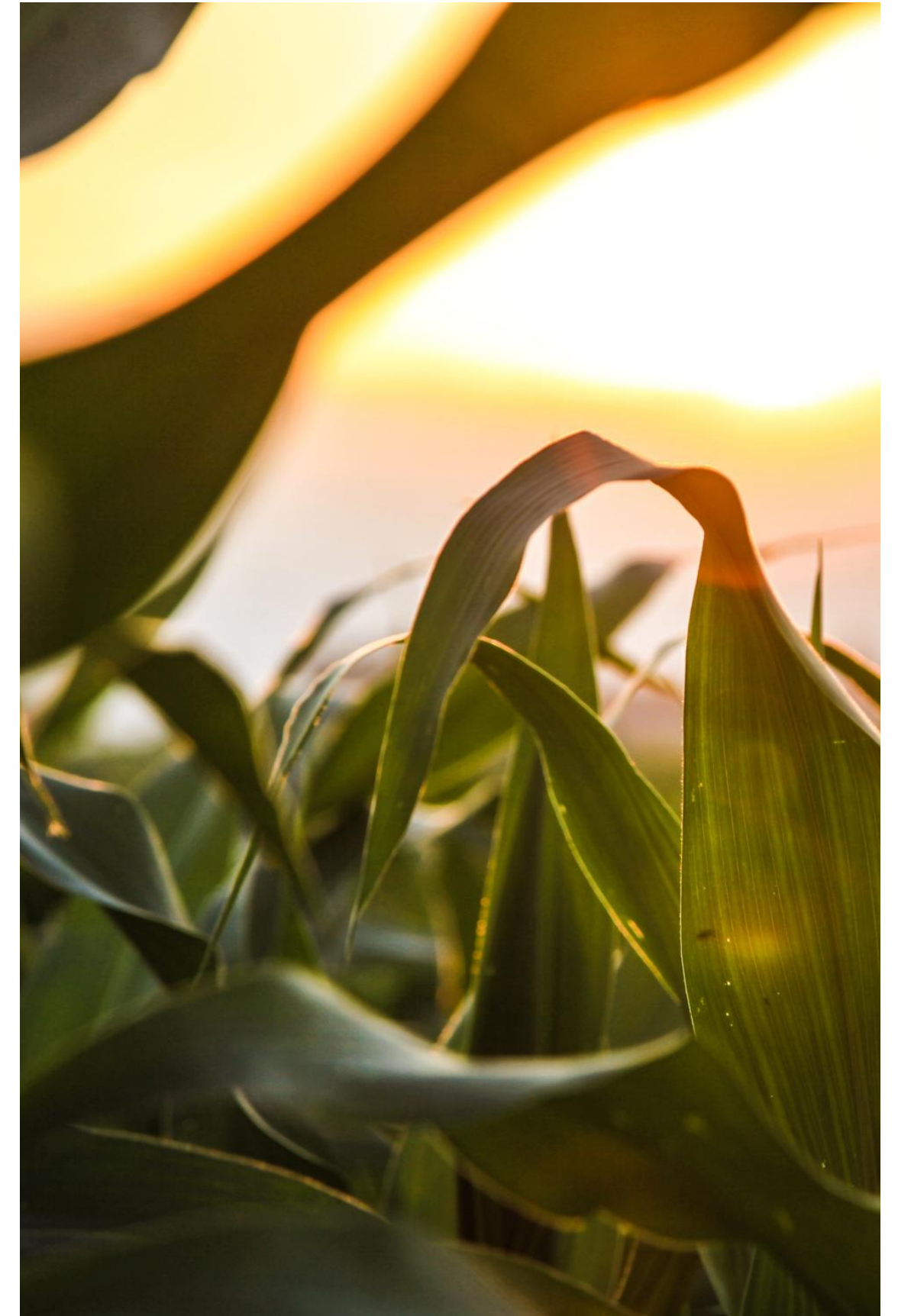
Azure Services

- Azure Communication Services
- Azure Functions
- Azure Key Vault
- Azure OpenAI
- Azure AI Search
- Azure Storage Account
- Blob Storage
- Azure Cosmos DB
- Azure Monitor
- Azure Web App



Responsible AI

- **ExplainIt Agent** → justified decisions
- **Responsible AI Dashboard**
- **Azure Content Safety** on inputs and outputs
- **Human-in-the-loop** for critical actions
- **Risk mitigation policies**





Impact

- Up to 80% reduction in response time
- Automation of repetitive tasks
- Greater operational safety
- Traceable and auditable actions
- Digital, standardized, and scalable



Thank You

A G R O H E L P D E S K