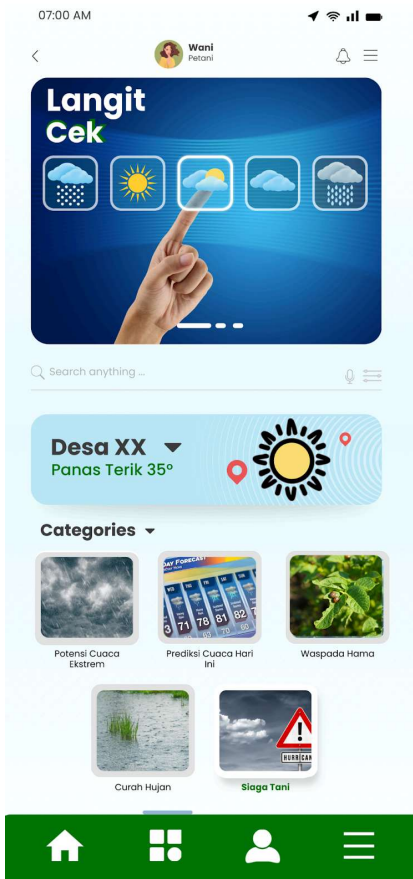


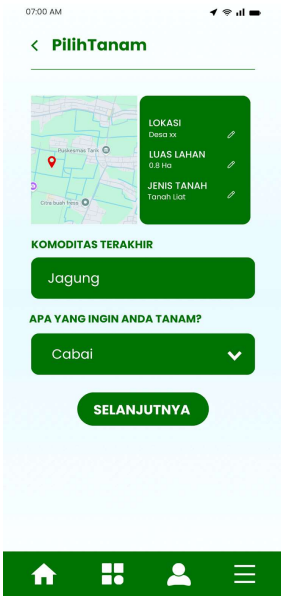

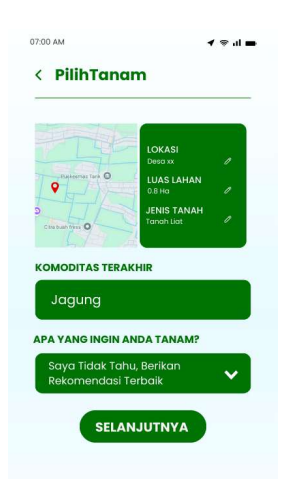
## Appendix 3. Prototype

### FarmShields 360 App



### [FarmShields 360 App](#)

Feature	Description
	<p><b>LangitCek</b></p> <p>LangitCek is the main feature that gives users quick and reliable weather information tailored to their village. After selecting a village from the “Desa XX” dropdown, the app immediately shows a simple preview of the current forecast (for example: “Panas Terik”). The categories inside LangitCek then provide the extended details behind that preview, so users can understand the weather more completely and plan their activities better. Here are the five sub-features:</p> <ol style="list-style-type: none"> <li>1. Potential for Extreme Weather Provides early alerts about possible extreme weather conditions, such as strong winds, storms, or heatwaves, to help users stay prepared.</li> <li>2. Today’s Weather Forecast Expands the initial pop-up shown under the “Desa XX” dropdown. This section gives the full, detailed version of the day’s weather, including temperature tendencies, sky conditions, and other supporting info.</li> <li>3. Pest Warning Highlights potential pest risks related to current weather patterns, giving users early awareness so they can take preventive actions.</li> <li>4. Rainfall Information Shows expected rainfall amounts, intensity, and timing, helping users anticipate wet conditions and plan their daily activities more effectively.</li> <li>5. SiagaTani Provides important alerts on weather-related hazards or risks in real time, supporting</li> </ol>

	quick decision-making and community preparedness.
  	<p><b>PilihTanam</b></p> <p>PilihTanam is an AI-powered crop recommendation feature that helps farmers make adaptive planting decisions in response to climate change. The system automatically integrates data from farm GPS, satellite imagery, and national climate databases. Farmers can add or edit basic farm information (specific location, land area, soil type, previous crop) as field verification to enhance recommendation accuracy. Once data is collected, farmers can choose between two usage pathways:</p> <ol style="list-style-type: none"> <li>1. For Farmers Who Already Have a Commodity Choice <p>The system performs suitability analysis on the farmer's selected crop by providing:</p> <ul style="list-style-type: none"> <li>• Suitability Status: "Highly Suitable" or "Not Suitable" based on current conditions and 30-90 day climate projections.</li> <li>• Assessment Rationale: The system explains in detail why the crop is suitable or not. Example for chili peppers rated "Not Suitable": high rainfall predictions creating waterlogging risks, clay soil with poor drainage characteristics, and increased fungal disease risk in humid conditions.</li> <li>• Adaptation Strategies: If farmers still wish to proceed with their chosen commodity, the system provides concrete solutions such as: building raised beds of at least 80 cm to avoid waterlogging, excavating main drainage channels for better water flow, and selecting varieties tolerant to flooding conditions.</li> <li>• Alternative Recommendations: The system suggests other crops better suited to the land conditions and climate projections. Examples: rice (Highly Suitable), water spinach (Suitable), and taro (Suitable), each matched to specific land conditions.</li> <li>• Save Analysis Feature: Farmers can</li> </ul> </li> </ol>

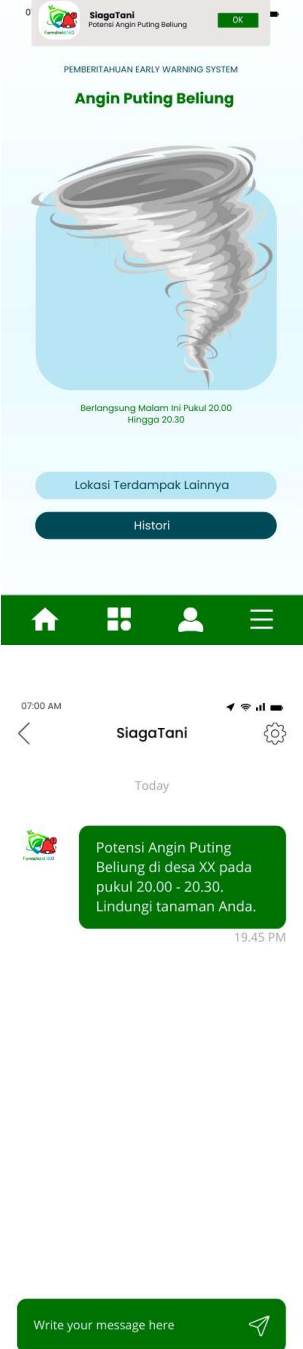


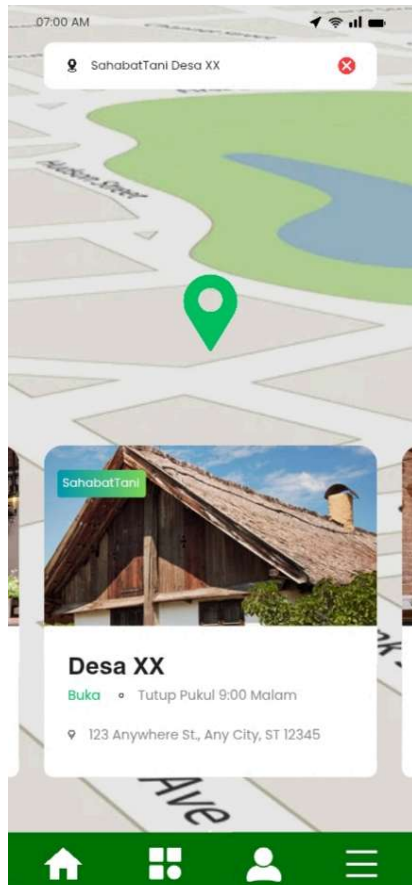
save analysis results for reference in planning the next planting season.

## 2. For Farmers Without a Planting Plan ("I Don't Know, Give Me Recommendations")

AI analyzes all available data, satellite imagery for soil moisture, GPS for local climate patterns, national climate databases for weather projections, and seasonal pest risk information, to provide optimal recommendations:

- **Primary Recommendation with Justification:** The system provides the best crop suggestion accompanied by compelling reasons. Example "Rice - Highly Suitable" with four justifications: high rainfall predictions ideal for rice cultivation, clay soil can be optimally utilized for paddy systems, good crop rotation after corn for agronomic balance, and high yield potential under these conditions.
- **Yield Maximization Strategies:** The system outlines concrete guidance to maximize success, such as: selecting rice varieties resistant to typical rainy season diseases, applying fertilizer in split doses for more efficient nutrient management, and strengthening monitoring systems with overflow drainage to prevent excess water.
- **Alternative Options:** The system also presents other suitable crop options (examples: water spinach and taro), ensuring farmers have multiple viable choices rather than a single recommendation.

	<h3>SiagaTani Sub-Feature</h3> <p>FarmShield 360 is customized to notify the users with a special pop-up notification called SiagaTani.. Users that use a digital smartphone with a proper network will receive a notification on their phone automatically once a weather danger is approaching. If the users click on the notification, broader information of the said weather danger will be shown including the estimation of the duration. Users are able to check if the same danger is approaching other villages nearby, as well as to check the history of all the warnings in the past one year. Farmers who aren't equipped with modern smartphones can still receive the notification through SMS. Farmers have to input their phone numbers into the coordinator's database to receive the SMS in their phone.</p>
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## SahabatTani

This Feature allows users to find the coordinator of their own village by showing them the locations of every coordinator's house. By typing the user's area, the nearest coordinator location to visit will pop up along with the information that contains the hours of the coordinator's availability to serve the community.