

MonstarX

Product Requirements Document

BASF Agricultural Solutions
Grower App Harmonization Project
Unified Farmer Platform – Asia Pacific

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1. Overview

1.1 User Group

Growers/Farmers (India and Japan initially)

1.2 Problem Statement

- BASF currently has different versions of farmer apps across countries with significant overlaps in functionalities – “AgGenie” in India (farmer loyalty + farm tools) and “Minorasu App” in Japan (farmer loyalty + farm tools).
- Due to country-specific requirements, the apps were developed independently, causing duplicate effort and inconsistent farmer experiences.

1.3 Proposed Solution

The Grower App Harmonization Project aims to unify BASF’s farmer-facing mobile applications across Asia Pacific—primarily India’s AgGenie and Japan’s Minorasu—into one regional platform that delivers a consistent, efficient, and scalable digital experience for growers.

1.4 Value Hypothesis

- Digital solutions that help farmers better manage their farms by providing personalized recommendations and relevant market data like weather forecast
- Incentivize brand loyalty through farmer loyalty programs

1.5 Assumptions

We are assuming that upgrading the tech stack and streamlining the app features and functionalities for regional requirements will help achieve an overall cost reduction and process efficiencies.

2. MVP Feature Requirements

The following 32 features constitute the MVP scope as defined by the BASF team. Features are grouped by functional area.

2.1 Onboarding & Profile

F01 – Farmer Registration

New farmer account creation with basic profile information (name, location, farm size, crops). Registration flow designed for low-literacy users with minimal text input.

F02 – OTP-Based Farmer Login

Phone number login with one-time password verification. No password to remember. Session persistence so farmers don't need to log in every time.

F03 – Consent & Privacy Management

Granular opt-in for marketing, data sharing, and analytics. Per-market regulatory compliance (India DPDP Act, Japan APPI, etc.). Consent screen at registration with re-promptable flow on policy changes. Audit log of consent events.

F04 – Personalized User Profile

Profile with preferred language, location (GPS or manual entry), farm size, and primary crops. Preferences drive content personalization across the app – product catalog, POP, weather, prices, and notifications.

2.2 Product & Tools

F05 – Product Catalog

Full BASF crop protection catalog. Filterable by crop, indication (fungicide, herbicide, insecticide, seed treatment), and target pest/disease. Product detail pages with dosage, application method, PHI (pre-harvest interval). Only products registered in the user's country are shown. Available offline after initial sync.

F06 – Similar Products in Product Module

When viewing a product, display related or alternative BASF products for the same indication or crop. Helps farmers compare options without leaving the product context.

F07 – Product Calculator

Dosage and application calculator. Input: product, field area, target pest. Output: quantity needed, water volume, dilution ratio. Supports local measurement units (hectares, acres, bigha). Accessible from product detail pages.

F08 – ROI & Investment Planning Tools

Input cost calculators covering seed, fertilizer, crop protection, and labor. Yield and revenue estimators based on crop and region. Helps farmers justify investment decisions and plan season budgets.

2.3 Content & Guidance

F09 – Crop and Farming Best Practices Library

Package of Practices (POP) per crop per market. Stage-wise recommendations: land preparation, sowing, irrigation, fertilization, pest/disease control, harvesting. Content tied to user's crop selection and geo-location. CMS-managed so updates don't require an app release. Available offline.

F23 – Regional Agronomic Advice

Localized pest/disease alerts based on geography and season. Region-specific cultivation calendars. Expert contact directory linking farmers to BASF agronomists and local extension services.

F29 – Marketing Content

Rich content hub including product education videos, stewardship and safe handling guides, articles, and promotional materials. Content browsable by category. Videos playable in-app. Key content available offline after download.

F30 – Event Calendar

Calendar of BASF-hosted farmer events, training sessions, and field days. Filterable by region. RSVP or reminder functionality. Push reminder option for upcoming events.

2.4 Farm Tools

F10 – Weather Forecasts

Hyperlocal weather data: current conditions, hourly forecast, 7–10 day outlook. Key metrics: temperature, rain probability, humidity, wind speed. Weather tied to GPS coordinates or saved field location for hyperlocal accuracy.

F11 – Commodity Price Tracking

Live or near-live market prices for key crops in the user's region. Data source varies by market (India: eNAM/mandi prices, Japan: JA market data). Price trend charts and threshold-based price alert notifications.

F27 – Geo-Targeting

Content, product recommendations, alerts, and promotions targeted based on user's geographic location at a sub-region level. Drives relevance across POP, alerts, promotions, and product catalog.

F28 – Drone Booking Service (Full Integration)

End-to-end drone spray booking within the app. Farmers can select field, crop, product, and preferred date. Booking confirmation and status tracking. Only activated in markets where drone spraying is legally permitted and BASF has partnerships.

2.5 Scanning

F12 – QR Code and OCR Scanning

QR scanning for product detail linking and loyalty point earning from product packaging. OCR scanning for receipts and invoices to register purchases for loyalty programs (proven workflow from Japan's minorasu app). Must work reliably in outdoor/field conditions.

2.6 Loyalty & Gamification

F13 – Connect to External Gamification, Loyalty & Rewards Platform Providers

Adapter interface to connect to external loyalty/gamification platform providers or BASF's own loyalty backends per market. India: Exponus cashback system. Japan: minorasu Points engine. New markets: pluggable third-party providers. The app surfaces loyalty balance, earning actions, and redemption catalogs – all driven by the connected backend.

F14 – Rewards Management, Dispensing & Points Tracking

Track earned points or cashback. View full transaction history (earning and redemption). Manage reward dispensing appropriate to each market (UPI/bank transfer in India, prize fulfillment in Japan).

F15 – Gamification

Game mechanics to drive engagement: challenges, badges, streaks, leaderboards, or other engagement features. Connected to the loyalty platform adapter. Configurable per market.

F16 – Referral Feature

Invite other farmers to join the app via unique referral code or link (shareable via SMS/WhatsApp). Both referrer and referee earn loyalty rewards on successful registration.

F17 – Points-Tiered Membership

Loyalty tiers based on accumulated points (e.g., Silver, Gold, Premium). Higher tiers unlock better rewards or benefits. Tier status displayed on profile/home screen. Tier rules driven by the connected loyalty backend.

2.7 Notifications & Engagement

F18 – In-App Notifications

Notification center within the app. Alerts for loyalty updates, content updates, promotions, and system messages. Read/unread state. Deep links to relevant screens.

F19 – Push Notifications

Push notifications for weather, loyalty, product launches, seasonal reminders, and events. Delivered via FCM (Android) and APNs (iOS). User-configurable preference toggles. Segmented delivery by market, crop, and language.

F24 – Contact Us and Built-in Forms

In-app contact form with category selection, help/FAQ section, and feedback mechanism. Direct channel to BASF support with submission confirmation and response tracking.

F26 – WhatsApp Integration for Personalization

Send personalized messages, alerts, and content to farmers via WhatsApp Business API. Opt-in required. Message templates per market and language. Deep links back into the app.

2.8 Infrastructure & Operations

F20 – Offline Mode

Product catalog, POP content, and marketing/stewardship materials available without connectivity. Queued actions (scans, profile updates, loyalty claims) sync automatically when connectivity returns. Delta sync to minimize bandwidth usage – critical for rural areas across Asia.

F21 – Force Update Mechanism

Ability to force users to update to the latest app version when critical fixes or regulatory changes are deployed. Configurable as soft prompt or hard block, with messaging customizable per market and language.

F22 – Integration with CPM and CRM

Bidirectional sync with CRM for farmer profiles and interaction history. Read from CPM for country-level product registrations and regulatory data that drives catalog visibility. API-based integration.

F25 – Admin Console for BAU Ops

Web-based admin panel for minor content updates (POP, promotions, events), user database access, and basic operational management. Role-based access. Enables content updates without requiring a new app release.

F31 – Analytics Tracking

Screen views, feature usage, engagement time, and funnel conversion tracking. Loyalty attribution analytics. Crash and performance monitoring. Exportable dashboards for BASF marketing and product teams.

F32 – iOS & Android

Cross-platform app supporting both iOS and Android with feature parity. Platform-specific UX conventions respected. App store listings for both platforms.

3. Current State

The two existing apps the unified platform must replace:

3.1 AgGenie (India)

- Farmer loyalty + farm tools
- AI crop consultant using satellite imagery for per-field analysis
- Day-to-day recommendations: land prep, irrigation, fertilization, pest/disease prediction
- Weather: hourly + 7-day forecast
- Market prices: live commodity prices from nearby mandis
- Product catalog filterable by crop and category
- Loyalty: Exponus Farmer Loyalty Scheme – QR scan earns cashback, redeemable via UPI/bank
- Per-crop management modules: irrigation, fertilizer, cultural practices, harvesting, insects, diseases
- ~170K downloads on Google Play, primarily Android

3.2 Minorasu App (Japan)

- Farmer loyalty + farm tools
- Rebranded from Basta Points in December 2025
- Loyalty: receipt/invoice OCR scanning to earn points, redeemable for prizes and sweepstakes
- Product scope: 9 products (18 SKUs)
- Weather: high-precision forecasts, per-field 10-day outlook
- Pesticide dilution calculator
- iOS and Android, Japanese language only

4. Data Migration

Farmers with earned loyalty balances, crop profiles, or transaction histories must not lose any data in the transition to the unified platform.

Source	Data to Migrate	Considerations
AgGenie (India)	User profiles, field boundaries, crop history, Exponus loyalty balances, cashback transaction log, QR scan history	~170K users. UPI/bank details NOT migrated – users re-enter. Loyalty balances exact to the rupee.
Minorasu (Japan)	User accounts, point balances, redemption history, receipt scan history, sweepstakes participation, tier status	Recently rebranded (Dec 2025). Points are currency-equivalent. Coordinate cutover timing with BASF Japan.

- Migration approach: Audit → ETL pipeline → Validation → Cutover with 30-day parallel run (old app read-only)
- Rollback plan: old apps remain read-only for 90 days post-migration

5. Multi-Language & Localization

India and Japan are the initial markets. The platform must be built with i18n from day one to support expansion across Asia Pacific.

5.1 Language Support

Market	Language(s)	Notes
India	English, Hindi, Marathi, Telugu, Tamil, Kannada, Bengali, Gujarati, Punjabi	9 languages covering key crop states
Japan	Japanese	Full UI + content

5.2 Localization Beyond Language

- All UI strings externalized – no hardcoded text
- Date/time, number, currency formats per locale
- Measurement units: metric vs. local (hectares, acres, bigha, rai)
- Content (POP, stewardship, product labels) managed per-locale in CMS
- Auto language selection from device locale, manual override in settings
- Local regulatory disclaimers and legal text per market
- RTL layout support in framework for potential future markets (Urdu, Arabic)

6. System Integrations

System	Type	Purpose	Direction
CRM	Internal	Farmer profiles, interaction history, lead management	Bidirectional
CPM	Internal	Country-level product registrations, regulatory data	CPM → App (read)
Weather Provider	Third-party	Hyperlocal forecasts, alerts	Provider → App
Loyalty/Gamification	Ext/Internal	Points/cashback, gamification, rewards, tiers	Bidirectional
Commodity Prices	Third-party	Market prices per crop/region	Provider → App
WhatsApp Business	Third-party	Personalized messaging, alerts, deep links	App → WhatsApp
Drone Service	Third-party	Booking, scheduling, tracking	Bidirectional

7. Technical Direction

Detailed technical design will follow separately. This outlines the architectural direction.

7.1 Mobile App

- Cross-platform (React Native or Flutter) – single codebase for iOS and Android (F32)
- Feature flag system for country-specific activation
- Offline-first data layer with local DB and background sync (F20)
- Modular architecture: each feature area as independent module

7.2 Backend

- API Gateway with per-country routing
- Microservices: user management, catalog, loyalty adapter, weather, notifications, content
- Country configuration service: feature toggles, content sources, integration endpoints, localization
- Admin console as web application with role-based access (F25)

7.3 Security & Privacy

- OAuth 2.0 / OpenID Connect authentication
- Encryption at rest and in transit
- Consent management SDK (F03)
- PII handling per local data protection law

8. Open Questions

To be resolved during discovery (not important for RFP Presentation – but will have an impact on quote/pricing and timeline).

#	Question	Impact
1	What APIs do Exponus and minorasu loyalty backends expose? Documented?	Adapter complexity for F13, wrapper service scope
2	Unified BASF SSO across markets, or independent auth per country?	Authentication architecture for F02
3	Data residency requirements per country? (India, Japan especially)	Cloud region strategy, DB partitioning
4	Budget allocation: is the \$50K–\$150K for MVP only or full project?	Scoping and delivery timeline
5	What does 'CPM' refer to specifically? Is it the same as CPPM?	Integration scope for F22
6	Which third-party gamification/loyalty providers are being evaluated?	Adapter design for F13, F15
7	Desired timeline for AgGenie and Minorasu sunset?	Migration urgency, parallel-run planning
8	What drone service providers does BASF partner with? In which markets?	Integration scope for F28
9	Admin console (F25): who are the users and what's the expected BAU workflow?	Admin console feature depth
10	Will product catalog data come from PIM/DAM APIs or be managed in the app's own CMS?	Catalog sync architecture for F05

This document is a working draft to align on scope and direction ahead of the credentials presentation (week of April 20). All recommendations are subject to revision based on discovery findings.