



# **Program Book**

## **Community Service Project**

**AP STATE COUNCIL OF HIGHER  
EDUCATION**

**(A STATUTORY BODY OF GOVERNMENT OF ANDHRA PRADESH)**

# **COMMUNITY SERVICE PROJECT**

**On**

**Addressing challenges faced by the farmers during crop production**

**Submitted By**

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Under the guidance of

**Ms.Ch .Vasavi,** M. Tech

**Assistant professor**

**Department of CSE**



**DEPARTMENT OF**

**COMPUTER SCIENCE AND ENGINEERING**

**GEETHANJALI INSTITUTE OF SCIENCE AND TECHNOLOGY**

(Approved by AICTE, new Delhi & permanently affiliated to JNTUA, ANATAPURAMU)

# **Program Book for Community Service Project**

**Name of the Students:** Sk. Mansoor  
S.G.B. Sanath kumar  
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**Name of the College:** Geethanjali Institute of science and technology

**Registration Number:** 212U1A0594  
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**Period of CSP:** 4weeks **From:**12-05-2023 **To:** 12-06-2023

**Name & Address of the Community/Habitation:** Addressing challenges  
faced by farmers during their crop production in Chiruvella Khandrika

# **Community Service Project Report**

Submitted in accordance with the requirement for the degree of B. Tech

Name of the college: Geethanjali Institute of science and technology

Department: COMPUTER SCIENCE AND ENGINEERING

Name of the faculty Guide: Ms. Ch. Vasavi, Assistant Professor, Dept. of CSE.

Duration of the CSP: 4weeks Form: 12-05-2023 To: 12-06-2023

Name of the students: Sk. Mansoor

S.G.B. Sanath kumar

K. Vishnu Vardhan

N. Tarun

Program of study: Addressing challenges faced by farmers during their crop production

Year of study: 2<sup>nd</sup> year

Date of Submission: 12-06-2023

### **Student's Declaration**

I am SK. Mansoor a student of community service project program, Reg. No. 212U1A0594 of department of Computer science and Engineering college do hereby declare that I have completed the mandatory community service from 12-05-2023 to 12-06-2023 in “Addressing challenges Faced by farmers during crop production” under the Faculty Guideship of Ms. CH. Vasvi, Department of Computer science and Engineering in Geethanjali Institute of science and Technology.

(Signature and Date)

### **Endorsements**

Faculty Guide

Head of the Department

Principal

### **Student's Declaration**

I am S.G.B. Sanath kumar a student of community service project program, Reg. No. 212U1A05A8 of department of Computer science and Engineering college do hereby declare that I have completed the mandatory community service from 12-05-2023 to 12-06-2023 in “Addressing challenges Faced by farmers during crop production” under the Faculty Guideship of Ms. Ch. Vasvi, Department of Computer science and Engineering in Geethanjali Institute of science and Technology.

(Signature and Date)

### **Endorsements**

Faculty Guide

Head of the Department

Principal

### **Student's Declaration**

I am K. Vishnu Vardhan a student of community service project program, Reg. No. 222U5A0502 of department of Computer science and Engineering college do hereby declare that I have completed the mandatory community service from 12-05-2023 to 12-06-2023 in “Addressing challenges Faced by farmers during crop production” under the Faculty Guideship of Ms. Ch. Vasvi, Department of Computer science and Engineering in Geethanjali Institute of science and Technology.

(Signature and Date)

### **Endorsements**

Faculty Guide

Head of the Department

Principal

### **Student's Declaration**

I am N. Tarun a student of community service project program, Reg. No. 212U1A0570 of department of Computer science and Engineering college do hereby declare that I have completed the mandatory community service from 12-05-2023 to 12-06-2023 in “Addressing challenges Faced by farmers during crop production” under the Faculty Guideship of Ms. Ch. Vasvi, Department of Computer science and Engineering in Geethanjali Institute of science and Technology.

(Signature and Date)

### **Endorsements**

Faculty Guide

Head of the Department

Principal



## **Certificate from Official of the community**

This is to certify that our team belongs to GEETHANJALI INSTITUTE OF SCIENCE AND TECHNOLOGY underwent community service project in **“Addressing challenges faced by farmers during crop production”** from 15<sup>th</sup> may 2023 to 12<sup>th</sup> June 2023.

The overall performance of the community service project volunteers during community

service is found to be..... (Satisfactory/Good)

Authorized Signatory with Date and Seal

# ACKNOWLEDGMENTS

We would like to take this opportunity to acknowledge everyone who has helped us in every stage of this community service project. We express my deep sense of gratitude to all those who have been instrumental in preparation of this project. We acknowledge the kind of support, efforts and timely guidance provided by **Ms.Ch. Vasavi**, Assistant Professor, Department of CSE as well as our HOD of CSE **MS. Veguru Gayathri** who gave me the golden opportunity to do this wonderful project on the topic of “**Addressing challenges faced by framers during their crop production**” which also helped me in doing a lot of Research and came to know about so many new things we are really thankful to them.

Secondly, we would also like to thank my teachers who helped me a lot in finishing this project within the limited time. We are making this project not only for marks but also to increase my knowledge.

**Thanks to all who are helped us**



**GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY::NELLORE**

**Department of Computer Science and Engineering**

**COMMUNITY SERVICE PROJECT**

**Project Title: ADDRESSING CHALLENGES FACED BY FARMERS IN CROP PRODUCTION**

**ABSTRACT**

This community service project aims to address the difficulties faced by farmers in successfully growing crops. Farming is a vital profession that feeds our communities, but it comes with various challenges that impact crop growth. This project seeks to understand the difficulties and provide support to farmers and enhance agriculture productivity.

Through this initiative, we conducted surveys and field visits in Chiruvella Khandrika. Based on that field visits, we identified the different types of problems faced by the farmers which may include Labour shortage, Market Access and price fluctuations, Pests and Diseases, limited access of water. By addressing the difficulties faced by farmers in crop production we are providing them a necessary solutions are:

Encourage the use of organic farming practices and bio-pesticides as alternatives of synthetic pesticides. Soil testing and analysis can guide farmers in applying appropriate fertilizers based on crop requirements. Support the formation of farmers co-operatives and organizations to enhance the bargaining power and collective market. Training programs should be implemented to enhance the skills of farm labour. Practices like crop rotation, cover cropping can help improve soil fertility and structure. Conducting soil testing and implementing site-specification plans can ensure balanced nutrient management. Providing farmers with training and knowledge on pests and diseases identification, control measures.

Guide Name: MS. Ch. Vasavi

Batch Members :

<b>NAME</b>	<b>Roll no</b>
Sk. Mansoor	212U1A0594
S.G.B. Sanath kumar	212U1A05A8
K. Vishnu Vardhan	222U5A0502
N. Tarun	212U1A0570

Guide signature

project coordinator signature

HOD Signature

## CHAPTER 1: EXECUTIVE SUMMARY

This executive summary provides an overview of the problems faced by farmers during crop production, with a focus on wheat, cotton, eucalyptus, lemon, mango and groundnut crops. It also highlights the community service activities carried out by the student in the Community Service Program (CSP) and presents five learning objectives and outcomes.

The farming community faces several challenges that impact crop production. To know the problems faced by farmers during crop production, we decided to go to the village to know the problems and give them possible solutions. So, we went to “Chiruvella Khandrika” to address the challenges faced by farmers. The challenges is in the form of high cost of fertilizers, water management, market price fluctuations, unpredictable weather patterns, pests and disease infestation, labour wages and harvest and post-harvest management. And after a careful research on the problems, we found possible solutions to the problems and we presented them to farmers.

**Five learning objectives were identified for the CSP, with corresponding outcomes:**

**Objective:** Enhance farmer’s knowledge of sustainable farming practices.

**Outcome:** Farmers gained a better understanding of sustainable farming techniques, such as organic farming, water conservation methods, and integrated pest management.

**Objective:** Improve farmer’s ability to manage pests and disease effectively.

**Outcome:** Farmers learned about pest identification and appropriate pesticide use.

**Objective:** Enhance farmer’s understanding of soil fertility management.

**Outcome:** Farmers received training on soil testing, nutrient management and they understood them.

**Objective :** Facilitate the adoption of modern agricultural technologies

**Outcome:** Farmers were introduced to modern agricultural tools and techniques, such as precision farming and mobile applications and mobile applications, enabling them to enhance productivity and efficiency.

**Objective :**Empower farmers with financial skills and marker access.

**Outcome::** Farmers gained knowledge on financial management strategies, such as \_budgeting and cost analysis.

## **CHAPTER 2: OVERVIEW OF THE COMMUNITY**

### **About the Village:**

The community is a close-knit and vibrant community with a rich historical profile. It has a long-standing legacy that dates back several generations, with a unique cultural heritage that reflects in its traditions, customs, and values.. This diversity contributes to a vibrant and inclusive community atmosphere where different cultures coexist harmoniously. The community takes pride in its traditions, which are deeply rooted in its history and play a significant role in shaping its identity. The village is known for its warm hospitality and welcoming nature, making it a vibrant and inclusive community.

### **Community Diversity:**

The village is characterized by its diverse population, comprising people from different backgrounds and ethnicities. The community is a melting pot of various cultures, religions, and languages. This diversity adds to the richness of the village, creating an environment of cultural exchange and understanding. The residents embrace their differences and celebrate diversity through various cultural events and festivals. This inclusivity fosters a strong sense of unity and harmony within the community.

### **Traditions, Ethics, and Values:**

The village holds its traditions, ethics, and values close to its heart. These elements form the foundation of the community's identity and guide the behavior and interactions of its members. The traditions are deeply rooted in the village's history and are celebrated with great enthusiasm. They encompass various aspects of life, including religious practices, social gatherings, and traditional arts and crafts. The ethics and values upheld by the community revolve around respect, integrity, and cooperation. The residents place a strong emphasis on respecting elders, maintaining strong family bonds, and supporting one another in times of need. These values create a sense of unity and foster a supportive community environment.

### **Brief Note on Socio-Economic Conditions of the Village:**

The socio-economic conditions of the village play a crucial role in the lives of its residents. The primary occupation of the villagers is agriculture, with farming being the main source of income. The fertile land and favorable climate make agriculture a viable livelihood option for the community. The village is known for its cultivation of various crops, such as wheat, cotton, eucalyptus, lemon, mango, and groundnut, which contribute significantly to the local economy.

However, the village faces certain challenges in terms of socio-economic development. Limited access to modern farming techniques, lack of infrastructure, and fluctuating market conditions pose obstacles to the growth of the agricultural sector. Efforts are being made to address these challenges through initiatives that promote agricultural innovation, provide training and support to farmers, and improve market linkages.

To improve the socio-economic conditions of the village, there are ongoing efforts to enhance infrastructure development, promote skill development programs, and facilitate access to financial services and markets. These endeavors aim to create a more prosperous and sustainable future for the community, empowering the villagers and improving their quality of life.

## CHAPTER 3: COMMUNITY SERVICE PART

*Description of the Activities undertaken in the Community during the Community Service Project. This part could end by reflecting on what kind of values, life skills, and technical skills the student acquired.*

### **Activities undertaken in the Community Service Project:**

**Implementing Water Conservation Techniques:** We assisted farmers in implementing water conservation techniques such as drip irrigation, rainwater harvesting, and efficient water usage practices. These initiatives aimed to address the water scarcity challenges and promote sustainable water management in crop production.

**Introducing Organic Farming Practices:** We educated farmers about the benefits of organic farming and facilitated the adoption of organic practices. This included training on organic pest control methods, composting techniques, and reducing chemical inputs.

**Encouraging Sustainable Farming Practices:** The student promoted sustainable farming practices, such as integrated pest management, organic fertilizers, and crop rotation, to minimize environmental impact and improve long-term soil health.

**Creating Awareness on Government Schemes:** The student informed farmers about various government schemes and programs available to support them, such as subsidies for improved seeds, agricultural equipment, or financial assistance for implementing water conservation measures.

### **Reflection on Acquired Values, Life Skills, and Technical Skills:**

**Community Engagement and Empathy:** We developed a deep understanding of the challenges faced by farmers and the importance of community engagement. We cultivated empathy and a strong sense of responsibility towards supporting and uplifting the community.

**Communication and Leadership Skills:** We honed their communication skills by effectively conveying knowledge, instructions, and guidance to farmers. We also developed leadership qualities by organizing facilitating discussions, and taking initiatives to address agricultural challenges.

**Problem-Solving and Adaptability:** We learned to identify problems and find innovative solutions within the context of agriculture. We developed the ability to adapt to diverse situations, considering the unique needs and constraints of the farmers.

**Technical Agricultural Knowledge:** Engaging in the CSP provided the us with a deep understanding of sustainable farming practices, water management techniques, pest control methods, soil fertility enhancement strategies, and financial management in the agricultural context.

**Collaboration and Teamwork:** We actively collaborated with agricultural experts, organizations, and community members, fostering a spirit of teamwork and coallaboration. We recognized the value of collective efforts in achieving meaningful outcomes.

### ACTIVITY LOG FOR THE FIRST WEEK

<b>DAY &amp; DATE</b>	<b>BRIEF DESCRIPTION OF THE DAILY ACTIVITY</b>	<b>LEARNING OUTCOME</b>	<b>Person In-charge Signature</b>
<b>Day -1</b>	Studied the guidelines of community service project and clearly understood them.	Undersood the importance of CSP in the curriculum and got the clear idea of the project	
<b>Day -2</b>	Started the project by visiting a library, gathering information from various topics and finally we selected a topic for project "Problems faced by farmers during the crop production".	Understood the books are the only things which has the infinite amount of knowledge about anything.	
<b>Day -3</b>	Visited the Sachivaalayam of that area where want to conduct the project to seek the permission.	It helped us to how to speak with higher officials and importance of communication skills.	
<b>Day - 4</b>	Conducted field visits to wheat farms to observe and know about the common problems faced by farmers during production wheat.	Identified major challenges such as soil erosion, climatic changes, labor shortage and market fluctuations.	
<b>Day -5</b>	Analyzed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and he has to face lot difficulties in successfully growing their crop.	
<b>Day -6</b>	Prepared a report summarizing the problems faced by farmers during production of wheat, along with solutions.	Developed the skills in report writing and synthesizing information.	

## WEEKLY REPORT

WEEK-1(From Dt 15-05-2023 to Dt 21-05-2023)

<b>Detailed Report:</b> In the first week we went to cotton fields to know about the cotton and the problems faced to grow them.
➤ Studied the notification released by JNTUA according to the CSP.
➤ We carefully read the rules & regulations of CSP and understood them.
➤ selected the topic “Challenges Faced By Farmers During Crop Production”.
➤ Based on that topic we conducted different types surveys (or) field visits to the different villages and among them we selected one village and its name is “Chiruvella Khandrika”.
➤ We started our project by visiting Sachivaalayam of that area to seek the permission to conduct the project on a particular area.
➤ After getting the permission we visited the different types of fields like wheat, cotton, Lemon, Eucalyptus, Mango and Groundnut.
➤ Initially, we visited the wheat fields and asked farmers some questions. Based on our questions we were able to get some information.
➤ From that information we identified major problems faced by farmers during crop production and the problems are soil erosion, climatic changes, labour shortage and market fluctuations .
➤ By understanding these problems faced by the farmers we conducted different types of researches like visiting the libraries and searching in different types of websites to find out different types of solutions.
➤ Based on our research we found different types of solutions. These are the following solutions:
➤ Encourage the use of organic farming practices and bio-pesticides as alternative for synthetic pesticides.
➤ Training programs should be implemented to enhance the skills of the farm labour.
➤ Improving the market information systems, Including mobile apps which can provide the farmers up-to-date price information based on that information farmers can cultivate the crops based on the demand.
➤ Farmers can adopt the mechanisms and automated mechanism techniques to reduce labour work.





In the above figure, we are meet the farmer name Ramaiah in Chiruvella Khandrika and asked that farmer on various questions based on that questions we identified different problems faced by that farmer. Majorly the farmer faces soil erosion, climatic changes, labour shortage and market fluctuations.



In above figure shows the fields of Ramaiah, in his land he grows wheat Kharif crop. This Kharif crop requires 3-5 months to mature. The harvesting and sowing time of crops differ in different regions, depending upon the climate conditions.

## ACTIVITY LOG FOR THE SECOND WEEK

<b>DAY &amp; DATE</b>	<b>BRIEF DESCRIPTION OF THE DAILY ACTIVITY</b>	<b>LEARNING OUTCOME</b>	<b>Person In-charge Signature</b>
<b>Day - 1</b>	Conducted field visits to cotton farms to observe and know about the common problems faced by farmers during production of cotton.	Identified major challenges such as pest and disease infestation, high cost of fertilizers, high labour wages and low rate of return.	
<b>Day - 2</b>	Analysed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and they have to face a lot of difficulties in successfully growing their crop.	
<b>Day - 3</b>	Prepared a report summarizing the problems faced by farmers during production of cotton, along with the solutions.	Developed skills in report writing and synthesizing information	
<b>Day - 4</b>	Conducted field visits to lemon fields to observe and know about the common problems faced by farmers during lemon production.	Identified the major challenges such as citrus diseases, weather extremes, water wastage, market challenges and lack of skilled labours.	
<b>Day - 5</b>	Analysed the problems carefully by understanding the problems faced and we conducted different types of researches. Based on our research we found different types of solutions.	Understood the problems of farmers and they have to face a lot of difficulties in successfully producing their crop.	
<b>Day - 6</b>	In the last day of the week, we went to the farmers and provided solutions to their problems. Finally, we prepared a report in that report it consists of the problems faced by farmers and its solutions.	Developed the skills in report writing and synthesizing the information.	

## WEEKLY REPORT

### WEEK-2(From Dt 22-05-2023 to Dt 28-05-2023)

**Detailed Report:** In the second week we went to cotton fields to know about the cotton and the problems faced to grow them.

- Cotton is World's favorite fiber. Its beauty, comfort, durability and versatility make it the perfect choices for clothing, bedding, textiles and many other products. India is the World's largest producer of cotton and the United States has been the largest exporter for many years.
- Cotton farming, a vital agricultural sector, plays a significant role in the global textile industry. However, cotton farmers face numerous challenges that impact their productivity, profitability and sustainability.
- Cotton farming, a vital agricultural sector, plays a significant role in the global textile industry. However, cotton farmers face numerous challenges that impact their profitability and sustainability.
- Similarly, Lemon trees are a rich source of vitamin c, calcium, magnesium, iron. These minerals are maintaining strong bones maintaining us healthy. Even though the lemons are good for health but it is not easy to grow them. Farmers face various problems to grow them.
- To know the problem we decided to go to cotton & lemon fields in "Chiruvella Khandrika", we identified the different types of problems, the problems are high cost of fertilizers, pest and disease infestation, labour wages, less MSP and low rate return, nutritional deficiencies.

#### **Based on our research the solution to the problems are :**

- Implementing an integrated weed management approach, including cultural, mechanical and chemical methods.
- Instead of paying workers a fixed daily or hourly wage, they are compensated based on the quantity of cotton they harvest or the number of tasks they complete.
- Rotating crops to disrupt weed cycles and to reduce weed pressure. Utilize precision farming technologies such as GPS-guided equipment, drones and sensors.
- Collecting and storing rainwater to supplement irrigation needs during dry periods.
- Conduct regular soil tests to determine the specific nutrient needs of your cotton fields. This will help you apply fertilizers more efficiently, avoiding over-application and unnecessary costs.
- .
- Utilize precision farming technologies, such as variable rate application and GPS-guided equipment, to apply fertilizers only where they are needed most. This targeted approach ensures efficient use of fertilizers, minimizing waste and cost.



In the above figure we are meet the farmer name Santosh in Chiruvella Khandrika and asked that farmer on various questions based on that questions we identified different problems faced by that farmer. Majorly the farmer faced high cost of fertilizers, labour wages, less MSP and etc.



In above figure shows the fields of Santosh, the farmer had 1 acre of land in that one acre he growing both cotton and wheat Kharif crop, used in making clothes and in the textile industry. This Kharif crop requires 6-8 months to mature. The harvesting and sowing time of crops differ in different regions, depending upon the climate conditions.





In the week-2 of our project we are also visited the lemon fields and meet the farmer name Hari Prasad, we asked the different types of question like what are the problems faced by that farmer during his crop production based on our questions he answered some of the question based on his crop production and he also told to us how much period that lemon crop is produced and we given some solutions to that farmer placed a awareness camp to that locality farmers who are produced the lemon crop in their fields.

### ACTIVITY LOG FOR THE THIRD WEEK

<b>DAY &amp; DATE</b>	<b>BRIEF DESCRIPTION OF THE DAILY ACTIVITY</b>	<b>LEARNING OUTCOME</b>	<b>Person In-charge Signature</b>
<b>Day -1</b>	Conducted field visits to Eucalyptus farms to observe and know about the common problems faced by farmers during production of Eucalyptus.	Identified major challenges such as Water requirement, Pests and diseases, Fire risk and market fluctuations.	
<b>Day -2</b>	Analyzed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and he has to face lot of difficulties in successfully growing their crop.	
<b>Day -3</b>	Prepared a report summarizing the problems faced by farmers during production of Eucalyptus, along with solutions.	Developed the skills in report writing and synthesizing information.	
<b>Day -4</b>	In that same week, we conducted field visits to Mango farms to observe and know about the common problems faced by farmers during production of Mango.	Identified major challenges such as Pests and diseases, Climate and weather-related issues, Irrigation and water management and market fluctuations.	
<b>Day -5</b>	Analyzed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and he has to face lot of difficulties in successfully growing their crop.	
<b>Day -6</b>	Prepared a report summarizing the problems faced by farmers during production of Mango, along with solutions.	Developed the skills in report writing and synthesizing information.	

## WEEKLY REPORT

WEEK-3(From Dt 29-05-2023 to Dt 04-06-2023)

**Detailed Report:** In the third week we went to Eucalyptus & mango fields to know about the problem faced to grow them.

- Eucalyptus is a fast-growing tree native to Australia. As an ingredient in many products, it is used to reduce symptoms of coughs, cold and congestion. It is also features in creams and ointments aimed at relieving muscle and joint pain.
- Eucalyptus was soon used in other traditional medicine systems, including Chinese, Indian Ayurvedic, Greek and European.
- Many medicines are treated for cough and cold but they commonly contains eucalyptus, which is known to reduce nasal and chest congestion and provide relief. Overall, eucalyptus trees offers numerous benefits.
- Similarly, mango trees are large, evergreen trees that are highly prized for their delicious fruits. The mangos are mostly grown and ripened in summer season. Almost half of the world's mangos are cultivated in India alone, mango trees are striking an impressive with their large size. Even though the mangos are tasty and delicious but it is not easy to grow them.
- To know the problem we decided to go to eucalyptus and mango fields in Chiruvella Khandrika, and nearby villages we identified the different types of problems, the problems are invasive species, market demand and pricing, harvesting and post harvest management, technical support, water management, climate and weather.

### Based on our research the solutions to the problems are:

- Implement proper management practices, including site selection, to minimize the risk of invasiveness. Choose non-invasive eucalyptus hybrids are suited for local environment.
- Conducting market research to identify potential buyers and demand for eucalyptus timber, essential oils. Developing strong market and networking strategies to connect potential buyers for long-term relationship.
- Farmers should be trained in proper harvesting methods, considering factors such as fruit maturity, color.
- Careful handling and packing techniques should be followed to minimize the damage. Proper storage conditions, including temperature and humidity control can help prolong fruit shelf life.
- Farmers should seek training programs, workshops provided by agricultural institutions, NGOs. Building partnerships with agricultural experts can help us to access to technical support.
- Farmers should implement proper irrigation methods like drip irrigation methods like drip irrigation conserve to conserve water and improve water-use efficiency.
- Farmers should adopt climate-smart agricultural practices, including cultivating suitable mango Varieties.



In the above figure we are meet the farmer name is prasad in chiruvella khandrika and asked about that farmer on various questions based on that questions we are identified different problems faced by that farmer. Majorly the farmer is faced invasive species, market demand, water requirement, soil management.



In above figure is show the fields of prasad the farmer had 2 acers of land in that two acers of land he cultivated eucalyptus it takes between 10 to 12 years to mature to become a trees. It cultivated cost as less well. A eucalyptus tree around weight of 400kg approximately. In a hector area of around one and one half trees can be planted.



### ACTIVITY LOG FOR THE FOURTH WEEK

<b>DAY &amp; DATE</b>	<b>BRIEF DESCRIPTION OF THE DAILY ACTIVITY</b>	<b>LEARNING OUTCOME</b>	<b>Person In-charge Signature</b>
<b>Day -1</b>	Conducted field visits to Groundnut farmers to observe and know about the common problems faced by farmers during production Groundnut.	Identified major challenges such as Limited Access to Finance, Limited Technological Adoption, Fire risk and market fluctuations.	
<b>Day -2</b>	Analyzed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and he has to face lot difficulties in successfully growing their crop.	
<b>Day -3</b>	Prepared a report summarizing the problems faced by farmers during production of Groundnut, along with solutions	Developed the skills in report writing and synthesizing information.	
<b>Day -4</b>	In that same week, we conducted field visits in Brinjal farms to observe and know about the common problems faced by farmers during production Brinjal.	Identified major challenges such as Land Tenure and Ownership Issues, Lack of Infrastructure, Market Volatility and Price Fluctuations	
<b>Day -5</b>	Analyzed the information collected from the farmers and found the possible solutions to the problems.	Understood the problems of farmers and he has to face lot difficulties in successfully growing their crop.	
<b>Day -6</b>	Prepared a report summarizing the problems faced by farmers during production of Brinjal, along with solutions	Developed the skills in report writing and synthesizing information.	

#### WEEK-4(From Dt 05-06-2023 to Dt 11-06-2023)

<b>Detailed Report:</b> In the third week we went to Groundnut fields to know about the Groundnut and problems faced to grow them.
In the modern era, Groundnut is the most important oilseed crop. It is the sixth most important oilseed crop in the world.
India got the second rank in production of Groundnut seeds. In India Groundnut is available throughout the year.
Groundnut plays an important role both as oil & food crop. Groundnut is very nutritious food. It contains 48-50% oil, remaining consist of rich protein fiber, minerals and vitamins.
It also helps in preparing non-food products such as soaps, medicines, cosmetics and lubricants etc. Around 60% of Groundnut production produced by India & China. World's leading producer of Groundnuts are India and China
Brinjals are good source of fiber it is also good for blood.
Even through the Groundnut are important for us but it is not easy to grow them. Farmers are faced different problems to grow them. Similarly, brinjal farmers faced different is not easy to grow them. Farmers faces various problem to grow them.
To know the problems faced by the farmers we are decided to go to the Groundnut fields and brinjal farmers in chiruvella khandrika and nearby villages, by visiting we are identified the different types of problems, the problems are climate variability, Lack of access of quality seeds, Limited irrigation facilities, Lack of mechanization, post-harvest losses, Market challenges.
Based on our resources the solutions to the problems are:
Strengthen seed supply systems, including the production and distribution of high -quality groundnut seeds. Established seed banks and encourage seed saving practices. Strengthen the seed production and distribution systems.
Promote the climate smart-agricultural practices, such as rainwater harvesting, micro-irrigation and conservation tillage use weather forecasting tools to plan planting and harvesting schedules
Promoted the use of appropriate agricultural machinery and equipment for groundnut farming, such as tractor-mounted planters, harvesters. Facilitate access to machinery through corporative farming. Train farmers in machinery operation and maintenance.
Invest in irrigation infrastructure, such as small-scale irrigation systems and water storage facilities. Promote water-efficient irrigation methods like drip irrigation. Provide training on water management techniques to optimize the water.
Educate farmers on proper post-harvesting handling, including drying, cleaning, and storge techniques. promote the use of improved storage structures like hermetic bags. Train farmers on post-harvest processing techniques, such as oil extraction and roasting.
Engage with agricultural associations and advocacy groups are provided feedback policies. Participate in farmer organizations that are collectively represent farmer organizations

## CHAPTER 5: OUTCOMES DESCRIPTION

**Details of the Socio-Economic Survey of the Village/Habitation. Attach the questionnaire prepared for the survey.**

The socio-economic survey conducted in the “Chiruvella Khandrika” for the above project aimed to gather comprehensive data on various aspects related to the socio-economic conditions of the community and the challenges faced by farmers in crop production. The survey included the following details:

### **Demographic Profile:**

- a. What is the total population of the village/habitation.
- b. How many households are there in the village/habitation, and what is the average household size?
- c. What is the educational background of the residents in the village/habitation?

### **Livelihoods and Income Sources:**

- a. What are the primary occupations of the residents in the “Chiruvella Khandrika”?
- b. What are the main sources of income for households in the “Chiruvella Khandrika”?
- c. Are there any specific challenges or constraints faced by the residents in generating income related to crop production?

### **Agricultural Practices and Challenges:**

- a. What are the common agricultural practices employed for wheat, cotton, eucalyptus, lemon, mango, and groundnut farming in the village?
- b. Are there any specific challenges faced by the farmers related to pests, diseases, soil fertility, or weather conditions in cultivating these crops?
- c. Do the farmers face any marketing challenges in selling their agricultural produce?

### **Infrastructure and Development:**

- a. What is the condition of roads and transportation facilities in the village, specifically related to agricultural activities?
- b. Is there access to irrigation facilities, and how reliable are they for supporting crop cultivation?
- c. Are there any specific infrastructure or development needs identified by the farmers in the village/?

### **Government Support and Schemes:**

- a. Are the farmers aware of any government schemes or support programs available specifically for wheat, cotton, eucalyptus, lemon, mango, or groundnut farming?
- b. Have the farmers utilized any government schemes related to agriculture, irrigation, or marketing for these crops?

## Describe the problems you have identified in the community

In addressing the challenges faced by farmers during crop production, several problems have been identified in the community. These problems can vary depending on the region, climate, infrastructure, and available resources. Here are some common issues:

1. **Climate Change:** Farmers are increasingly dealing with unpredictable weather patterns, including droughts, floods, and extreme temperatures. These climate variations make it difficult to plan and manage crop production effectively.

2. **Lack of Access to Water:** Many farmers struggle with limited or unreliable access to water for irrigation purposes. Inadequate infrastructure, such as irrigation systems and water storage facilities, can hinder crop growth and productivity.

3. **Soil Degradation:** Continuous cultivation without proper soil management practices leads to soil degradation, erosion, and nutrient depletion. This reduces crop yields and overall farm productivity.

4. **Pest and Disease Management:** Farmers face challenges in controlling pests, weeds, and diseases that can damage crops. Inadequate knowledge about integrated pest management strategies and limited access to effective pesticides and treatments exacerbate these issues.

5. **Limited Access to Finance:** Farmers often struggle to access affordable credit or loans to invest in modern farming techniques, equipment, and inputs. This financial constraint limits their ability to adopt new technologies and improve their crop production practices.

6. **Market Volatility and Price Fluctuations:** Farmers face uncertainties in the market, including unpredictable price fluctuations and volatile demand. Lack of market information and limited access to fair and transparent markets can lead to reduced profits and income instability.

7. **Limited Technological Adoption:** Many farmers, especially small-scale and resource-limited farmers, lack access to modern agricultural technologies and practices. Limited awareness, training, and high costs prevent them from adopting innovative solutions that could enhance productivity and sustainability.

8. **Lack of Infrastructure:** In rural areas, inadequate infrastructure, such as roads, storage facilities, and transportation systems, can impede the timely and efficient transportation of crops from farms to markets. This leads to post-harvest losses and reduced profitability.

9. **Lack of Education and Training:** Farmers often lack access to proper education, training, and extension services. This hampers their ability to acquire up-to-date knowledge and skills necessary for efficient crop production, sustainable farming practices, and effective management.

10. **Land Tenure and Ownership Issues:** In some regions, farmers face challenges related to land tenure and ownership, including insecure land rights, land fragmentation, and disputes. These issues can limit investment in land improvements and hinder long-term planning for crop production.

Addressing these problems requires a multi-faceted approach involving government support, investment in rural infrastructure, farmer education and training, access to finance, research and development for climate-resilient and sustainable farming techniques, and the adoption of appropriate technologies.

Collaboration between various stakeholders, including governments, NGOs, research institutions, and farmers' organizations, is crucial to finding effective solutions and improving the overall well-being of farming Communities

**Short-term and long term action plan for possible solutions for the problems identified and that could be recommended to the concerned authorities for implementation.**

### **Short-Term Action Plans:**

#### **Agricultural Training and Extension Services:**

- Organize training sessions and workshops for farmers on modern farming techniques, pest management, and soil fertility enhancement.
- Collaborate with agricultural experts to provide guidance and technical support to farmers in implementing best practices for crop production.

#### **Access to Inputs and Resources:**

- Establish accessible input supply centers for seeds, fertilizers, pesticides, and other necessary resources at affordable prices.
- Facilitate easy access to credit and financial services to help farmers procure essential inputs.

#### **Farmer Support Centers:**

- Establish farmer support centers where farmers can seek guidance, access information, and receive technical assistance on various aspects of crop production.
- Provide a platform for farmers to exchange knowledge and share experiences through farmer group meetings and workshops.

### **Long-Term Action Plans:**

#### **Research and Development:**

- Invest in agricultural research and development to develop improved crop varieties that are resilient to pests, diseases, and adverse weather conditions.
- Foster collaborations between research institutions, universities, and farmers to develop innovative farming techniques and practices.

#### **Infrastructure Development:**

- Improve rural infrastructure, including roads, transportation, and storage facilities, to ensure smooth movement of agricultural produce from farms to markets.
- Invest in the development of cold storage facilities to reduce post-harvest losses and increase marketability of perishable crops.

#### **Financial Support and Insurance:**

- Introduce farmer-friendly insurance schemes to protect farmers against crop failure, natural disasters, and price fluctuations.

### **Conclusions:**

These short-term and long-term action plans address the identified problems and provide a roadmap for sustainable agricultural development. It is crucial to collaborate with relevant government departments, agricultural institutions, NGOs, and farmers' organizations to implement these recommendations effectively. Regular monitoring and evaluation should be conducted to assess the impact of the interventions and make necessary adjustments for continuous improvement.

**Description of the Community awareness programme/s conducted w.r.t the problems and their outcomes.**

The community awareness program conducted in relation to the identified problems in crop production was a proactive initiative aimed at educating and engaging the community members. The program focused on raising awareness about the challenges faced in crop production and promoting sustainable agricultural practices.

**Awareness Workshops and Seminars:**

- a. The program organized a series of awareness workshops and seminars to educate farmers and community members about the specific problems identified in crop production, such as pest infestation, soil degradation, water scarcity, market constraints, and climate change impacts
- b. The workshops and seminars provided a platform for interactive discussions, allowing participants to ask questions, exchange ideas, and learn from each other's experiences.

**Outcome:**

The awareness workshops and seminars helped in disseminating crucial information, increasing awareness among farmers and community members about the problems in crop production, and fostering a deeper understanding of the need for sustainable agricultural practices.

**Demonstrations and Field Visits:**

- a. The program conducted field demonstrations and visits to showcase practical solutions and best practices for addressing the identified problems.
- b. We demonstrated sustainable agricultural techniques such as integrated pest management, soil conservation, efficient irrigation methods, and crop diversification.

**Outcome:**

The demonstrations and field visits provided a tangible and visual experience for farmers and community members, instilling confidence in adopting sustainable practices and encouraging them to replicate these techniques on their own farms.

**Formation of Farmer Groups and Cooperatives:**

The program encouraged the formation of farmer groups and cooperatives to promote collective action and address the identified problems collaboratively.

Farmer groups were facilitated in accessing collective bargaining power, strengthening market linkages, and exploring value-added opportunities.

**Outcome:**

The formation of farmer groups and cooperatives resulted in improved collaboration, shared learning, and increased market access for farmers. It enhanced their collective strength and enabled them to address common challenges more effectively.

**Conclusion:**

The community awareness program achieved several positive outcomes, including increased awareness and understanding of the identified problems in crop production, improved knowledge and skills among farmers, and the promotion of sustainable agricultural practices

# **REPORT OF THE MINI-PROJECT**

## **1)Introduction:**

### **Background:**

Crop production is a vital component of global food security and agricultural sustainability. However, various challenges that are hinder their crop production, This mini project aimed to explore the challenges are faced during crop production and propose effective solutions to address them. Through this extensive research, data analysis this project provides valuable insights and recommendations to support the farmers in overcoming their crop production practices.

### **Objectives:**

- Identify and analyze the major challenges faced during crop production.
- Explore the potential impacts of these challenges on agricultural productivity and food security.
- Investigate potential solutions and strategies to overcome these challenges.
- Provide recommendations to enhanced crop production efficiency and sustainability.

## **2)Methodology:**

To conduct this mini project, a combination of research methods are employed. The primary research involved literature review research papers paper and relevant agricultural publications. Additionally questions were conducted with farmers, agricultural experts to gather practical insights and real-world experiences regarding challenges are faced during crop production. The collected data was then analyzed and synthesized to provided a comprehensive understanding about the topic.

## **3) overview of challenges Faced During Crop Production:**

### **Climate change:**

climate changes are poses significant challenges to crop production. Increasing temperatures, erratic, rainfalls patterns, droughts, floods extreme weather conditions can disrupt crop growth and development. Challenges in climate can Effect the timing of planting and harvesting, alter pests and diseases dynamics and reduce water availability for irrigation, farmers need to adapt to these changing conditions by implementing climate agricultural practices and utilizing weather forecasting to make informed decisions.

### **Pests and disease management:**

Pests and diseases can cause substantial damage of crops, resulting in yield losses and reducing the quality. Invasive species, insect species and weeds are affected crop health. Managing these pests and diseases often requires the use of pesticides but excessive on chemicals can have negative impact. IPM approaches, including global control, crop rotations and cultural practices, can help to minimize the pest and disease damage while reducing on chemical impact.

#### **Soil Degradation:**

Including soil erosion, nutrient depletion, soil compaction is a major challenge in crop production. Intensive agricultural practices, improper land management and erosion from water and wind contribute to soil degradation.

Degraded soils have reduced fertility and water-holding capacity, limiting crop productivity. Sustainable soil management practices, such as conservation tillage, cover cropping, crop rotation, enhanced nutrient availability, and improve soil structure.

#### **Limited access to resources and technology:**

Limited access of quality of seeds, fertilizers, irrigation facilities, machinery and financial can hinder productivity and profitability. Lack of knowledge and training on modern agricultural practices and technologies also poses challenges.

Enhancing farmer access to display inputs, providing financial support and agricultural credit, and promoting farmer education and training programs can address these limitations and empowers farmers to improve the crop production practices.

By addressing these challenges farmers can enhanced crop productivity, promoted the sustainable agricultural practices. Implementation of appropriate strategies, adoption of innovative technologies and strengthen the farmer support system to essential to overcome this challenges and ensure sustainable crop productivity.

### **4) Impact of challenges on crop production and quality:**

#### **Reduction in crop productivity:**

Challenges faced during crop production can lead to a reduction in crop yield, affecting overall productivity and food availability. Various factors contribute to yield reduction, such extreme weather conditions and soil degradation.

Example: In regions affected by prolonged droughts, crops like corn, Groundnut may experience wilting and reduce growth, ultimately leading to lower yields at harvest times.

#### **Decreased Nutritional value:**



Challenges in crop production can also impact the nutritional value of crops, affecting overall quality and health benefits. Soil degradation and nutrient deficiencies can lead to decreasing nutrient content in crops. Additionally, pest and disease attacks can damage the crops, leading to decrease in their nutrient quality.

Example: When crops such as lemon which is essential of vitamins are effected by pests their nutritional values are compromised, leading to reduced availability of important nutrients for human consumption.

#### **Increased production costs:**

The challenges faced during crop production can result in increased production costs for farmers. For instance, combating pests and diseases often leads to use of pesticides and other control measures.

Example: Farmers dealing with increased pest pressure due to changing climatic conditions may need to invest in advance pest controls methods leading to increased production cost.

### **5) strategies to overcome challenges:**

#### **Climate-Smart Agricultural practices:**

Climate-Smart Agricultural practices are aimed at adapting to mitigating the impacts of climate change on crop production. These practices focus on improving resilience, resource efficiently.

- Conservation agriculture: This involves practices like minimum tillage, cover cropping and crop rotation which can help conserve the moisture, reduced the erosion and enhanced the soil health. For Example farmer can adopt minimum tillage techniques. To conserve the moisture and improve soil structure.
- Agroforestry: Combining trees with crops can provide multiple benefits, including improved soil fertility, enhanced microclimate and diversity of income sources. For instance, integrating fruit within crop fields can provide shade, reduce evaporation and contribute to soil nutrient cycling.

#### **Integrated pest Management (IPM):**

Focuses on minimizing pests and diseases through a combination of measures and targeted interventions, while minimizing reliance on chemical pesticides. Example IPM strategies.

- Biological control: using natural enemies like insects, predators to control pests. For instance, releasing ladybugs to control aphid populations in a crop fields.
- Crop rotation: rotating crops with different pest can disrupts pest life cycles and reduced the buildup of pest populations. For example, alternating between leguminous and non- leguminous crops can manages nematode infestations.

#### **Soil conservation and Management Techniques:**

The aims to improve soil health, prevent erosion, and enhanced nutrient availability. Examples of soil conservation and management techniques are included:

- Cover cropping: planting cover crops during fallow periods between cash crops helps to protect the soil from erosion, improves organic matter content, enhanced nutrient cycling.
- Organic amendments: Applying organic matters such as compost or manure to the soil enhances its structure, water-holding capacity, and nutrient availability. Farmers can incorporate organic amendments into the soil before planting crops.

#### Improving Access to Resources and Technology:

Enhancing farmers' access to essential resources and advanced agricultural technologies can help to overcome challenges and improve crop productivity. Example of Improving Access to Resources and Technology includes:

- Seeds banks and quality seed distribution: Establishing seed bank and ensure the farmers accessed high quality, climate-adapted seeds can enhanced the crop resilience. Providing to certificate seeds and promoting seed saving practices can help us to sustainable crop production.
- Information and communication technologies: Utilizing mobile apps, SMS services, or online platforms to provide farmers with timely information on weather forecasting, pest and diseases alerts, and best agricultural practices. These technologies can help farmers make informed decisions and optimize their crop production.

By implementing these strategies, farmers can overcome challenges during crop production, enhanced productivity, and ensure sustainable agricultural practices. However, the suitability of these strategies may vary depending on local conditions, crop types and available resources. It is essential to adopt these strategies to specific contexts and providing necessary support to farmers for successful implementation.

## **6) Recommendations for Enhancing crop production Efficiency and sustainability.**

#### **Promoting Research and development:**

Investing in research and development is crucial for advancing crop production techniques, developing improved varieties, and finding innovative, developing improved varieties, and finding innovative solutions to address challenges includes:

- Funding research institutions and universities to conduct studies on crop breeding, climate-resilient practices, sustainable farming technologies.

- Collaborating with agricultural scientists and experts to develop crop varieties that are resistant to pests, diseases, and environment stresses.
- Supporting research on precision agricultural, remote sensing and data-driven us and improve productivity.

### **Enhancing Farmer Education and Training:**

Providing education and training opportunities for farmers is essential for improving their knowledge and skills in crop production. Recommendations include:

- Organizing training programs and workshops on modern farming techniques, climate-smart practices and climate-smart practices and resource management.
- Promoting farmer-to-farmer knowledge sharing.
- Facilitating access to vocational and agricultural education to enhanced technical skills and understanding of crop production systems.

### **Strengthening Extension Services:**

Effective extension services play a crucial role in disseminating knowledge, best practices, and technologies advancements to farmers. Actions to strengthen extension services include:

- Training and equipping extension workers with up-to-date information on crop production management practices, climate smart techniques.
- Utilizing digital platforms, such as mobile apps and online resources, to provide time and accessible agricultural information to farmers.

Example: The “Krishi Vigyan Kendra” program in India establishes centers at the district level to provide expert advice and training to farmers, disseminating knowledge on improved crop management practices and soil health management.

### **Encouraging Sustainable Farming Practices:**

Promoting sustainable farming practices helps enhance crop production efficiency while minimizing negative environmental impacts. Some recommendations include:

Implementing conservation agriculture techniques, such as minimum tillage, cover cropping, and crop rotation, to improve soil health and water retention.

Encouraging the use of organic fertilizers, composting, and integrated nutrient management practices to enhance soil fertility and reduce dependence on chemical inputs.

Promoting water-efficient irrigation techniques, such as drip irrigation or precision irrigation, to optimize water use and reduce water wastage.

Example: The Sustainable Agriculture Research and Education (SARE) program in the United States supports projects that promote sustainable farming practices, such as cover

cropping, crop diversification, and integrated pest management, to enhance soil health, reduce chemical inputs, and improve overall farm sustainability.

## **7) Case Studies and Success Stories:**

### **Soil Health Restoration Projects:**

Soil health restoration projects have demonstrated the effectiveness of implementing soil conservation and management techniques to improve soil fertility and productivity. One successful example is the "Soil Health Card" initiative in India, which aims to assess and provide recommendations for soil health improvement to farmers across the country.

Example: Under the Soil Health Card initiative, soil samples from farmers' fields are analyzed to determine soil nutrient levels and provide personalized recommendations. Farmers are then guided on the appropriate use of organic amendments, balanced fertilizer application, and other soil management practices based on their specific soil health conditions. This initiative has helped farmers improve soil fertility, increase crop yields, and reduce input costs by optimizing fertilizer use.

## **8) conclusion:**

This mini project highlighted the challenges faced by farmers during crop production and proposed practical solutions to address them. By implementing the recommendations, farmers can enhance their crop production practices, improve productivity, and achieve sustainable agricultural outcomes. It is crucial for stakeholders, policymakers, and farmers to work together to address these challenges and create a supportive environment for agricultural development.

## **CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS OF THE MINI PROJECT**

### **Conclusion**

In conclusion, farmers face numerous challenges during crop production, which can significantly impact their productivity and livelihoods. These challenges range from environmental factors such as climate change, water scarcity, and pest outbreaks to socioeconomic issues like access to credit and markets. However, by recognizing and addressing these challenges, we can work towards sustainable and resilient agricultural systems.

Our research has highlighted several key recommendations to overcome these challenges. Implementing sustainable farming practices, improving water management, enhancing pest and disease management, providing access to credit and insurance, and prioritizing farmer education and training are crucial steps in addressing the challenges faced by farmers.

By adopting organic and natural farming methods, utilizing efficient irrigation systems, and promoting integrated pest management strategies, farmers can reduce their reliance on harmful chemicals, conserve water resources, and minimize environmental impacts. Access to credit and insurance schemes will provide financial security and enable farmers to invest in modern technologies and inputs.

Additionally, providing comprehensive training programs and agricultural extension services will empower farmers with the knowledge and skills needed to adopt innovative techniques and adapt to changing conditions. Collaboration among farmers, policymakers, researchers, and agricultural institutions is essential to create a supportive ecosystem for knowledge sharing, innovation, and sustainable agricultural practices.

It is vital for governments, NGOs, and stakeholders to prioritize investments in research, infrastructure, and capacity building to support farmers in overcoming these challenges. By working together and implementing these recommendations, we can enhance the resilience, productivity, and well-being of farmers, ensuring a stable and sustainable for present and future generations.



## PHOTOS AND VIDEO LINKS





