**PoliGrain MVP Feature Set for First Deployment**

**Overview**

PoliGrain is a revolutionary app designed to transform the agricultural ecosystem by connecting farmers, investors, distributors, and consumers under one platform. For our first deployment, we propose a Minimal Viable Product (MVP) that delivers core value to stakeholders while ensuring stability and scalability. This MVP focuses on empowering farmers with access to funding and markets, providing investors with opportunities to support agricultural projects, and reducing inefficiencies in the supply chain. The initial release targets smartphone users, with plans to expand accessibility (e.g., via USSD) in future phases.

The MVP feature set is derived from the business pitch's key objectives:

* Financial inclusion for farmers through crowdfunding.
* Transparency in crop availability and supply chain management.
* Reduction of post-harvest losses through efficient logistics and storage requests.
* Inclusivity and scalability for global impact.

This deployment will establish a foundation for PoliGrain’s mission to sow the seeds of a better future, as exemplified by Kofi’s transformative journey in the pitch.

**MVP Feature Set**

**1. User Authentication and Profile Setup**

Description: Secure user registration and profile creation to enable role-based access for farmers, investors, distributors, and consumers.

* Signup/Login with Email Verification: Users create accounts with email verification using AWS Amplify Auth (Amazon Cognito) to ensure security.
* Multi-Step Profile Setup: Collect essential user data (name, phone, location, role: Farmer, Investor, Distributor, etc.) to tailor the app experience.
* Technical Details: Backend integration with Amplify Auth and API (/profile endpoint) to store user data in DynamoDB.

Why This Matters: This feature ensures secure onboarding, a critical first step in the user journey (Onboarding → Signup/Login → Email Verification → Profile Setup → HomeScreen), and enables role-based functionalities (e.g., farmers list products, investors fund projects).

**2. Marketplace for Buying and Selling**

Description: A core platform where farmers can list and sell their products, and all users can browse and purchase fresh produce.

* Product Listing by Farmers: Farmers add products (name, price, category, image) via a simple form.
* Product Browsing and Buying: All users can view products, filter by category (e.g., Vegetables, Fruits, Dairy), sort by price, and purchase with a confirmation dialog.
* Technical Details: Amplify API (/marketplace endpoint) with Lambda functions to manage product listings and purchases, stored in DynamoDB.

Why This Matters: The marketplace directly addresses the pitch’s goal of connecting farmers to buyers, reducing exploitation by middlemen, and minimizing post-harvest losses by ensuring timely sales.

**3. Crowdfunding for Farmers**

Description: A platform for investors to fund farmers’ projects, enabling access to modern tools like irrigation systems and IoT devices.

* Display Investment Opportunities: Show projects with details (name, funding goal, progress, minimum investment, expected return).
* Investor Funding: Investors browse opportunities and commit funds with a confirmation dialog.
* Project Submission by Farmers: Farmers submit basic project details (description, funding goal) for review.
* Technical Details: Amplify API (/investments endpoint) to manage project listings and investments, with manual approval for submitted projects.

Why This Matters: Crowdfunding tackles the pitch’s highlighted issue of farmers’ lack of financing, promoting financial inclusion and enabling modernization, as seen in Kofi’s story of funding an irrigation system.

**4. Real-Time Crop Availability Notifications**

Description: A feature for farmers to update crop availability, notifying stakeholders to ensure efficient sales and reduce waste.

* Manual Crop Availability Updates: Farmers manually update when crops are ready (proxy for future IoT integration).
* In-App Notifications: Distributors and consumers receive alerts about available crops.
* Technical Details: Amplify API (/marketplace updates) and Amplify Notifications for in-app alerts; SMS integration planned for later phases.

Why This Matters: This feature enhances transparency, a core value of PoliGrain (as per the Naked Emperor analogy), ensuring stakeholders are informed in real-time, reducing food wastage, and streamlining the supply chain.

**5. Basic Supply Chain Management**

Description: Enable farmers to request logistics and storage services, connecting them with providers to minimize post-harvest losses.

* Logistics/Storage Requests by Farmers: Farmers submit requests for pickup or storage via a form.
* Notifications to Providers: Admins or a predefined distributor list receive request notifications.
* Technical Details: Amplify API (/requests endpoint) to manage requests, with notifications sent via in-app alerts.

Why This Matters: This addresses the pitch’s focus on reducing post-harvest losses through efficient logistics, ensuring Kofi’s crops reach the market without waste.

**Expected Outcomes**

* Farmers: Kofi and farmers like him can sign up, list crops, seek funding, and request logistics, leading to increased profits and reduced losses.
* Investors: Gain access to agricultural projects, contributing to food security while earning returns.
* Consumers/Distributors: Purchase fresh produce directly, benefiting from transparency and quality.
* Business Impact: Establishes PoliGrain as a viable solution, attracting early adopters and setting the stage for growth.
* Metrics to Track:
  + Number of registered users (farmers, investors, distributors).
  + Number of products listed and sold in the marketplace.
  + Number of funded projects and total investment amount.
  + Number of logistics/storage requests fulfilled.

**Technical Implementation Overview**

* **Backend**: AWS Amplify with API Gateway, Lambda, and DynamoDB.
  + Endpoints: /profile (user data), /marketplace (products and notifications), /investments (crowdfunding), /requests (logistics/storage).
  + Authentication: Amplify Auth with Amazon Cognito.
  + Notifications: Amplify Notifications for in-app alerts.
* **Frontend**: Flutter app with screens for Onboarding, Signup/Login, Profile Setup, HomeScreen, MarketplaceScreen, and InvestmentScreen.
* **Deployment**: Initial release on Android and iOS for smartphone users.

**Next Steps**

1. **Development**:
   * Configure Amplify backend with the required API endpoints and authentication.
   * Build and integrate the Flutter screens with the backend.
2. **Testing**:
   * Conduct unit and integration tests with mock data.
   * Perform user acceptance testing with a small group of farmers and investors.
3. **Launch**:
   * Deploy the MVP on app stores (Google Play, Apple App Store).
   * Promote to early adopters in target markets.
4. **Post-MVP:**
   * Add USSD accessibility for non-smartphone users.
   * Integrate IoT for real-time crop monitoring.
   * Expand supply chain features with full logistics provider integration.

**Why This MVP Matters to Shareholders**

This MVP delivers immediate value by addressing the core challenges outlined in the pitch—financial inclusion, transparency, and supply chain efficiency—while keeping development lean and scalable. It positions PoliGrain as a transformative platform in the agricultural sector, with the potential to attract users, generate revenue through transactions, and scale globally. By focusing on these features, we ensure a successful first deployment that aligns with our mission to empower farmers like Kofi, support investors, and drive sustainability.

Let’s sow the seeds of a better future with PoliGrain!

* Timeline: Estimated 3-4 months for development and testing, depending on team size and resources.
* Budget: Focus on cost-effective AWS Amplify services; detailed cost breakdown available upon request.
* Risks: Initial user adoption may be slow; mitigated by targeted marketing and partnerships with local agricultural organizations.
* Feedback: We welcome your input on feature prioritization, target markets, or additional considerations for the launch.