BATCH NO:177

FOOD AGRICULTURE USING IOT

Community Service Project report submitted
in partial fulfillment of the requirement for award of the degree of

Bachelor of Technology
in
Computer Science & Engineering

By

B.YASHWANTH	(23UECS0076)	**(VTU 24565)**
P.HARSHA VARDHAN	(23UECS0433)	**(VTU 24747)**
V.SAI NAVADEEP KRISHNA	(23UECS0600)	**(VTU 24596)**

Under the guidance of
Dr. D .Rajesh.,M.E., Ph.D.
Professor

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SCHOOL OF COMPUTING

VEL TECH RANGARAJAN DR. SAGUNTHALA R&D INSTITUTE OF SCIENCE & TECHNOLOGY

(Deemed to be University Estd u/s 3 of UGC Act, 1956)
Accredited by NAAC with A++ Grade
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LIST OF ACRONYMS AND ABBREVIATIONS

FA	Food Agriculture
FCI	Food Corporation of India
GPS	Global Positioning System
IoT	Internet of Things
QC	Quality Control

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Chapter 1

EXECUTIVE SUMMARY

Goals and Objectives: The overarching goal of this project was to enhance food availability and promote sustainable farming practices by using IoT solutions that are accessible and practical for rural farmers. The project aimed to help farmers make better decisions based on real-time data, such as soil moisture levels and weather conditions. By introducing tools that allowed for more precise monitoring and control, we hoped to increase crop yields, reduce water wastage, and create a shift toward more efficient and eco-friendly farming methods. Education was a key part of the initiative—we not only introduced the tools but also trained farmers on how to use them, interpret the data, and apply the insights to their daily work. In doing so, the project helped foster a sense of ownership and confidence among the participants, encouraging long-term use of the technology and continuous improvement.

Project Overview: In many rural communities, farming is not only the main source of food but also the backbone of the local economy. However, traditional agricultural methods often fall short in the face of modern challenges like climate change, water scarcity, and unpredictable weather patterns. With limited access to technology and agricultural training, smallholder farmers are particularly vulnerable. The Food Agriculture Using IoT project was developed as a response to these issues, aiming to modernize agricultural practices through the introduction of simple and affordable Internet of Things (IoT) technologies. The purpose of the project was to demonstrate how technology can be used not only to improve food production but also to promote environmental sustainability and strengthen community resilience. Through the use of soil sensors, automated irrigation systems, and data-driven farming practices, the project sought to create a lasting impact by improving productivity, conserving resources, and empowering local farmers.

Intended Impact : The intended impact of the project was multi-dimensional. At the most immediate level, we wanted to improve crop health and boost agricultural productivity by giving farmers the ability to monitor soil conditions and control irrigation systems more precisely. This meant they could water crops more efficiently and avoid both over- and under-watering. Over time, these small changes contributed to better plant growth and higher yields. On a broader level, the project aimed to build long-term resilience by creating awareness around sustainable farming and resource conservation. By involving farmers in every step of the process—from installation to data interpretation—we nurtured a sense of agency and adaptability that will serve the community well into the future. The combination of technology, training, and trust-building helped shift farming from a reactive to a proactive approach, reducing the community's vulnerability to environmental and economic shocks.

Beneficiaries : The main beneficiaries of the project were the local farmers who directly engaged with the IoT tools and training sessions. These individuals experienced first-hand how real-time data could improve their understanding of crop needs, streamline irrigation, and ultimately lead

to better yields. Beyond the immediate participants, the broader community also stood to benefit. With increased food production and more efficient use of water and land, the village experienced a general uplift in food security and economic stability. The positive ripple effects extended to families, local markets, and neighboring farmers who learned from the project indirectly. Children and young adults, in particular, gained exposure to new technologies and ideas, which helped create a more informed and future-ready generation. Overall, the project improved both individual well-being and community-level resilience.

Social Issue : This project addressed the pressing social issues of food insecurity and unsustainable farming, which are deeply interconnected in rural areas. Outdated agricultural practices, compounded by a lack of access to modern tools and knowledge, create a cycle of low productivity, poverty, and environmental degradation. These challenges not only threaten individual livelihoods but also weaken the social and economic fabric of entire communities. By introducing low-cost, easy-to-use IoT technologies and providing the necessary education to support their use, this project offered a practical and scalable solution to break this cycle. The emphasis on empowerment—rather than dependency—ensured that the community could carry forward the lessons and tools introduced during the project. In doing so, we helped plant the seeds for a more secure, sustainable, and self-reliant future.

Outcome Achieved :

Gained firsthand insights into the community's reliance on agriculture, economic vulnerabilities, and cultural attitudes toward innovation.

Successfully implemented IoT solutions such as soil sensors and automated irrigation systems, showcasing their impact on crop monitoring and water conservation.

Conducted interactive training sessions using visual aids and local language translations, significantly improving knowledge transfer and community engagement.

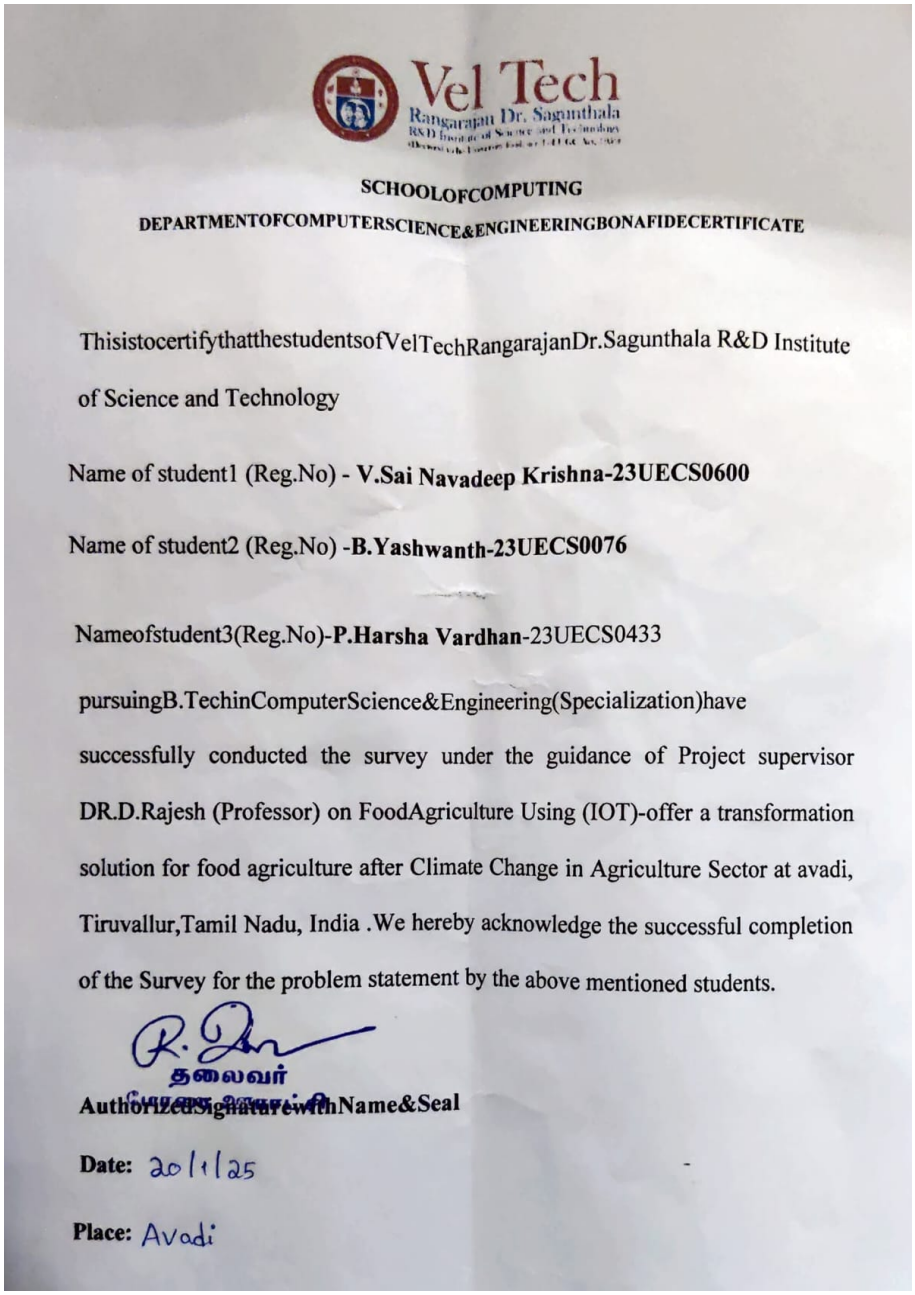
Built trust with local leaders and farmers, enabling productive dialogue and joint decision-making throughout the project.

Observed measurable improvements in water usage efficiency and farmer awareness, with strong indications of potential for long-term agricultural sustainability.

Chapter 2

OVERVIEW OF THE COMMUNITY

2.1 Certificate from the office of Community



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ThisistocertifythatthestudentsofVelTechRangarajanDr.Sagunthala R&D Institute of Science and Technology

Name of student1 (Reg.No) - **V.Sai Navadeep Krishna-23UECS0600**

Name of student2 (Reg.No) -**B.Yashwanth-23UECS0076**

Nameofstudent3(Reg.No)-**P.Harsha Vardhan**-23UECS0433

pursuingB.TechinComputerScience&Engineering(Specialization)have successfully conducted the survey under the guidance of Project supervisor DR.D.Rajesh (Professor) on FoodAgriculture Using (IOT)-offer a transformation solution for food agriculture after Climate Change in Agriculture Sector at avadi, Tiruvallur,Tamil Nadu, India .We hereby acknowledge the successful completion of the Survey for the problem statement by the above mentioned students.

தலைவர்

AuthorizedSignaturewithName&Seal

Date: 20/1/25

Place: Avadi

Figure 2.1: Certificate from the office of community

Chapter 3

ACTIVITY LOG & OUTCOME

3.1 Project Activity Log

ACTIVITY LOG-DAY 1-5		
DATE	BRIEF DESCRIPTION OF THE DAILY ACTIVITY	LEARNING OUTCOME
DAY 1	Visited the target community and held introductory meetings with local leaders and farmers.	Gained an understanding of the community's structure and identified key stakeholders essential for collaboration.
DAY 2	Continued community engagement and gathered insights through discussions with farmers.	Developed a deeper understanding of the existing agricultural methods, challenges faced by farmers, and local environmental conditions.
DAY 3	Analyzed survey data collected from the community to inform the planning of customized training sessions.	Learned how to process and interpret community data to design targeted, effective interventions.
DAY 4	Conducted the first educational session introducing the concept and benefits of IoT in farming.	Practiced translating complex technical ideas into simple, accessible language suitable for a non-technical audience.
DAY 5	Demonstrated the use of soil sensors, moisture meters, and other basic IoT tools.	Gained hands-on experience with IoT devices and learned how to explain their functions effectively to local farmers.

Table 3.1 Activity Log-Day 1-5.

ACTIVITY LOG-DAY 6-		
DATE	BRIEF DESCRIPTION OF THE DAILY ACTIVITY	LEARNING OUTCOME
DAY 6	Participated in the installation of soil sensors in designated demo plots within the community.	Acquired practical field experience in deploying IoT technology in real-world agricultural settings.
DAY 7	Held an interactive session focused on water conservation techniques and automated irrigation systems.	Learned about efficient resource management and the importance of precision irrigation.
DAY 8	Guided farmers in monitoring real-time sensor data and interpreting the results for daily farming decisions.	Strengthened skills in data analysis, visualization, and engaging with local participants in an educational setting.
DAY 9	Collected feedback from farmers on their experience using the IoT tools and identified areas for improvement.	Learned to capture user insights and apply feedback to improve usability and future training content.
DAY 10	Conducted a second awareness session on IoT-enabled crop forecasting and strategic planning.	Gained understanding of the value of predictive farming and how it supports long-term agricultural planning.

Table 3.2 Activity Log-Day 6-10.

ACTIVITY LOG-DAY 11-15		
DATE	BRIEF DESCRIPTION OF THE DAILY ACTIVITY	LEARNING OUTCOME
DAY 11	Facilitated group discussions about the challenges of adopting new technologies in rural areas.	Identified cultural, social, and economic barriers that could hinder the adoption of sustainable farming technologies.
DAY 12	Met with government and institutional agricultural officers to discuss long-term community support.	Built strategic partnerships to enhance sustainability and ensure continued support after the project ends.
DAY 13	Conducted preliminary evaluation on pilot farms to measure improvements in crop health and water usage.	Learned how to assess impact through basic evaluation tools and interpret the results.
DAY 14	Organized a final presentation for the community to share findings, experiences, and lessons learned.	Improved public speaking skills and learned how to present technical results in an inclusive and engaging way.
DAY 15	Distributed training handouts, guides, and created a post-project support plan to ensure continuity.	Designed methods for knowledge retention and supported the community's transition toward self-sufficiency.

Table 3.3 Activity Log-Day 11-15.

3.2 Project Outcome

The activity log serves as a real-time tracking tool for the project team to monitor progress. By documenting completed tasks and milestones, team members can assess the project's trajectory and identify any deviations from the planned timeline. This facilitates timely adjustments and ensures that the project stays on course towards its objectives.

Tracking Progress : The activity log provides a transparent view of project activities, like how the GPS used for positioning and facilitating effective communication among team members and stakeholders. By documenting each activity, including individuals involved, resources utilized, and status updates, the log ensures that everyone is informed about the project's current status and recent developments. This transparency fosters collaboration, reduces misunderstandings, and promotes alignment towards common goals.

Communication : The log provides a transparent view of project activities by communicating to the respective authorities. This helps in effective communication among team members, ensuring everyone is aware of the current status and recent developments.

Documentation :As a historical record of the project's journey, the activity log captures valuable insights into decision-making processes, challenges faced, and lessons learned throughout the project lifecycle. This documentation is essential for future reference, enabling teams to build on successes, avoid pitfalls, and continuously improve project management practices. Moreover, it provides a comprehensive overview for project reviews, audits, or knowledge transfer to new team members, ensuring that the project's legacy endures beyond its completion. Recordkeeping Packet for Small-Scale Fruit and Vegetable Growers: The Recordkeeping Packet provided by the Farmers' Legal Action Group (FLAG) includes useful templates for small-scale fruit and vegetable growers. It covers various aspects of recordkeeping, helping farmers organize and document their activities. You can find more details in the FLAG Recordkeeping Toolkit.

Chapter 4

BACKGROUND SURVEY ANALYSIS FOR PROBLEM STATEMENT

Information regarding the Socio-Economic Survey conducted in the Village/Habitation. Please include the questionnaire developed for the survey.

It refers to a comprehensive explanation of the anticipated results, impacts, and changes that the project aims to achieve within the broader community or society. It outlines the positive effects and contributions the project intends to make to address a specific social issue, improve the well-being of individuals or groups, and create lasting benefits for the community at large.

4.1 Background Study

- Market Dynamics: Analyze local and regional market dynamics for agricultural produce, considering factors such as seasonal demand variations, perishability of food items, and market preferences for specific crops. Understanding market requirements can help in planning the storage and transportation of food accordingly to meet market demands efficiently.
- Policy and Regulatory Environment: Examine existing policies, regulations, and standards related to food storage, transportation, and quality control. Ensure compliance with food safety regulations, temperature guidelines, and storage protocols to maintain food quality and safety during storage and transportation.
- Infrastructure Assessment: Assess the availability and condition of storage facilities (godowns) and transportation infrastructure such as warehouses, cold storage facilities, and transport vehicles. Adequate storage capacity, proper ventilation, temperature control, and hygienic conditions are essential for preserving food quality during storage.
- Storage Conditions: Evaluate the storage conditions required for different types of agricultural produce, considering factors such as temperature, humidity, ventilation, and pest control measures. Implement appropriate storage practices, including segregation of perishable and non-perishable items, to maintain food quality and extend shelf life.
- Quality Control: Implement quality control measures throughout the storage and transportation process to ensure the freshness, nutritional value, and safety of food products. Regular monitoring of storage conditions, inspection of food items for signs of spoilage or contamination, and adherence to hygiene standards are essential for maintaining food quality.
- Transportation: Consider transportation logistics, including the mode of transportation (road, rail, air), distance to market destinations, and time taken for transportation. Ensure proper pack-

aging, handling, and temperature control during transit to minimize damage, spoilage, and quality deterioration of food items.

- Collaborative Networks: Forge partnerships with transportation companies, logistics providers, and regulatory agencies to streamline the transportation process and ensure compliance with safety and quality standards. Collaborate with local farmers, cooperatives, and traders to optimize supply chain management and reduce post-harvest losses during storage and transportation.
- Risk Assessment: Conduct a risk assessment to identify potential hazards and risks associated with food storage and transportation, such as temperature fluctuations, pest infestations, contamination, and physical damage. Develop risk mitigation strategies and contingency plans to address these risks and ensure the integrity of the food supply chain.
- Cultural and Social Factors: Consider cultural preferences, dietary habits, and consumer preferences when planning storage and transportation strategies for agricultural produce. Engage with local communities to understand their needs and preferences, and tailor storage and transportation practices accordingly to meet consumer expectations and enhance food accessibility and affordability.

4.2 Survey Analysis with report

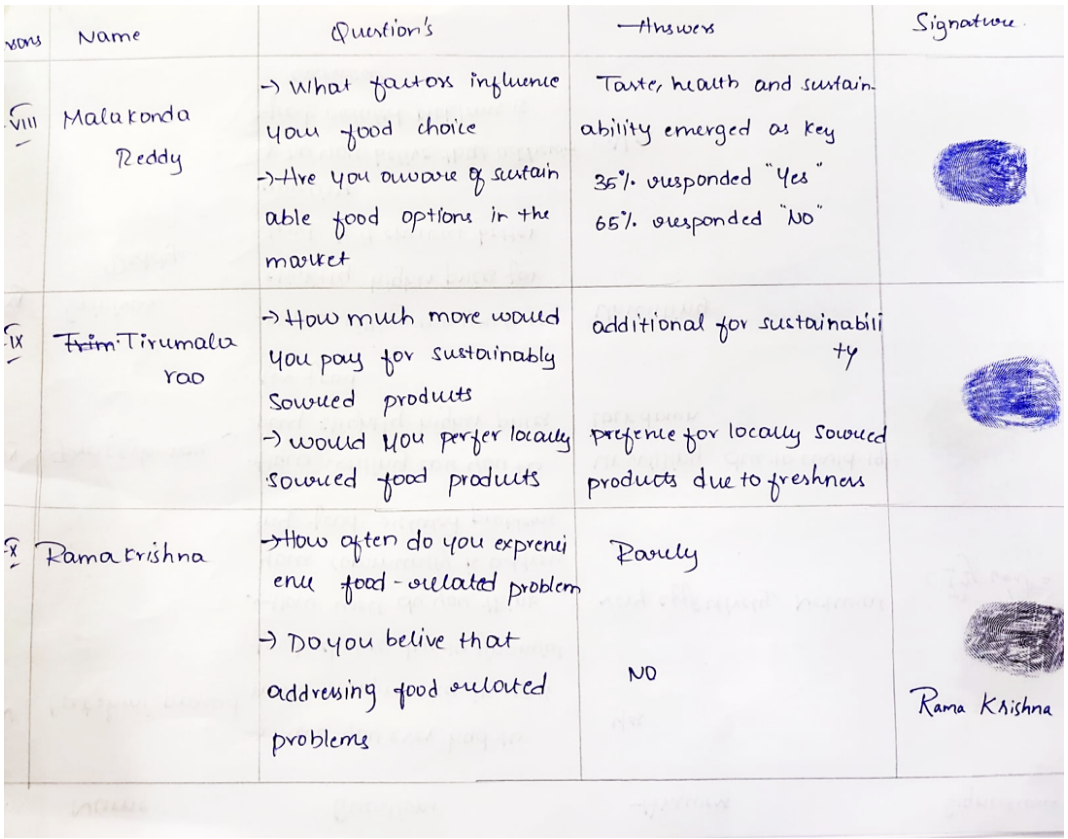
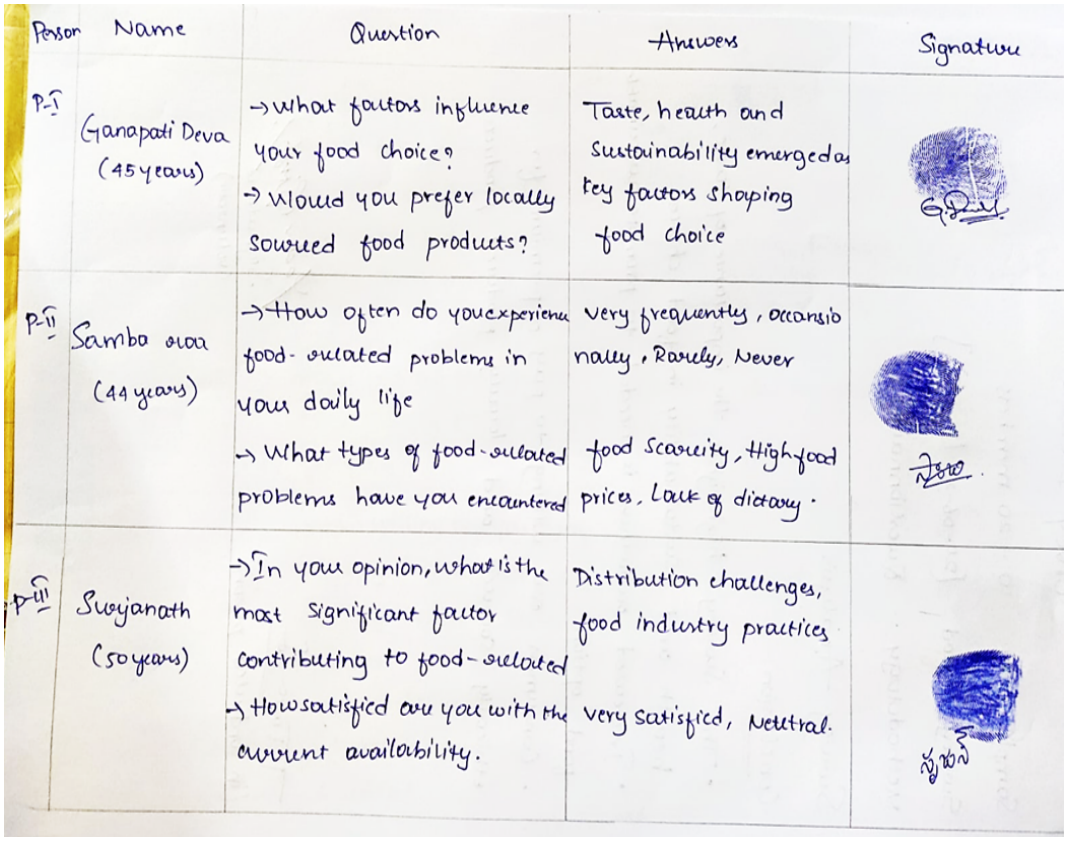


Figure 4.1: Survey analysis with report



Person	Name	Question	Answers	Signature
P-I	Ganapati Deva (45 years)	→ What factors influence your food choice? → Would you prefer locally sourced food products?	Taste, health and sustainability emerged as key factors shaping food choice	
P-II	Samba Siva (44 years)	→ How often do you experience food-related problems in your daily life → What types of food-related problems have you encountered	very frequently, occasionally, Rarely, Never food scarcity, High food prices, Lack of dietary.	
P-III	Surjanath (50 years)	→ In your opinion, what is the most significant factor contributing to food-related → How satisfied are you with the current availability.	Distribution challenges, food industry practices very satisfied, Neutral.	

Figure 4.2: Survey analysis with report

- Storage Infrastructure:
- Availability: Percentage of respondents reported having access to storage facilities, including godowns, warehouses, and cold storage units.
- Condition: However, percentage indicated that existing storage facilities were inadequate or poorly maintained, lacking proper ventilation, temperature control, and pest management measures.
- Capacity: Percentage expressed concerns about insufficient storage capacity, especially during peak harvesting seasons, leading to overcrowding and improper storage practices.

Storage Practices:

- Temperature Control: Percentage of respondents mentioned that temperature control was a significant challenge in maintaining food quality during storage. Lack of proper cooling systems and insulation contributed to temperature fluctuations, affecting the shelf life of perishable items.
- Hygiene Standards: Percentage highlighted the importance of maintaining hygiene standards in storage facilities to prevent contamination and spoilage of food products. However, percentage admitted to facing challenges in ensuring proper sanitation and cleanliness due to limited resources and infrastructure.

Transportation Logistics:

- Mode of Transportation: The majority of respondents percentage relied on road transportation for moving agricultural produce to markets and distribution centers. Limited access to rail and air transport options in rural areas posed challenges for long-distance transportation and perishable goods.
- Packaging and Handling: percentage of respondents emphasized the importance of proper packaging and handling practices to minimize damage and spoilage during transit. However, percentage reported issues with inadequate packaging materials and improper handling techniques leading to product losses.

Quality Control Measures:

- Monitoring Systems: Only small percentage of respondents had implemented monitoring systems or technologies to track temperature, humidity, and other environmental conditions during storage and transportation. Lack of access to affordable monitoring solutions hindered real-time monitoring and quality assurance efforts.
- Inspection Procedures: percentage of respondents conducted periodic inspections of food items for quality checks and adherence to safety standards. However, expressed the need for more robust inspection procedures and regulatory oversight to ensure compliance with food safety regulations.

Challenges and Opportunities:

- Challenges: The survey identified several challenges, including inadequate infrastructure, limited access to technology, lack of financial resources, and regulatory constraints hampering effective food storage and transportation practices.
- Opportunities: Despite challenges, respondents expressed optimism about leveraging technology, enhancing collaboration among stakeholders, and accessing government support programs to improve storage and transportation infrastructure and practices.

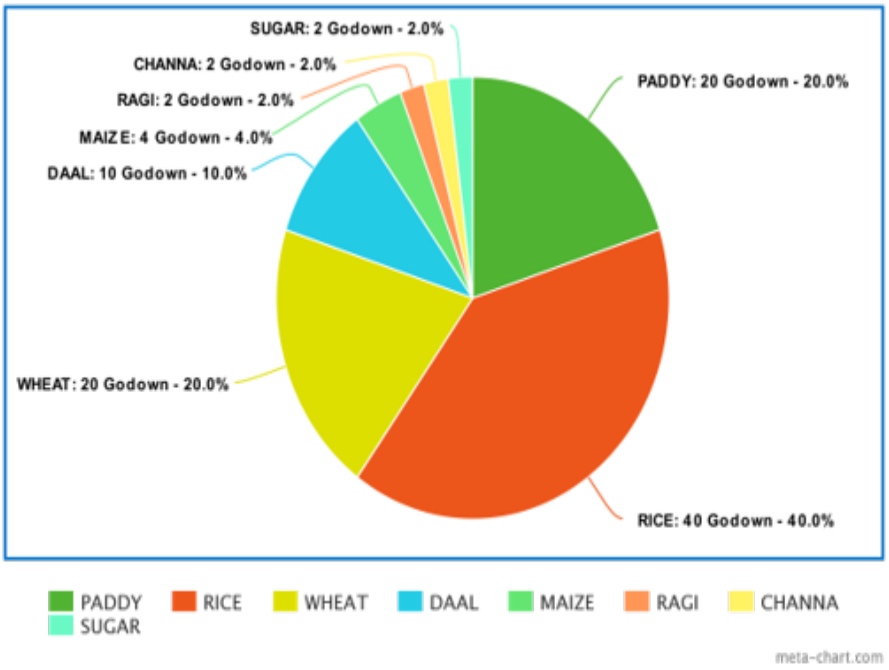


Figure 4.3: Survey analysis

4.3 Geotagged Photos and Details

Surveying about the godowns about at what conditions they store the food.

Figure 4.5: Surveying about food

Surveying about for how many years the food can be stored in the godowns.

Figure 4.4: Surveying about godown conditions

Figure 4.6: Surveying about transportation

Surveying about how the stored food was distributed and to where it is going.

Figure 4.7: Mill 1

This above picture displays how they store the rice in the godowns.

4.4 Society Relevant Problem Identification

Food Distribution Inefficiencies:

- Problem: Inefficient distribution processes may lead to delays in providing essential supplies to local communities, particularly during emergencies.
- Solution: Improve logistics and transportation systems, optimize distribution routes, and enhance inventory management practices to ensure timely delivery of food commodities.

Waste and Spoilage:

- Problem: Inadequate storage conditions or inventory management may result in food spoilage and waste, contributing to scarcity issues and environmental concerns.
- Solution: Upgrade storage facilities, implement better inventory tracking systems, and prioritize rotation to reduce waste and ensure the freshness of stored goods.

Local Market Impact:

- Problem: Operations of storage facilities may disrupt local markets or negatively affect local farmers and traders, impacting the community's economic well-being.
- Solution: Collaborate with local stakeholders to ensure that storage facility operations complement local markets. Implement fair trade practices and transparent pricing mechanisms to support local economies.

Health and Safety Hazards:

- Problem: Inadequate safety measures or improper handling of stored goods can pose health risks to workers, nearby residents, and the environment.
- Solution: Enhance safety protocols, provide proper training to workers, and conduct regular safety inspections to mitigate health and safety hazards in the workplace.

4.5 Development of Problem solution

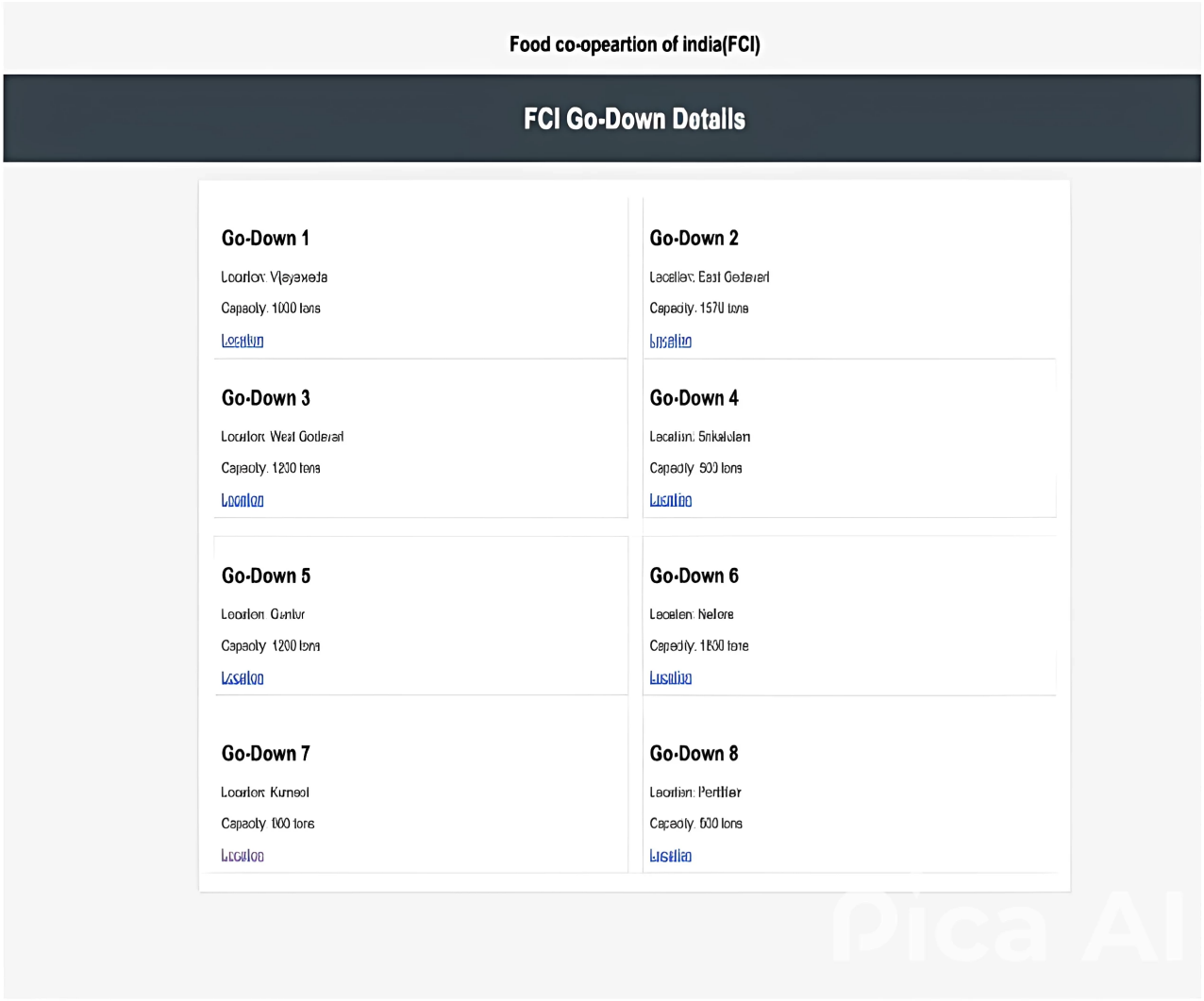


Figure 4.8: Godown details

This above picture shows about our developed problem solution about storing the details of the food and the quality and quantity of the food stored in the godown and the transporing vehicle registerd number and driver's name and his phone number ect.By clicking on the avove links we can access the database and we can store the details in it.

Outline the issues you have recognized within the community.

- Efficient Inventory Management:
  - Centralized database records quantity and quality of agricultural produce in godowns and transportation vehicles.
  - Real-time updates enable informed decisions on inventory management for timely distribution and replenishment.

Optimized Transportation:

- Detailed vehicle information, including driver details, ensures seamless coordination during transit.
- Alerts triggered by the database for deviations from optimal storage conditions ensure product quality during transportation.

Quality Assurance:

- Continuous monitoring of storage conditions (temperature, humidity) ensures adherence to food safety standards.
- Swift action on deviations minimizes spoilage risk, upholding product quality throughout the supply chain.

Traceability and Accountability:

- Tracking of product movement from farm to market establishes traceability and accountability.
- Transparency instills consumer confidence and allows farmers to showcase product quality and safety.

Market Access and Price Negotiation:

- Access to accurate data on product availability and storage conditions empowers farmers in price negotiations.
- Enables farmers to secure better market access and optimize profitability in the marketplace.

4.6 Geo Tagged Photos

Figure 4.9: GeoTagged Photos at location

Figure 4.10: GeoTagged Photos at location

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- Enables farmers to secure better market access and optimize profitability in the marketplace.

Propose a short-term and long-term action strategy for addressing the identified issues. These solutions can be put forward to the relevant authorities for consideration and implementation.

Short-term action strategy:

Pilot Projects and Technological Upgrades:

- Initiate pilot projects in select agricultural regions to test and demonstrate technological solutions for improving food distribution and storage.
- Upgrade existing infrastructure in godowns and transportation vehicles with basic monitoring and tracking systems, such as temperature gauges and GPS devices.

Training and Skill Development:

- Conduct training programs for farmers, drivers, and warehouse staff to enhance their skills in efficient inventory management, transportation logistics, and quality control.
- Provide practical training on best practices for maintaining food quality and safety during storage and transportation.

Data Collection and Analysis:

- Establish data collection mechanisms to gather information on inventory levels, transportation routes, and storage conditions manually or through simple tracking forms.
- Analyze collected data to identify bottlenecks, inefficiencies, and areas for improvement in food distribution and storage processes.

Infrastructure Improvements:

- Prioritize immediate infrastructure upgrades, such as repairing and upgrading roads leading to agricultural areas, repairing godowns, and ensuring proper ventilation and pest control measures.
- Allocate resources to improve access to electricity, clean water, and other basic amenities essential for maintaining food quality in storage facilities.

Long-term action strategy:

Scale-Up Infrastructure Development:

- Expand infrastructure development initiatives to cover a wider geographic area and address long-standing deficiencies in transportation networks and storage facilities.
- Invest in building new godowns, cold storage facilities, and transportation hubs strategically located to serve agricultural communities effectively.

Policy and Regulatory Reforms:

- Review and update existing policies and regulations related to food distribution and storage to streamline processes, improve efficiency, and ensure compliance with safety standards.
- Introduce incentives and support mechanisms to encourage private sector investment in modernizing and expanding food distribution infrastructure.

Research and Innovation:

- Allocate funding for research and innovation in agricultural technology, focusing on developing cost-effective solutions for improving food distribution and storage without relying on advanced IoT technologies.
- Support collaboration between research institutions, industry partners, and agricultural communities to develop practical and scalable solutions tailored to local needs.

Capacity Building and Knowledge Sharing:

- Strengthen capacity-building efforts through ongoing training programs, workshops, and knowledge-sharing platforms aimed at empowering stakeholders with the skills and knowledge needed to optimize food distribution and storage practices.
- Foster collaboration and information exchange between government agencies, NGOs, academia, and the private sector to facilitate learning and innovation in the agricultural sector.

Chapter 5

RECOMMENDATIONS AND CONCLUSION

5.1 Recommendations

- Investment in Infrastructure Improvement: Continue investing in infrastructure upgrades for food agriculture, including the construction of modernized storage facilities, enhancement of transportation networks, and improvement of road infrastructure in rural areas.
- Training and Skill Development: Implement training programs aimed at enhancing the skills and knowledge of farmers, warehouse workers, and transportation professionals in efficient inventory management, quality assurance practices, and transportation logistics.
- Collaborative Partnerships: Foster partnerships between government agencies, private sector stakeholders, and local communities to promote knowledge sharing, resource mobilization, and collaborative problem-solving in addressing challenges related to food distribution and storage.
- Policy Support and Regulation: Advocate for supportive policies and regulations that promote sustainable practices, ensure food safety standards, and incentivize investment in infrastructure and technology for food agriculture.
- Community Engagement and Awareness: Engage local communities through awareness campaigns, workshops, and outreach programs to raise awareness about the importance of efficient food distribution and storage practices, promote local entrepreneurship, and empower small-scale farmers.
- Think about adding pest detection sensors to your system. These smart tools can alert farmers when pests are starting to appear, so they can act early and avoid losing crops or overusing harmful chemicals.
- A simple mobile app could really help farmers make the most of the IoT tools. The app could show live updates on soil moisture, weather forecasts, and watering needs—in their local language, so it's easy to use.
- You're already collecting a lot of valuable data. Why not store it online (using cloud services) and create simple charts or summaries? This way, farmers can see trends over time and make even better decisions each season.
- Consider using solar panels to power the IoT devices. It's cost-effective in the long run and perfect for areas where electricity isn't always reliable.

- You could also add IoT-based composting monitors that help farmers turn organic waste into fertilizer more efficiently, improving soil health and reducing chemical use.
- Start small "tech clubs" with local youth. They can help manage the tech and even come up with new ideas, while learning valuable skills in agriculture and technology.
- Organize regular meetups where experienced farmers using the IoT system can share their results and tips with others. This farmer-to-farmer learning often works better than formal training alone.
- Train a few local farmers or volunteers as "community tech champions" who can teach others and maintain the system. This builds independence and helps the project continue long after it ends.
- Look into partnerships with microfinance groups or government programs that offer subsidies or low-interest loans. This can make it easier for farmers to afford the devices on their own.

5.2 Conclusion

In this project exploration of the agricultural sector has illuminated both challenges and opportunities. Here pinpointed critical areas for intervention, particularly in food distribution and storage practices. The proposed actionable recommendations promise effective solutions.

Collaboration emerges as a linchpin for driving positive change. Partnerships between government, the private sector, and local communities leverage collective expertise and resources. Through collaboration, we can implement sustainable solutions that foster inclusive growth.

Empowerment lies at the heart of transformation. Engaging with local communities is essential, and empowerment activities—coupled with awareness-building efforts—act as powerful catalysts for change. By actively involving stakeholders in decision-making processes, we cultivate resilience and ownership over local food systems.

In this project our vision for the future is one of resilience, sustainability, and inclusivity within food agriculture. Prioritizing infrastructure development, capacity building, and robust policy support lays the foundation for this transformative journey. In this envisioned future, safe and nutritious food is guaranteed for all, and communities thrive in harmonious balance with their environments.

Appendix A

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CERTIFICATE

It is certified that the work contained in the project report titled "FOOD AGRICULTURE USING IOT" by "B.YASHWANTH(23UECS0076),P.HARSHA VARDHAN (23UECS0433),V.SAI NAVADEEP KRISHNA (23UECS0600)" has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.

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DECLARATION

e hereby declare that we have completed the mandatory community service project in the stipulated
me period in Name of the Community under the guidance of our Project supervisor

B.YASHWANTH

Date: 08/05/2025

P.HARSHA VARDHAN

Date: 08 / 05 / 2025

V.SAI NAVADEEP KRISHNA

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APPROVAL SHEET

This project report entitled "FOOD AGRICULTURE USING IOT" by "B.YASHWANTH(23UECS0076), P.HARSHA VARDHAN (23UECS0433),V.SAI NAVADEEP KRISHNA (23UECS0600)" is approved for the degree of B.Tech in Computer Science & Engineering.

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