Databases II

Workshop No. 1 — Project Definition and Database Modeling

AgroClima: A Smart Agro-Climatic Decision Support Platform

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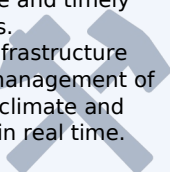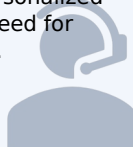
20191020147

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Introduction to the Business Model

AgroClima is a smart agro-climatic decision support platform designed to provide advanced climate-based solutions for farmers and agricultural organizations. The core idea of this project is to leverage climate data and artificial intelligence tools to deliver accurate and timely recommendations that enhance agricultural decision-making in the face of adverse weather conditions.

The main problem addressed by *AgroClima* is the high vulnerability of the agricultural sector to extreme weather events such as droughts, frosts, and heavy rainfall, which result in substantial crop losses, reduced productivity, and threats to food security. Currently, many farmers lack effective and accessible tools that would allow them to anticipate and adapt to these climate-related challenges.

The scope of the project includes the development of a final product: a user-friendly web platform specifically adapted for rural areas with limited internet connectivity. This platform will deliver personalized climate alerts, practical recommendations for agricultural management, and optimization strategies for resource use such as water and fertilizers. Furthermore, it will provide access to key regional climate risk information for public and private institutions. The overall goal of *AgroClima* is to empower small-scale farmers and relevant stakeholders in making informed strategic and operational decisions.

Key Partners

- Weather data providers (OpenWeather, Copernicus, IDEAM).

- Manufacturers and distributors of IoT sensors for agricultural use.

- Ministries of Agriculture, government agencies and NGOs that promote sustainable practices.

- Universities and climate and agricultural research institutes, which provide knowledge and scientific validation.

- Payment platforms and rural banking entities, which facilitate payments and subsidies.

- Agricultural input distributors that could partner for integrated offers.

Key Activities

- Design and management of weather forecasting and advisory services, adapted to different agricultural profiles.
- Execution of awareness and technology adoption campaigns in rural areas.
- Management of strategic relationships with governments, cooperatives, NGOs and agricultural associations.
- Technical support: development and maintenance of the digital system to offer the service.

Key Resources

- Network of strategic alliances with actors in the agricultural and climate sector.
- Access to reliable databases and satellite coverage.
- Intelligent predictive analytics and machine learning system to generate accurate and timely recommendations.
- Technological infrastructure for the efficient management of large volumes of climate and agricultural data in real time.

Value Propositions

For farmers:
- Accurate and actionable recommendations based on local climate predictions.
- Reduction of losses due to extreme events such as drought, frost or excessive rainfall.
- Optimization of the use of resources such as water and fertilizers.
- Ease of use, even without technical training.

For institutions and companies:
- Access to regional data and reports for agro-climatic decision making.
- Tools for planning subsidies, agricultural insurance and technical support.
- Improved public policies and agroclimatic disaster mitigation.

Customer Relationships

- Multichannel technical assistance (chat, telephone, mail) for rural users with limited connectivity.
- Training and support in the adoption of the platform, especially in areas with low digitalization.
- Automated and personalized alerts, without the need for constant interaction.

Channels

- Web platform accessible in rural areas with low connectivity.
- API access for institutions wishing to connect their agricultural management systems.
- Institutional partners (agricultural agencies, cooperatives) as implementation and support channels.

Customer Segments

Individual users:

- Small and medium farmers interested in protecting their crops.
- Technified producers who integrate IoT in their agricultural management.

Institutional customers:

- Regional and national governments that manage climate risks in the agricultural sector.
- Agribusiness companies seeking to optimize production and climate logistics.

Cost Structure

- Operation of alliances, training and customer service in the territory.

- Access and processing of climate and satellite data.

- Marketing, campaigns and community training.

- Investment in continuous improvement of the regional recommendation and adaptation model.

- Technical support: maintenance and technological operation costs servers, cloud, support.

Revenue Streams

- Monthly or annual subscription of farmers, with staggered plans according to needs.

- Institutional licenses for local or national governments.

- Additional services (consulting, premium data, risk maps).

- Freemium model with free basic functionalities and advanced paid plans.

- Alliances with insurance companies or input companies, which sponsor access to the service.