ALSApp
(Agriculture&LivestockSupport App)
A Mobile AI Decision-Support System: Revitalising Next-Generation Mediterranean Smallholders

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CONTEXT / CHALLENGE

The Macro-level Context: National growth plans emphasize digital transformation in agriculture, but smallholders face severe data fragmentation and weak traceability. Across the Mediterranean agri-food chain, long supply chains suffer from a lack of reliable data and traceability.





The Micro-level Context: Small family farms track data MANUALLY on paper, resulting in significant economic losses, low yields, POOR production planning, and POOR risk control. These burdens make family farms highly vulnerable and cumbersome to manage. In this context, the younger generation doesn't see agriculture as an attractive career.

The Climate Crises and Geopolitics: Smallholders are TRAPPED between the climate crisis, increasing global food insecurity, economic pressures and rising geopolitical conflict zones. As crises are ESCALATİNG and high-tech industrial farming serves elite segments, smallholders become the BACKBONE of local survival.



JOURNEY / ACTIONS

The Creation as a Bachelor's Thesis: The story started by creation of ALSApp as bachelor's thesis to graduation of Computer Engineering Department from a university in Turkiye. It was designed for the optimisation of farm management with high mobility and unified digital control, without fragmented and complex software interfaces.

The philosophy of ALSApp is "THE WHOLE FARM ON A SINGLE SCREEN" which enables the producer to easily record and TRACK IMPORTANT MANAGEMENT AND MONITORING DATA

The Field Check at HAYTEKFEST (Agriculture & Livestock Technologies Platform) in Türkiye: The system's practical performance was tested with local producers and agricultural stakeholders during a national event. (See Photo"The Governor of Burdur province in Türkiye visiting my AlsApp stand"). The critical question was: "Does it actually work in a real farm environment?" and I stripped away complex interfaces to create a radically simple, user-friendly and compact tool.



RESULTS /IMPACTS

🌱 *Enabling farmers to digitally manage their field activities*

Providing an efficient and traceable field management system by easy recording of operations.

For example: The app alerts the farmer when it's the ideal time to harvest based on local climate and crop data trends.

🐄 *Supporting health and productivity of livestock producers*

Increasing animal welfare and productivity by tracking weight, vaccination history, birth cycle and disease records.

For example:The system reminds the breeder of upcoming vaccination dates based on animal age and health history.

🏛️ *Facilitating access to government support programs*

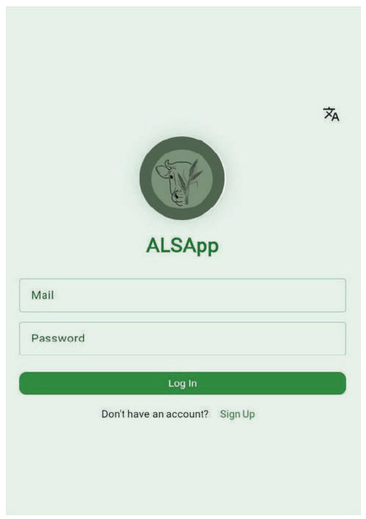
Sharing current incentive announcements, application dates and required documents.

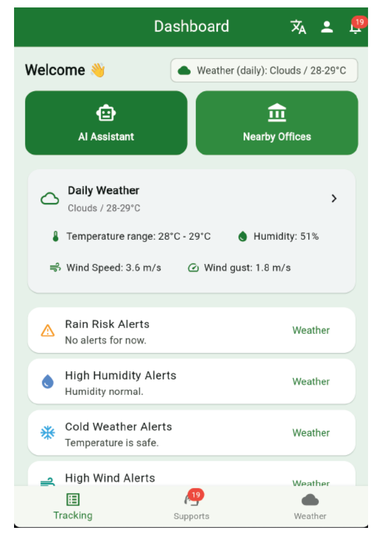
The app sends personalized reminders for upcoming support programs based on the user's previous activity, location, and production type.

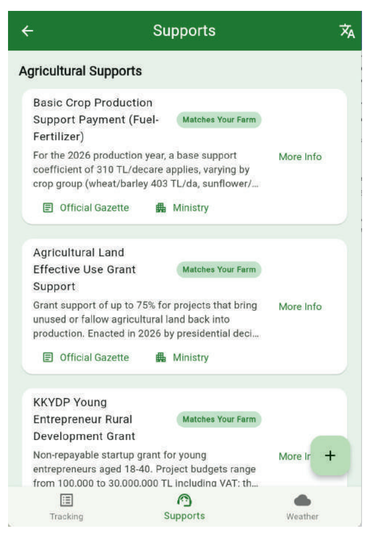
🌦️ *Information on location-specific weather alerts*

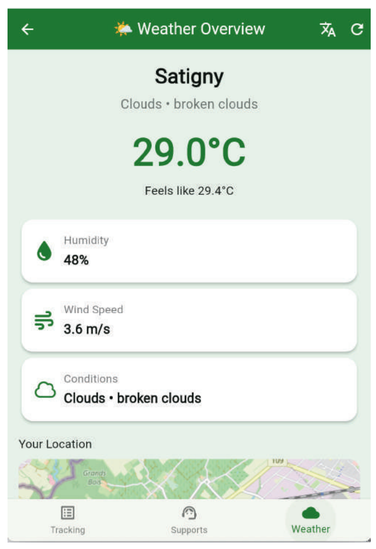
Provide real-time forecasts and early warning notifications for risky weather events such as frost, heat waves and storms.

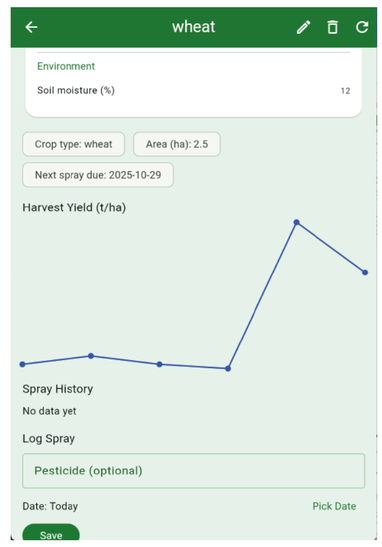
APPLICATION USER INTERFACE

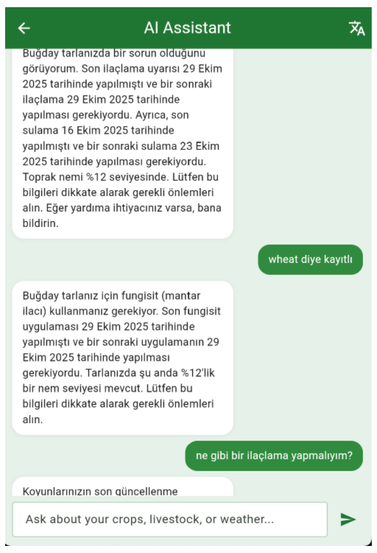












LESSONS LEARNED

Offline-First Design: Users can enter data without an internet connection which is critical for small Farms.
Real-Time Notifications and AI Integration: Instant weather, support, and health alerts via Firebase and AI based information are important.
Younger generation needs encouragement and needs digitalized environment to perceive traditional farming as an attractive sector.

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REFERENCES

[1] E. S. Dede, S. D. Demirci, and G. □nsal, "ALSApp (Agriculture and Livestock Support Application): CMPE492 – Final Report," Final report, Dept. of Computer Engineering, Faculty of Engineering, TED University, Ankara, Turkey, May 15, 2025.
[2] T.C. Tarım ve Orman Bakanlığı, "Tarım ve Orman Bakanlığı Resmi Web Sitesi," https://www.tarimorman.gov.tr, accessed Jun. 16, 2025.
[3] TED University, "CMPE492 Poster Template," Course material for CMPE492, TED University Learning Management System (LMS), Apr. 2025, accessed Jun. 16, 2025.

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