

A

Community Service Project Report on

BUILDING DIGITAL SKILLS FOR RURAL EMPOWERMENT

Submitted in partial fulfilment of the requirements

for the award of the degree of

**BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING**

Submitted by

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O.SAI CHARAN RAJ	21AK1A05C7

Under the esteemed guidance of

Mrs. V S GAYATHRI, M.Tech.,

Assistant professor, Computer science and
Engineering



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES
(AUTONOMOUS)**

(Approved by AICTE, New Delhi & Permanent Affiliation to JNTUA, Anantapuramu. Three B. Tech Programmes (CSE, ECE&CE) are accredited by NBA, New Delhi. Accredited by NAAC with 'A' Grade, Bangalore. Accredited by Institution of Engineers (India), KOLKATA. A-grade awarded by AP Knowledge Mission. Recognized under sections 2(f)& 12(B) of UGC Act 1956.)

Tirupati- 517520.
2023-2024

**ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI
(AUTONOMOUS)**



CERTIFICATE

This is to certify that the community service project work entitled, “Building Digital Skills For Rural Empowerment ” done

by

P. Naveen Kumar Reddy	21AK1A0598
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*is being submitted in partial fulfillment of the requirements for the award of the degree of **BACHELOR OF TECHNOLOGY** in **COMPUTER SCIENCE AND ENGINEERING** to Annamacharya Institute of Technology and Sciences, Tirupati, is a record of bonafide work carried out by them under my guidance and supervision.*

Signature of the Supervisor

Mrs. V S GAYATHRI, M. Tech,

Assistant Professor

Department of Computer
science and Engineering

Head of the Department

**Mr. B.RAMANA REDDY,
M. Tech, (Ph.D.)**

HOD & Professor

Department of Computer
science and Engineering

DATE

CSP COORDINATOR

CSP CONVENER

Student's Declaration

I, **P. Naveen Kumar Reddy**, a student of B.Tech Program, Reg. No. **21AK1A0598** of the Department of Computer science and Engineering, Annamacharya Institute of Technology and Sciences, Tirupati (Autonomous) College do hereby declare that I have completed the mandatory community service "**Building Digital Skills For Rural Empowerment**" under the Faculty Guideship of **Mrs. V S Gayathri**, Assistant Professor Department of Computer science and Engineering in Annamacharya Institute of Technology &Sciences (Autonomous)

,Tirupati College

(Signature and Date)

Team Members

P.NAVEEN KUMAR REDDY	21AK1A0598
K.NIKHIL	21AK1A05A2
G.POORNACHANDRA	21AK1A05A5
U.SAI SARAN	21AK1A05C5
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ACKNOWLEDGEMENTS

It is our insightful duty and pleasure to express our gratitude to all those who helped us in completion of this work successfully.

We would like to express our sincere gratitude to our supervisor **Mrs. Ms. V S Gayathri**, Assistant professor, Department of Computer science and Engineering, AITS, Tirupati, for her constant help, kind co-operation and encouragement in completing the work successfully. We are thankful for her careful verification of the manuscript in spite of her busy schedule.

With immense pleasure I would like to extend our sincere thanks to our CSP Convener, **Ms..V S Gayathri**, Assistant professor ,Department of Computer science and Engineering, AITS, Tirupati , For his guidance, very great motivation, encouragement, keen interest and support for carrying out our project successfully.

It is our privilege to record our deep indebtedness to **Mr.B. Ramana Reddy**, HOD, Department of Computer science and Engineering, AITS, Tirupati for his valuable guidance and constant cooperation throughout this work.

We are very much thankful to all the Internal Departmental Committee members for their valuable suggestions in all reviews and letting our work to go smoothly. We are thankful to all our B.Tech colleagues for their co-operation and faculty members, Lab Technicians for their support in completion of our work.

It is our pleasure to express sincere thanks to **Prof. C. Nadhamuni Reddy**, Principal, Annamacharya Institute of technology and Sciences, Tirupati and **Sri. C. Gangi Reddy**, Hon Secretary of Annamacharya Educational Trust for providing good infrastructure and facilities in our college.

Last but not least we feel more responsible to express our sincere thanks friends and family members for their moral support, time without which the successful completion of the work would not have been possible.



ANAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES : TIRUPATI (AUTONOMOUS)

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Accredited by NAAC in "A" Grade & a few programmes accredited by NBA, New Delhi.

Tirupati
Date: 19-5-2023

To

Dear sir/Madam

Sub: Higher Education department and Board for Community development initiative-community service project- request to permit our students and supervisor to study the community -reg

As per the directions of the Board of community development and APSCHE of AP govt and as per the curricular requirements of B. Tech students admitted from 2020 onwards, all II B. Tech students should take up community service project in summer with the batch size of 10-15.

Please allow our students to conduct the survey, explore the problems, apply engineering analysis/techniques to find improvements and also do certain forecasts which will be helpful for the government to take timely measures.

Please discuss with the students and best utilise the services of our faculty and project students to the tasks connected to the community development like survey to collect data, data analysis, digital literacy and low-cost models for effectiveness.

Following are the batch students and mentor assigned to them, approaching you on the subject and request you to permit them.

S. No	Register. No	Name of the student	Supervisor
1	21AK1A05A5	GOGALA POORNA CHANDRA	Ms. V S Gayathri M.Tech Assistant Professor Department of CSE
2	21AK1A05A2	K.NIKHIL	
3	21AK1A05A9	M.RAJESH NAYAK	
4	21AK1A05C5	U.SAI SARAN	
5	21AK1A05B6	G.LINGA RAJU	
6	21AK1A05C7	O.SAI CHARAN	
7	21AK1A05C8	Y.SAI REDDY PUNEETH REDDY	
8	21AK1A0598	P.NAVEEN	
9	21AK1A05A3	S.NITHIN REDDI	
10	21AK1A05A4	K.NITHIN KUMAR REDDY	

With Regards

SARPANCH
VEDALLACHERUVU GRAM PANCHAYAT
Renigunta Mandal, Chittoor Dist.

Yours Faithfully,

Principal
AITS TIRUPATI
PRINCIPAL
ANAMACHARYA INSTITUTE OF
TECHNOLOGY & SCIENCES
VENKATAPURAM (VIII.)
RENIGUNTA (M), TIRUPATI-517 520

ABSTRACT

Digital Skills in the workplace can include original content creation , e-commerce, network and information Security , UX/UI design , digital marketing, social media marketing and data analytics. Advanced digital skills Range from data visualization and basic programming skills to data engineering. “Digital literacy is the ability of individuals and communities to understand and use digital technologies for meaningful actions within life situations ”. It would bring the benefits of ICT to daily lives of rural population especially in the areas of Healthcare, Livelihood generation and education

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CHAPTER 1: INTRODUCTION OF VILLAGE

1.1. Brief description of the community

Community Name	:	Tuda Quarters MIG, Mangalam, Tirupati, Andhra Pradesh
Area	:	0.34 km ²
Population	:	812
Population Density	:	2399 people per km ²
Male Population	:	408
Female Population	:	404
Nearest airport & distance	:	Tirupati Airport, 6.32 km
Nearest Railway Station & Distance	:	Tiruchanur, 2.64 km
Water Facility	:	Govt water municipal supply available
Electricity	:	

My village's name is Mangalam. Mangalam is located near Tirupati in Chittoor District, Andhra Pradesh, with the postal code 517507. The local languages spoken in Mangalam are Telugu and Tamil. Some famous temples in Mangalam include the Anjaneya Swami temple, Gangamma temple, and Lord Shiva temple. The Gangamma festival is celebrated grandly every year. Near Mangalam, we have several schools and colleges:

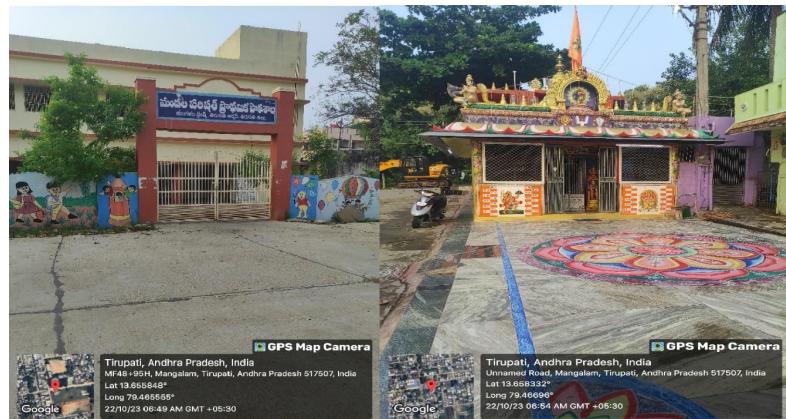
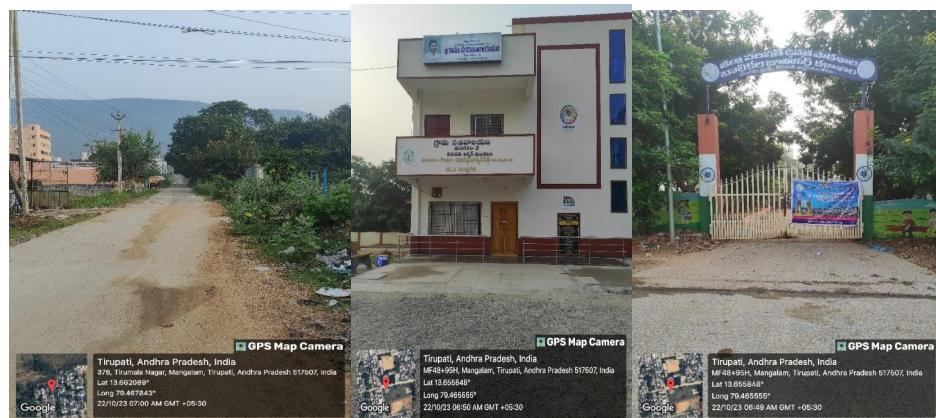
- i. Atlantic The World School
- ii. Spring Dale Public School
- iii. Sree Rama Engineering College
- iv. Sri Venkateswara Engineering College
- v. Z. P. High School, Mangalam (Government-run)

Additionally, there are Grama Sachivalayams present in Mangalam, and clinics are available. Mangalam is situated along State Highway connecting Tirupati to Kadapa, and there is agriculture land in the vicinity,

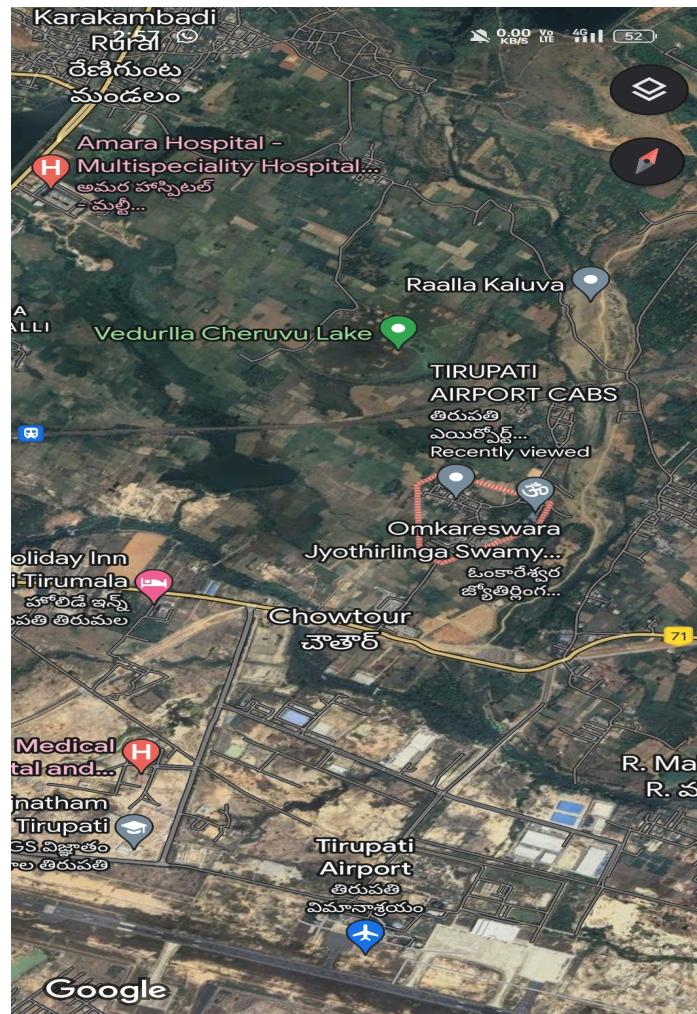
including places like Chennayagunta, Balakrishna Puram, and Venkata Puram, among others.

The post office is located in Mangalam, where you can find some trees and crops. The primary occupation of the villagers in my village is farming. The people in my village are very helpful, and they lead happy lives. There are also some ponds in Mangalam. In my village, we celebrate every festival together. About twenty thousand people live in my village, with the majority of them being farmers. My village is situated near the RTO office, and it is home to various castes and communities. Here, we have access to fresh and organic vegetables and fruits. The village is noticeably cooler than the city during the summer.

1.2. Village important places



1.3. Village map



CHAPTER 2: OVERVIEW OF THE SURVEY

2.1. Socio Economic Survey forms with Geotag Photos



ANNAMACHARYA INSTITUTE OF TECHNOLOGY
(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey Form

Name of the Student: P. Alareen Munir Reddy H.T. No : 21AK1AD598

Year/Sem : II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent: N Lakshmamma

Address: 1-34, BC colony, vedhaida cheruvu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	N Lakshmamma	45	Female	-	Houserwife

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
- 2. Semi Pucca
- 3. Pucca
- 4. Apartment
- 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Tank/ Pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

% 1. Yes. % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: - No

B) Primary Schools: - Yes

C) Secondary Schools: - No

D) Colleges: - No

E) Health Centre (PHC/CHC): - No

F) Hospitals: - No

G) Youth clubs: - No

H) Sports clubs: - No

I) Environment clubs: - No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: - No

K) Krishi Vigyan Kendra: - No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaela Choruvu	Sanitation
2	Vedhaela Choruvu	Medication
3	Vedhaela Choruvu	Drainage
4	Vedhaela Choruvu	Wells
5	Vedhaela Choruvu	Pollution

Signature of the Respondent:

M. J. L. S.

Signature of the Supervisor

SG

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Community Service Project

Socio Economic Survey From

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK1AOB98

Year/Sem : II^{II}

Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : Bojja Yashwanth

Address: 1-75, BC colony, Vedhadau Chettuval

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	Bojja yashwanth	34	Male	10 th	Autodriver
2.	Bojja Gita	30	Female	Inter II	House wife
3.	Bojja Dhruva	10	Male	4 th class	Student
4.	Bojja Rishipriya	8	Female	2 nd class	Student

2. Religion: Hindu

3. Caste: BC/D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
- 2. Semi Pucca
- 3. Pucca
- 4. Apartment
- 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Panchayat _____

Yes

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House ✓
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared ✓ by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

%✓ 1. Yes, % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: Yes

B) Primary Schools: Yes

C) Secondary Schools: No

D) Colleges: No

E) Health Centre (PHC/CHC): No

F) Hospitals: No

G) Youth clubs: No

H) Sports clubs: No

I) Environment clubs: No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: No

K) Krishi Vigyan Kendra: No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaala cheruvu	Pollution
2	Vedhaala cheruvu	Drainage
3	Vedhaala cheruvu	garbage
4	Vedhaala cheruvu	water
5	Vedhaala cheruvu	e-waste

Signature of the Respondent:

B. Yamini

Signature of the Supervisor

6

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(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey From

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK1AC098
Year/Sem : II / II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : T. Vinod

Address: 1-29, BC colony, Vedhoda cheenu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	T. Vinod	30	Male	Inter	Driver
2.	T. Latha	28	Female	-	Housewife
3.	T. Pranathi	05	Female		

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
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Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

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 → 3. Handpump/bore well
 → 4. Well
 → 5. Tank/pond
 → 5. Tank/ Pond
 → 6. Others: (specify): _____

- 1. Private (in your own house)
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 → 3. Open fields
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A) Anganwadi / Play School: - Yes

B) Primary Schools: - Yes

C) Secondary Schools: - No

D) Colleges: - No

E) Health Centre (PHC/CHC): - No

F) Hospitals: - No

G) Youth clubs: - No

H) Sports clubs: - No

I) Environment clubs: - No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: - No

K) Krishi Vigyan Kendra: - No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhala chevuru	Road
2	Vedhala chevuru	water
3	Vedhala chevuru	Pollution
4	Vedhala chevuru	Electricity
5	Vedhala chevuru	garbage

Signature of the Respondent:

T. Vinod

Signature of the Supervisor



ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI
 (AUTONOMOUS)
 DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey From

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK170598
 Year/Sem : II/II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : T- Kranti Kumar

Address : 1-81, BC colony, Vedhaoda Cheruvu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	T. Kranti Kumar	34	Male	Integ	Farmers
2.	T. Savantti	30	Female	B.Sc Nursing	Nurse
3.	T. Cherishma	8	Female	2nd	student
4.	T. Sai	7	Male	1st	student

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

- ✓
 1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
 → 2. Semi Pucca
 → 3. Pucca
 → 4. Apartment
 → 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Others: (specify): _____

Instruction: TICK ONLY ONE

- 1. Private (in your own house)
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- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

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A) Anganwadi / Play School: yes

B) Primary Schools: No

C) Secondary Schools: No

D) Colleges: No

E) Health Centre (PHC/CHC): No

F) Hospitals: No

G) Youth clubs: No

H) Sports clubs: No

I) Environment clubs: No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: No

K) Krishi Vigyan Kendra: No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vellore chennu	drainages
2	Vellore chennu	roads
3	Vellore chennu	water
4	Vellore chennu	electricity
5	Vellore chennu	e-waste


Signature of the Respondent:


Signature of the Supervisor

Community Service Project

Socio Economic Survey Form

Name of the Student: P. Naveen Kumar Reddy H.T. No : 21AKU00B98
 Year/Sem : II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent: T. Charan

Address: 2-6, BC-D colony, Vedadla cheruvu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	T. Charan	22	Male	B.Tech	Student
2.	T. Veeraih	52	Male	10th	Farmers
3.	T. Kumarai	44	Female	10th	House wife
4.	T. Rajesh	18	Male	Inter	Student

2. Religion: Hindu

3. Caste: BC - D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
- 2. Semi Pucca
- 3. Pucca
- 4. Apartment
- ✓ 5. Independent house/Bungalow

7. Where do you get your Drinking Water?

8. What toilet arrangements do you have?

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

% 1. Yes. % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: Yes

B) Primary Schools: Yes

C) Secondary Schools: - No

D) Colleges: - No

E) Health Centre (PHC/CHC): - No

F) Hospitals: - No

G) Youth clubs: - No

H) Sports clubs: - No

I) Environment clubs: - No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: - No

K) Krishi Vigyan Kendra: - No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaela cheruvu	Drainage
2	Vedhaela cheruvu	Sanitation
3	Vedhaela cheruvu	Roads
4	Vedhaela cheruvu	garbage
5	Vedhaela cheruvu	Pollution

T Chown

Signature of the Respondent:

6

Signature of the Supervisor

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI
(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey From

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK1AD098

Year/Sem : II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : J. Jayanthi

Address: 2-12, BC colony,

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	J. Jayanthi	50	Female	-	Housewife
2.	J. Guirappa	60	Male	5 th class	Farmers
3.	J. Teja	28	Male	Degree	Plumber

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
→ 2. Semi Pucca
→ 3. Pucca
→ 4. Apartment
→ 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Tank/ Pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

% 1. Yes. % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: Yes

B) Primary Schools: Yes

C) Secondary Schools: No

D) Colleges: No

E) Health Centre (PHC/CHC): No

F) Hospitals: No

G) Youth clubs: No

H) Sports clubs: No

I) Environment clubs: No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: No

K) Krishi Vigyan Kendra: No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaala cheruvu	Road
2	Vedhaala cheruvu	Pollution
3	Vedhaala cheruvu	water
4	Vedhaala cheruvu	garbage
5	Vedhaala cheruvu	electricity

Signature of the Respondent:

T. Natarajan

Signature of the Supervisor

SD

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI

(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey Form

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK1P0598

Year/Sem : II (II) Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : K. Gurrama

Address: 1-39, BC-colony, Vedhada cheruvu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	K. Gurrama	63	Female	-	Housewife
2.	K. Chengappa	67	Male	5th class	Farmen
3.	K. Siva	40	Male	10th class	Crore

2. Religion: Hindu

3. Caste: BC-O

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None
-

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE 1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
- 2. Semi Pucca
- 3. Pucca
- 4. Apartment
- 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

% 1. Yes. % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

- A) Anganwadi / Play School: — yes
- B) Primary Schools: — yes
- C) Secondary Schools: — no
- D) Colleges: — no
- E) Health Centre (PHC/CHC): — no
- F) Hospitals: — no
- G) Youth clubs: — no
- H) Sports clubs: — no
- I) Environment clubs: — no
- J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: — no
- K) Krishi Vigyan Kendra: — no

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaoda Cheruvu	Education
2	Vedhaoda Cheruvu	Epidemic
3	Vedhaoda Cheruvu	Drainages
4	Vedhaoda Cheruvu	Sanitation
5	Vedhaoda Cheruvu	Electricity

Signature of the Respondent:

K R S S

Signature of the Supervisor

60

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI
(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey Form

Name of the Student : P.Naveen Kumar Reddy H.T. No : ZIAKIP0B98
Year/Sem : II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : M.Rajamma

Address: 1-87, BC-colony, Vedhanda chevuru

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	M.Rajamma	55	Female	3 rd class	Housewife
2.	M.Tiriyalu	59	Male	5 th class	Farmen

2. Religion: Hindu

3. Caste: OC

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
→ 2. Semi Pucca
→ 3. Pucca
→ 4. Apartment
→ 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

% 1. Yes. % 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: — No

B) Primary Schools: Yes

C) Secondary Schools: — No

D) Colleges: — No

E) Health Centre (PHC/CHC): — No

F) Hospitals: — No

G) Youth clubs: — No

H) Sports clubs: — No

I) Environment clubs: — No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: — No

K) Krishi Vigyan Kendra: — No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhaala cheruvu	Drainage
2	Vedhaalae cheruvu	Sanitation
3	Vedhaala Cheruvu	water
4	Vedhaala Cheruvu	caution
5	Vedhaala Cheruvu	meditation

Signature of the Respondent:

M P Wali

Signature of the Supervisor

SS

Community Service Project

Socio Economic Survey Form

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK11AC0398

Year/Sem : II / II Branch : CSE

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : T-Savitramma

Address: 1-43/1, BC-colony, Vedanta Chettu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	T.Savitramma	60	Female	2 nd Class	Housewife
2.	T.Raghavulu	65	Male	7 th Class	Famer

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
→ 2. Semi Pucca
→ 3. Pucca
→ 4. Apartment
→ 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

- ↗ 1. Tap in the House
- ↗ 2. Common Tap
- ↗ 3. Handpump/bore well
- ↗ 4. Well
- ↗ 5. Tank/pond
- ↗ 6. Tank/ Pond
- ↗ 7. Others: (specify):

- ↗ 1. Private (in your own house)
- ↗ 2. Common (shared by others)
- ↗ 3. Open fields
- ↗ 4. Others: Specify:

9. Do You Have Mobile Phone

%o 1 Yes. %o 2. No

10. Which of the following are there in the survey area? Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: - Yes

B) Primary Schools: - Yes

C) Secondary Schools: - No

D) Colleges: - No

E) Health Centre (PHC/CHC): - No

F) Hospitals: - No

G) Youth clubs: - No

H) Sports clubs: - No

I) Environment clubs: - No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: - No

K) Krishi Vigyan Kendra: - No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhalla cheruvu	→ -drainage
2	Vedhalla cheruvu	→ drainage
3	Vedhalla cheruvu	→ sanitation
4	Vedhalla cheruvu	→ water
5	Vedhalla cheruvu	→ pollution

Signature of the Respondent:

T G J R S

Signature of the Supervisor

60

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: TIRUPATI
(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Community Service Project

Socio Economic Survey From

Name of the Student : P. Naveen Kumar Reddy H.T. No : 21AK11A0598

Year/Sem : II Branch : C.S.E

Part A: Socio-Economic and Demographic Profile

Name of the Respondent : T. Venkatachalam

Address: 1-91, BC colony, Vedhoda Thoruvu

1. Family Details

S.No	Name of the Family Member	Age	Gender	Education Qualification	Profession
1.	T. Venkatachalam	49	Male	Inter	Farmer
2.	T. Nanjula	49	Female	Degree	Housewife
3.	T. Rohith	26	Male	Degree	Student
4.	T. Pradeep	24	Male	Degree	Student

2. Religion: Hindu

3. Caste: BC-D

4. Do you have transport?

1. Four-Wheeler 2. Two-Wheeler 3. Tractor 4. Bullock Cart 5. None

5. Does the respondent's house have electricity? Instruction: OBSERVE AND WRITE

1. Yes. 2. No

6. Type of House

Instruction: OBSERVE AND TICK ONE

- 1. Hut
- 2. Semi Pucca
- 3. Pucca
- 4. Apartment
- 5. Independent house/Bungalow

8. What toilet arrangements do you have?

7. Where do you get your Drinking Water?

yes

Instruction: TICK ONLY ONE

Instruction: TICK ONLY ONE

- 1. Tap in the House
- 2. Common Tap
- 3. Handpump/bore well
- 4. Well
- 5. Tank/pond
- 6. Tank/ Pond
- 6. Others: (specify): _____

- 1. Private (in your own house)
- 2. Common (shared by others)
- 3. Open fields
- 4. Others: Specify: _____

9. Do You Have Mobile Phone

%o 1. Yes. %o 2. No

10. Which of the following are there in the survey area: Provide a brief description, indicating number, type etc.

A) Anganwadi / Play School: Yes

B) Primary Schools: Yes

C) Secondary Schools: No

D) Colleges: No

E) Health Centre (PHC/CHC): No

F) Hospitals: No

G) Youth clubs: No

H) Sports clubs: No

I) Environment clubs: No

J) Village Knowledge Centre/Common Multi Media Centre/Common Service Centre: No

K) Krishi Vigyan Kendra: No

11. Name five most pressing problems faced by your Neighbourhood?

(Indicate issue: e.g. Health, Epidemic, Environment, Pollution, Education, Drainage, Roads, Electricity, drinking water, sanitation service delivery of Government Programmes etc)

S.no	Area	Issue
1	Vedhastra gramu	water
2	"	current
3	"	drainage
4	"	medication
5	"	pollution

Signature of the Respondent:

T. Venkateshwaran

Signature of the Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 1ST WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Reading Chapters	Reading	Not Applicable	Mary
Day-2	Survey in House Environment	Surveying	villagers	Mary
Day-3	Survey in Neighborhood Environment	Surveying	villagers	Mary
Day-4	Survey in College Environment	Surveying	Students	Mary
Day-5	Post Survey Forms	Analysis	Mentor	Mary
Day-6	Problem Tree Analysis	Analysis	Mentor	Mary

MILESTONE LOG REPORT FOR THE 1ST WEEK

MILESTONE LOG	
Top 5 Issues Identified-SDG	Agriculture issue - SDG - 2,3,7 plants are less - SDG - 13,15 Transportation problem-SDG - 11 Drainage problem - SDG - 6,7 Rain water wastage - SDG - 6,7
Problem Statement Framed	" Water Scarcity in Agriculture "
Research question framed	" How much water does in the agriculture industry used ? "
Who are your key stake holders	Farmers
What are all the types of surveys you will be doing , with whom and why	SOCIO Economic Survey Forms
List down the survey questions here	Economic Profile Features in village Problems faced by People

Mary
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 2nd WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Collecting & analyzing	Analyzing	Project batch members	Mun
Day-2	Data Quantitative-Statistical Analysis	Analyzing	Project batch members	Mun
Day-3	Collecting & Analyzing data	Analyzing	Project batch members	Mun
Day-4	Data Qualitative-Thematic Analysis	Analyzing	Project batch members	Mun
Day-5	(CBPR)	Reporting	Mentor	Mun
Day-6	Survey Reporting	Reporting	Mentor	Mun

MILESTONE LOG REPORT FOR THE 2nd WEEK

MILESTONE LOG	
Findings	* Rain water wastage * over flow of irrigation water * Low ground water table
Conclusions	* Scarcity of water * Droughts
Next Steps/Suggestions	* producing electricity by using waste water * Soil moisture sensors for not wasting the water.

Mun
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 3rd WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Mini Project Title	Project implementation	Project batch members	Mr.
Day-2	Project objectives fixed	Project implementation	Project batch members	Mr.
Day-3	Research methodology	Project implementation	Project batch members	Mr.
Day-4	Research methodology	Project implementation	Project batch members	Mr.
Day-5	Research methodology	Project implementation	Project batch members	Mr.
Day-6	Research methodology	Project implementation	Project batch members	Mr.

MILESTONE LOG REPORT FOR THE 3rd WEEK

MILESTONE LOG	
Final Plan	* Time line framing * Identification of areas under high water risk. * Project implementation
Materials	* Turbine * Sensors (Arduino) * Cardboard sheets * Electrical equipments * Batteries
Campaign plan	Tripati surrounding areas

My
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 4th WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Collecting materials	Working on model	Project batch members	Mur
Day-2	Preparing platforms	Working on model	Project batch members	Mur
Day-3	Preparing platforms	Working on model	Project batch members	Mur
Day-4	Making Prototypes	Working on model	Project batch members	Mur
Day-5	Making Prototypes	Working on model	Project batch members	Mur
Day-6	Experimental Testing	Working on model	Project batch members	Mur

MILESTONE LOG REPORT FOR THE 4th WEEK

MILESTONE LOG	
Final problem Statement	Being not aware of water scarcity in future
Final Project Idea/Plan/Solution	Water scarcity awareness programme by soil moisture sensors and generation of electricity by using waste water.
About Your Project	To raise awareness about water issues preparation of strategy water scarcity for addressing agriculture and electricity

Mur
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 5th WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Testing Prototype	Testing	CSP coordinator convenor	Mr.
Day-2	Testing Prototype	Testing	CSP coordinator convenor	Mr.
Day-3	Testing Prototype	Testing	CSP coordinator convenor	Mr.
Day-4	Testing Prototype	Testing	CSP coordinator convenor	Mr.
Day-5	Testing Prototype	Testing	CSP coordinator convenor	Mr.
Day-6	Feedback	Testing	CSP coordinator convenor	Mr.

MILESTONE LOG REPORT FOR THE 5th WEEK

MILESTONE LOG	
Prototype Next Steps	<ul style="list-style-type: none"> * Construction of village. * collection and purification of waste water. * set up of turbine. * Generation of electricity * collection of purified water * set up of Arduino sensors * Identifying soil moisture content.

My
Signature of Supervisor

Community Service Project-Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 6th WEEK
Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Feedback Improvise	Improvising Project	Project group members	Muz
Day-2	Feedback Improvise	Improvising Project	Project group members	Muz
Day-3	Feedback Improvise	Improvising Project	Project group members	Muz
Day-4	Feedback Improvise	Improvising Project	Project group members	Muz
Day-5	Feedback Improvise	Improvising Project	Project group members	Muz
Day-6	Feedback Improvise	Improvising Project	Project group members	Muz

MILESTONE LOG REPORT FOR THE 6th WEEK

MILESTONE LOG	
Start	* Soil sensor field setup
Stop	* Generation of electricity
Continue	* Water collecting and filtration.
Project Goals	* Water conservation * cost effective solution * utilizing waste water

Muz
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 7th WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Day	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Awareness Campaign	Campaigning	Farmers	Mrs _____
Day-2	Awareness Campaign	Campaigning	Farmers	Mrs _____
Day-3	Awareness Campaign	Campaigning	Farmers	Mrs _____
Day-4	Awareness Campaign	Campaigning	Farmers	Mrs _____
Day-5	Awareness Campaign	Campaigning	Farmers	Mrs _____
Day-6	Awareness Campaign	Campaigning	Farmers	Mrs _____

MILESTONE LOG REPORT FOR THE 7th WEEK

MILESTONE LOG	
Final Conclusions	* control the water limit usage by using soil moisture sensors * By waste water we can produce hydro electric power generation.

Mrs _____
Signature of Supervisor

Community Service Project -Water security awareness program by using Soil Moisture sensors and generation of electricity by using waste water

ACTIVITY LOG FOR THE 8th WEEK

Note: Kindly capture the geo-tag Photos while doing survey

Date	Activities taken up	Mode of the activity	Categories of Participants/Informants Involved	Signature of Supervisor
Day-1	Collecting information about village	Documentation	Project group members	Mr.
Day-2	Verify geotag photos with survey forms	Documentation	Project group members	Mr.
Day-3	Verify survey report	Documentation	Project group members	Mr.
Day-4	Mini project documentation	Documentation	Project group members	Mr.
Day-5	Attaching awareness campaign details	Documentation	Project group members	Mr.
Day-6	Conclusion and recommendation with final report	Documentation	Project group members	Mr.

MILESTONE LOG REPORT FOR THE 8th WEEK

MILESTONE LOG	
Final Recommendations	<ul style="list-style-type: none"> * By raising awareness about water security fosters collective efforts for a resilient and sustainable water future for all. * Distribution of sensors to the farmers by the government * Utilization of waste water in their own village for electricity generation.

My
Signature of Supervisor

CHAPTER 3: SURVEY REPORTS & ANALYSIS

3.1. Issues identifying in environments

Problems faced by you in the college premises					
WALK IN MY COMMUNITY	Issue-1	Issue-2	Issue-3	Issue-4	Issue-5
What did I See?	Rain water wastage	Plants are less	-	-	-
What did I hear?	no proper of usage of rain water	There is no possibility fresh air	-	-	-
What did I feel?	Stacking of rain water in ground	Surroundings are to hot		-	-
What did I think?	Provide rain water storage tanks	Plant more trees	-	-	-
What are some problems I am identifying	Water blockage near roads	In summer more humidity	-	-	-

Problems faced by you in the house environment					
WALK IN MY COMMUNITY	Issue-1	Issue-2	Issue-3	Issue-4	Issue-5
What did I See?	Over flow of drainage	No proper sanitation	Not clearing garbage	Drinking water is too far	Power outage issues
What did I hear?	Poor maintenance	Increasing of mosquitoes	People are irresponsible about garbage disposal	Unable to get in time	More power cuts
What did I feel?	Improper Sanitation	Diseases will born	Land is getting polluted	Difficult to get the water	Low voltage problem
What did I think?	Quick respond of system to clean	Spraying the mosquitoes sprays	Provide dust bins	Provide the mineral water plants	Provide sufficient electricity
What are some problems I am identifying	Fearing of Street dogs	No Street lights	Open drainage system	Over flow of drainage water leads to traffic	Dispose of garbage at road sides

five most pressing problems faced by your neighborhoods					
WALK IN MY COMMUNITY	Issue-1	Issue-2	Issue-3	Issue-4	Issue-5
What did I See?	Over flow of drainage	Poor road condition s	Agriculture issues	Manholes are not closed	Not sweeping roads
What did I hear?	Poor maintenance	Due to heavy rains road are damaged	Water scarcity	Danger for children's	More dust on roads, like sand, papers etc....
What did I feel?	No proper sanitation	Transportation is difficult	Low ground water table	Bad odour, accidents	Viral infections to people
What did I think?	Quick respond of system to clean	Quick respond of government	Ground water recharge	Better option to close the manholes	Clean roads properly
What are some problems I am identifying	Plastic usage is more	Burning of garbage at road sides	Impurified water coming in taps	Land pollution due drainage	Low Illiteracy rate

3.2. Issues identifying in environments

Issue Identification -	Value based choices		
	Environmental awareness	Environmental Consciousness	Self-Awareness
Issue 1-Agricultural issues	√		
Issue 2-Plants are less	√	√	√
Issue 3-Poor road condition		√	
Issue 4-Over flow of drainage		√	
Issue 5- Rain water wastage		√	√

Introduction to Problem Solving. Shortlisting the problems identified.

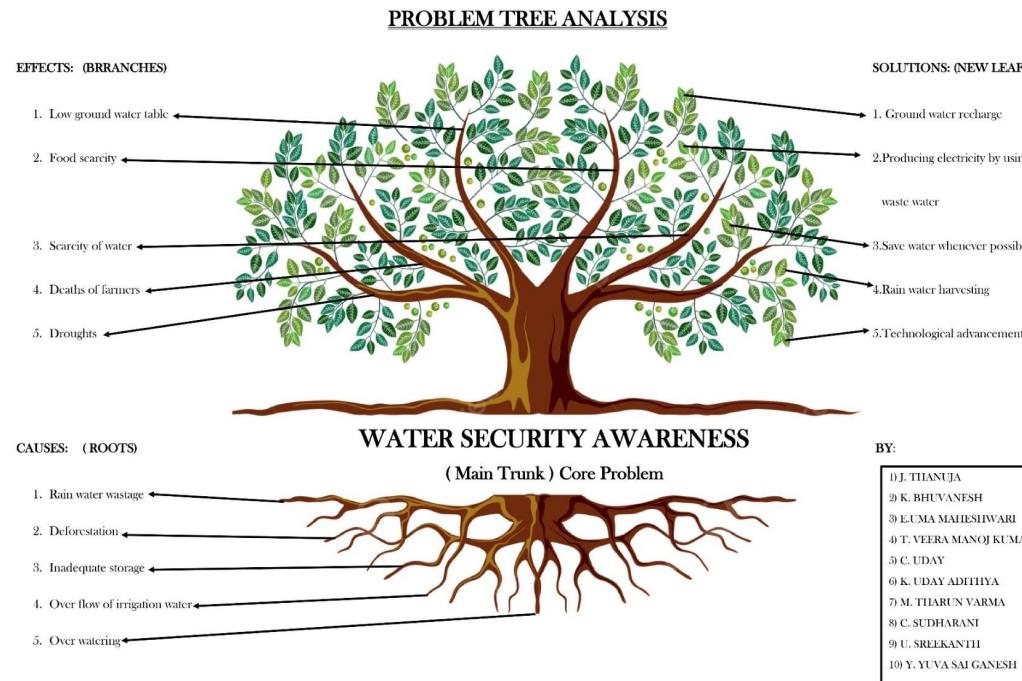
Problems/ Issues	Give score of 1-5				
	Urgency -How badly is affecting the environment	Knowledge -How much can you understand about this problem?	Ability – How confident are you to solve the problem?	Interest – How interested are you to solve the problem?	Total Score - Higher the score more it should be solved
Agricultural issues	5	4	5	5	5
Plants are less	4	4	3	3	4
Poor road conditions	4	3	2	3	3
Over flow of drainage	5	5	3	3	4
Rain water wastage	4	4	4	4	4

3.3. Issues mapping under SDG



Proble m/ SDG	SDG - 01	SDG - 02	SDG - 03	SDG - 04	SDG - 05	SDG - 06	SDG - 07	SDG - 08	SDG - 09	SDG - 10	SDG - 11	SDG - 12	SDG - 13	SDG - 14	SDG - 15	SDG - 16	SDG - 17
P-1		4				4	4								4		
P-2													5			4	
P-3												4					
P-4						4	4										
P-5						4	4										

3.4. Problem tree analysis



3.5. Collecting & analyzing survey data

Quantitative - Statistical Analysis

Graph & Chart Analysis:

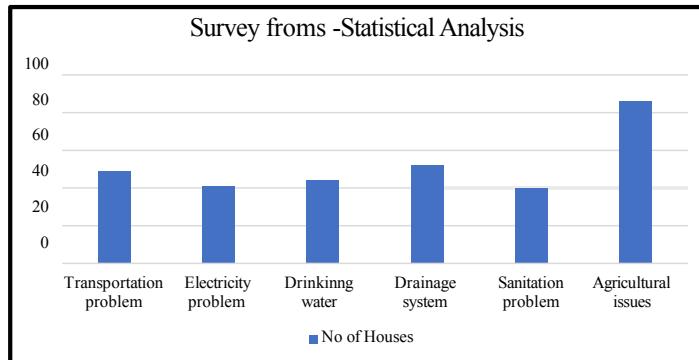
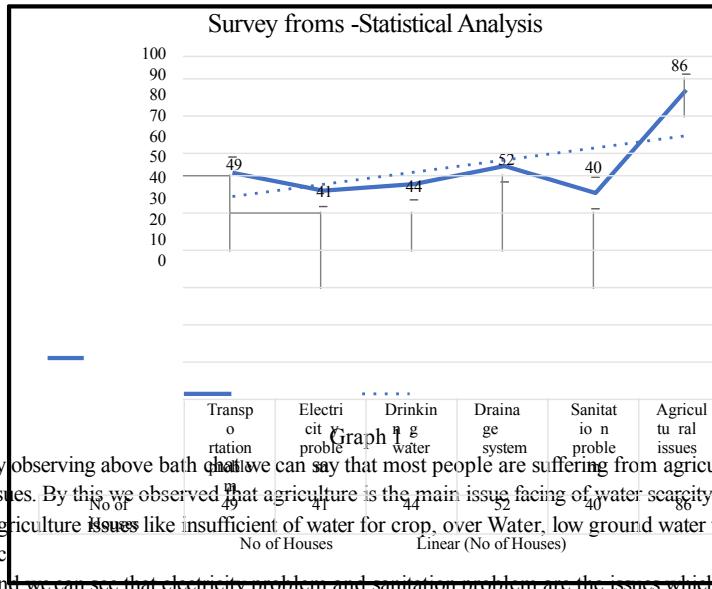


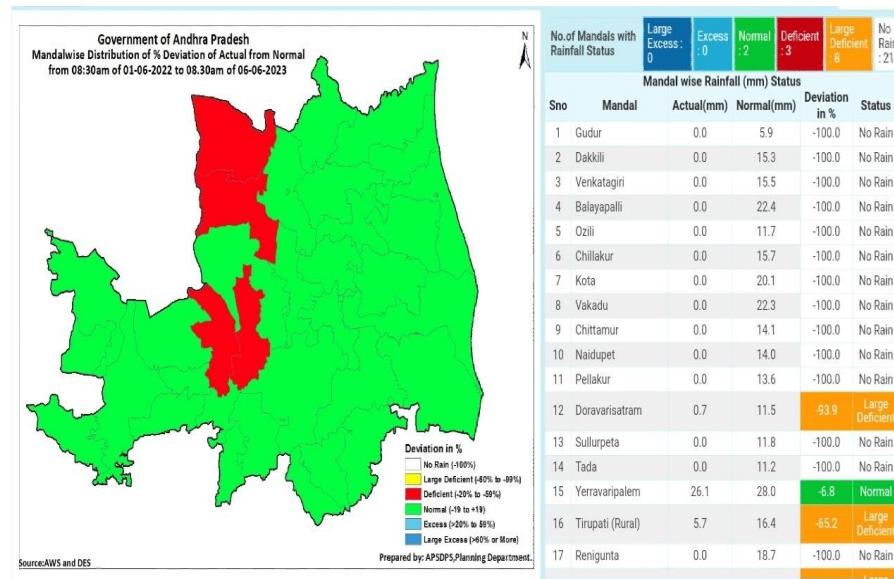
Chart 1 :



- By observing above both chart we can say that most people are suffering from agriculture issues. By this we observed that agriculture is the main issue facing of water scarcity .
- Agriculture Issues like insufficient of water for crop, over Water, low ground water table etc.
- And we can see that electricity problem and sanitation problem are the issues which most people are not suffering by that problems while connecting survey.
- The second issues drainage system problems facing by people. Drainage problems like overflow of drainage happening because of not closing manholes properly etc

Qualitative – Thematic Analysis

Rain fall data:



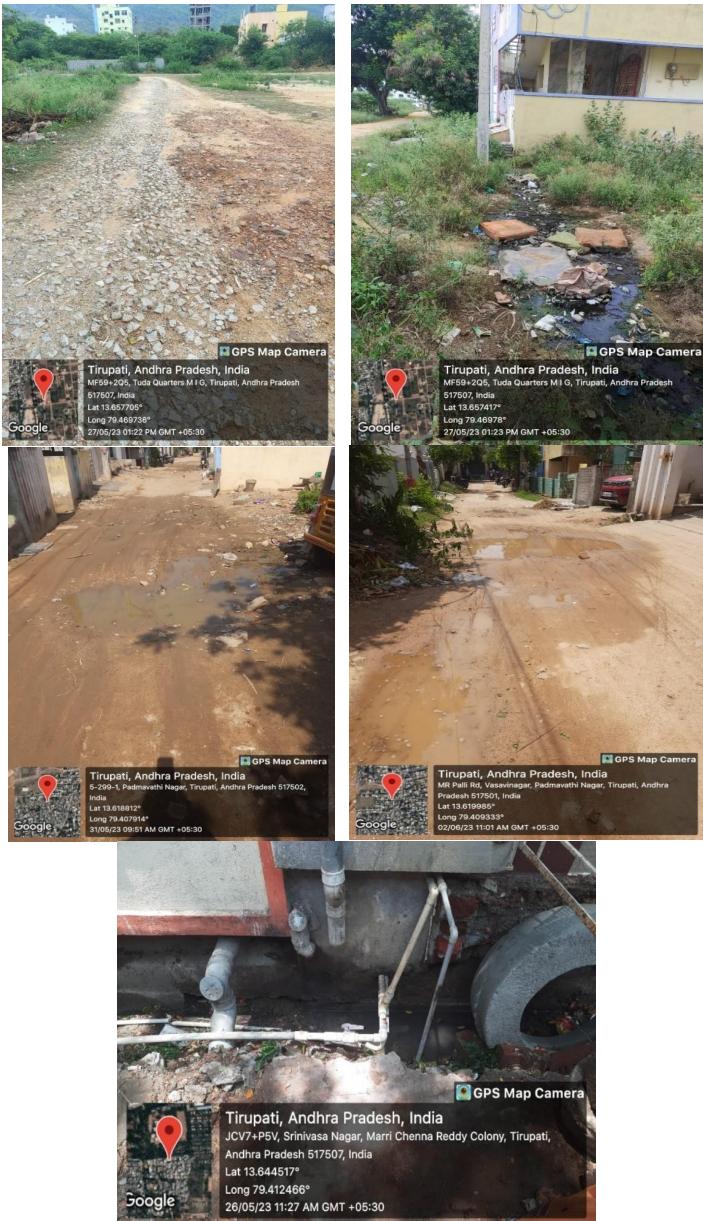
- ❖ Dark Blue colour indicates large excess of rainfall.
 - ❖ Sky Blue colour indicates excess of rainfall.
 - ❖ Green colour indicates normal rainfall it means sufficient rainfall.
 - ❖ Red colour indicates deficient rainfall.
 - ❖ Orange colour indicates large deficient rainfall
 - ❖ White colour indicates no rainfall
 - ❖ We can see that in yerravaripalli mandal there is normal rainfall (-6.8 deviation in %)
 - ❖ We can also see that Tirupati and Doravarisatram mandals are suffering from large deficiencie status in rainfall. (Tirupati : -65.2 % , Doravarisatram : -93.9 %)
 - ❖ Remaining mandals are not having rainfall that is deviation of -100%.

**Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from
Waste Water**

Ground water levels:

District	Api-23	May-22	Nov-22	May-23	Rise (+) / Fall (-) from Current Water Level			Rainfall (in mm) 01/06/2022 to 31/05/2023		
					Api-2023	May-2022	Nov-2022	Normal (mm)	Actual (mm)	Deviation (%)
Srikakulam	8.35	8.44	4.87	8.52	-0.17	-0.08	-3.65	1166.25	1150.38	-0.98
Vizianagaram	5.76	5.89	3.34	5.59	0.16	0.3	-2.26	1112.36	1232.97	11.12
Parvathi Puram Manyam	7.14	7.64	4.44	7.38	-0.24	0.27	-2.94	1170.55	1306.52	12.32
Alluri Sitharama Raju	8.61	8.41	6.12	8.57	0.05	-0.16	-2.45	1290.57	1453.59	12.83
Visakhapatnam	8.37	7.63	4.87	8.56	-0.19	-0.93	-3.69	1106.1	1094.4	-0.65
Anakapalli	6.31	6.13	3.55	6.49	-0.17	-0.36	-2.93	1175.44	1182.13	0.72
Kakinada	7.92	8.61	5.67	7.64	0.28	0.97	-1.97	1140.16	1359.33	19.79
Kona Seema	3.67	3.67	2.38	3.62	0.05	0.05	-1.24	1295.03	1462.98	13.41
East Godavari	19.9	19.33	15.95	19.3	0.61	0.03	-3.35	1144.78	1284.73	12.57
West Godavari	8.37	8.07	7.54	8.47	-0.11	-0.4	-0.94	1228.92	1317.04	7.52
Eluru	20.78	22.5	17.13	21.56	-0.78	0.94	-4.43	1063.86	1271.11	20.19
Krishna	9.41	9.54	7.89	9.23	0.19	0.31	-1.34	1047.68	1181.91	13.04
N I R	7.1	7.15	3.89	6.9	0.2	0.24	-3.02	1024.97	1021.55	-0.21
Guntur	5.48	4.76	3.21	3.48	1.99	1.28	-0.27	896.07	1060.19	18.92
Bapatla	3.59	3.87	2.48	3.65	-0.06	0.23	-1.17	925.33	1122.05	21.63
Planadu	11.19	8.85	7.74	10.99	0.21	-2.13	-3.25	775.29	839.36	9.11
Parakasam	16.85	14.88	12.55	17.03	-0.18	-2.15	-4.48	841.13	855.07	2.23
Sri Pott Sriramulu Nellore	5.17	5.75	4.8	5.37	-0.2	0.38	-0.57	1052.92	1075.21	1.94
Coastal ANDHRA REGION	9.11	8.95	6.58	9.02	0.09	-0.07	-2.44	1080.97	1181.7	9.75
Kurnool	6.91	8.08	4.84	7.12	-0.21	0.96	-2.28	614.65	727.18	18.65
Nandyala	7.46	6.77	4.52	6.42	1.04	0.35	-1.9	721.42	759.63	6.7
Anantapuramu	7.78	9.22	5.08	7.61	0.16	1.61	-2.54	512.45	766.13	54.2
Sri Sathya Sai	8.35	10.11	5.06	7.85	0.51	2.26	-2.78	590.91	909.51	55.69
Y.S.R Kadapa	8.72	6.9	5.09	8.24	0.48	-1.33	-3.15	684.24	758.51	12.99
Anamaya	8.93	7.98	6.14	9.79	-0.86	-1.81	-3.65	743.68	902.41	23.11
Chittoor	9.6	8.37	6.57	9.03	0.57	-0.66	-2.46	914.79	1068.55	18.25
Tirupati	4.67	5.03	4.11	4.61	0.06	0.42	-0.49	1124.43	1158.02	3.6
RAYALASEEM A REGION	7.8	7.81	5.18	7.58	0.22	0.22	-2.41	738.32	881.24	24.15
Andhra Pradesh	8.71	8.6	6.15	8.58	0.13	0.02	-2.43	975.54	1089.25	14.18

3.6. Observations in villages



3.7. Short term and Long term solutions

Identify Solution	Short term solution		Long term solution	
	Solution	Success Criteria %	Solution	Success Criteria %
1	Reuse the waste water	70%	Ground water recharge	20%
Tasks	Waste water treatment, Plantation with Gray water		Filling water through bore wells	
2	Rain water harvesting	30%	Development of forest	50%
Tasks	Using Gutters, Collecting Water in Buckets and Ground water pits		Plantation	
3	Water conservation	50%	Rain water harvesting	50%
Tasks	Demand water supply		Using Gutters, Collecting Water and Ground water pits	
4	Controlling water over flow by irrigation sensors	80%	Desalination	5%
Tasks	Installing irrigation sensors		Water Treatment plant	
			Storage of water	90%
Tasks			Check dams, reservoirs	
			Inter linking of Rivers	80%

3.8. Time Frame-CSP

S.No	Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
1	Reading Chapters	➡							
2	Survey in House/ Neighbourhood/College Environment	➡➡							
3	Post Survey Forms-Walk in community	➡➡							
4	Problem Tree Analysis	➡➡							
5	Collecting & Analyzing Data		➡➡						
6	Survey Reporting		➡➡						
7	Mini Project			➡➡➡➡					
8	Testing & Stake holder Feedback				➡➡				
9	Feedback Improvise &Conclusions					➡➡			
10	Community Awareness Campaign						➡➡		
11	Project Report							➡➡➡➡	

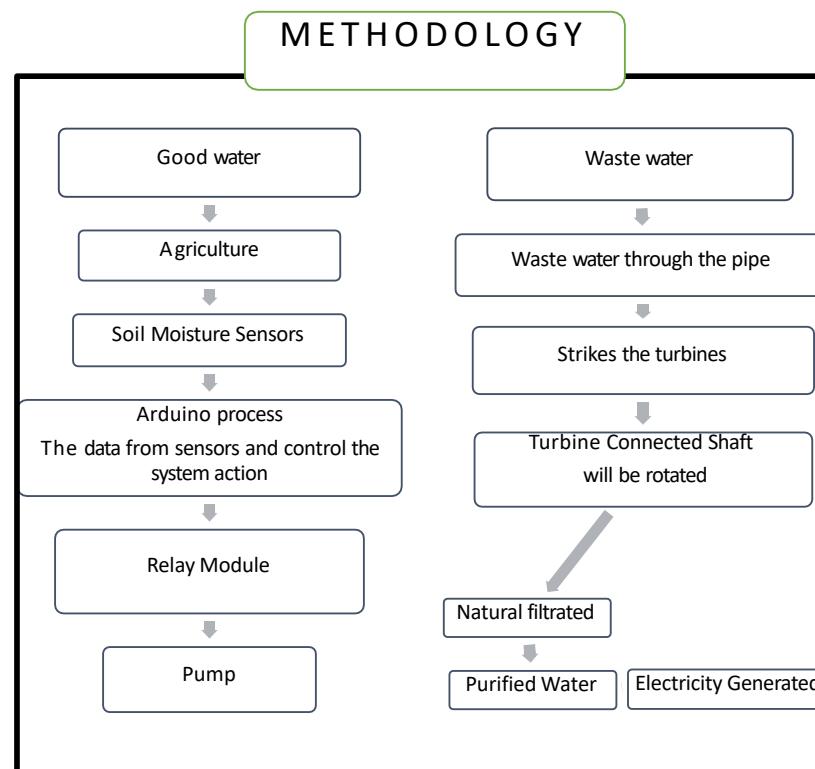
CHAPTER 4: MINI PROJECT

1. Methodology

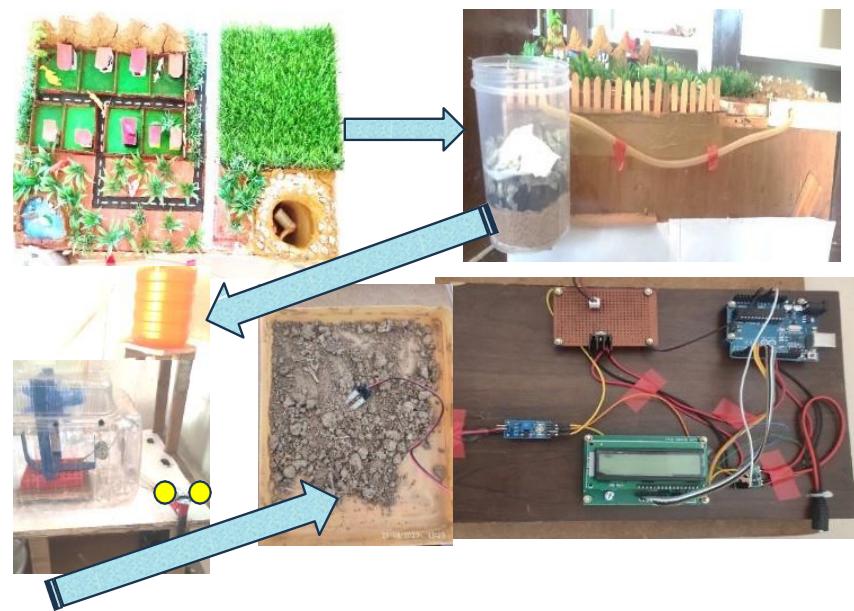
Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from Waste Water

Objectives:

- Identification of areas under high water security risk.
- Preparation of both a strategic water security strategy for addressing agriculture &electricity.
- To raise awareness about water issues, water usage in agricultural places not to over flow

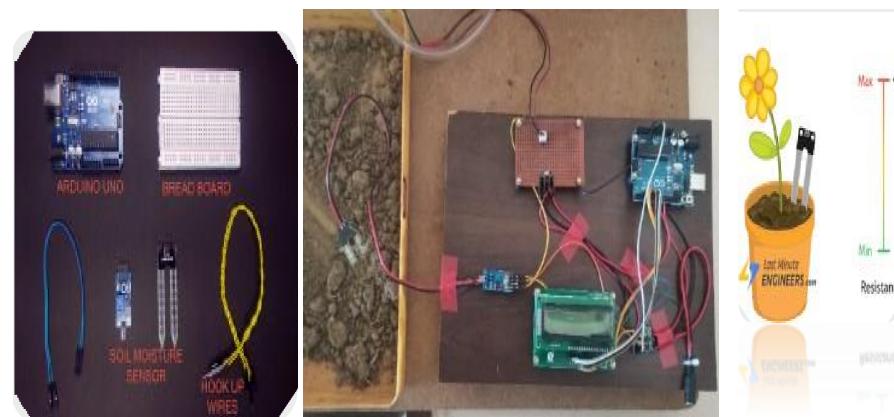


Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from
Waste Water



4.2. Soil moisture sensor

Arduino is a popular microcontroller platform that can be used to build various electronic projects, including agricultural sensor systems. To detect excess water in agricultural fields using Arduino, you would typically need a water sensor along with the Arduino board.



**Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from
Waste Water**

The working principle of an Arduino-based water level sensor for detecting excess water in agricultural fields would involve the following steps:

- 1.Sensor Placement: Install the water sensor in the desired location within the agricultural field. This could be a spot where excess water is likely to accumulate or where a water level is crucial to monitor.
- 2.Electrical Connections: Connect the water sensor to the appropriate pins on the Arduino board. Follow the sensor's documentation or datasheet to ensure the correct wiring connections.
- 3.Calibration: Calibrate the water sensor according to its specifications. This step may vary depending on the type of water sensor you are using. Calibration ensures accurate measurement of water levels for your specific application.
- 4.Programming: Write a program for the Arduino board to read the water sensor's output. Use the Arduino Integrated Development Environment (IDE) or any other programming platform compatible with Arduino. The program should read the sensor's analog or digital output and convert it into a usable value.
- 5.Threshold Setting: Define a threshold value in your Arduino program that determines when the water level is considered excessive. This threshold value depends on the specific requirements of your agricultural field and the water sensor's output range.
- 6.Data Processing: In your Arduino program, compare the actual water level reading from the sensor with the defined threshold value. If the measured value exceeds the threshold, it indicates an excess water condition.
- 7.Alert Mechanism: When the program detects excess water based on the threshold, you can implement an alert mechanism. This could be a visual notification through an LED, an audible alert using a buzzer, or sending a notification to a mobile device or computer through wireless communication.
- 8.Additional Actions: Depending on your application, you can also program the Arduino to trigger other actions when excess water is detected. For instance, you might activate a water drainage system, control a pumping mechanism, or take data logging for further analysis.

It's important to note that the above steps are a general guideline for building an Arduino-based system to detect excess water in agricultural fields. The specific implementation may vary depending on the type of sensor, the communication and alert mechanisms used, and the requirements of your agricultural setup.

4.2.1. Aurdino Sensor Coding

```
int sensorPin = A0;
int sensorValue = 0;
#define PUMP 9
#define Led 13
#include <LiquidCrystal.h>
LiquidCrystal lcd(2, 3, 4, 5, 6, 7);
void setup()
{
    delay(500); Serial.begin(9600);
    pinMode(Led, OUTPUT);
    pinMode(PUMP, OUTPUT);
    lcd.begin(16, 2);
    digitalWrite(Led, LOW);
    digitalWrite(PUMP, LOW);
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print("SMART AGRICULTURE");
    lcd.setCursor(0, 1);
    lcd.print(" SYSTEM ");
    Serial.print("start");
    delay(500);
}
void loop() {
    sensorValue = analogRead(sensorPin);
    sensorValue = 1024 - sensorValue;
    Serial.print("sensor value = ");
    Serial.println(sensorValue); if
    (sensorValue > 400)
    {
        lcd.clear();
        digitalWrite(Led, LOW);
        analogWrite(PUMP, 0);
        lcd.setCursor(0, 0);
        lcd.print("SOIL is WET ");
        lcd.setCursor(0, 1);
```

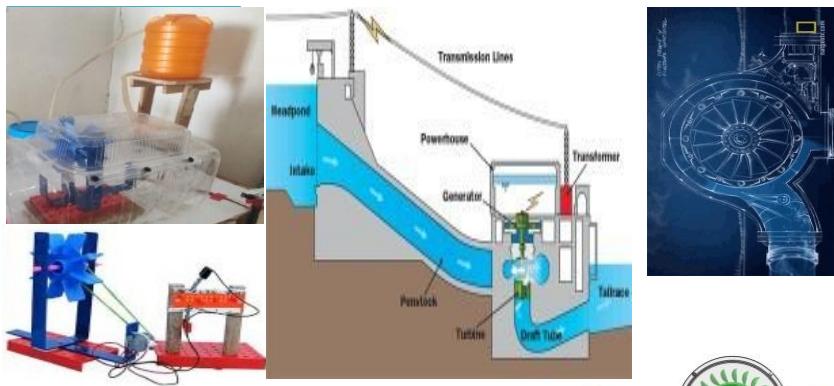
```
lcd.print("PUMP OFF      ");
Serial.println('PUMP OFF      ');
delay(500);
}
else
{
lcd.clear();
lcd.setCursor(0, 0);
lcd.print("SOIL is D R Y      ");
lcd.setCursor(0, 1);
lcd.print("PUMP ON      ");
Serial.println('PUMP ON      ');
digitalWrite(Led, HIGH);
//analogWrite(PUMP, 50);
delay(20);
analogWrite(PUMP, 150);
delay(20);
// analogWrite(PUMP, 100);
delay(20);
}
```

ADVANTAGES: -

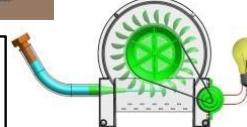
- Precise monitoring
- Water conservation
- Plant health improvement
- Automation and control
- Customizability and flexibility
- Cost effective solution

4.3. Electricity Generation from Waste water

Generating electricity from agricultural water typically involves using turbines in hydroelectric power systems. The working principle can be summarized as follows:



- hydraulic turbine converts the energy of flowing water into mechanical energy. A hydroelectric generator converts this mechanical energy into electricity.



1. Water Source: In agricultural areas, water sources such as rivers, streams, and irrigation canals are often available. These water sources can be utilized to generate electricity.

2. Diversion of Water: The first step is to divert a portion of the agricultural water flow to feed the turbine system. This can be done by constructing a diversion channel or a small dam to redirect water to the turbine.

3. Turbine Placement: Turbines are installed in the path of the diverted water flow. The selection of the turbine type depends on various factors, including the flow rate and head (the height difference between the water intake and the turbine).

4. Turbine Operation: As the diverted water flows through the turbine, it interacts with the turbine's blades or vanes, causing them to rotate. The rotation of the turbine is due to the pressure and kinetic energy of the water.

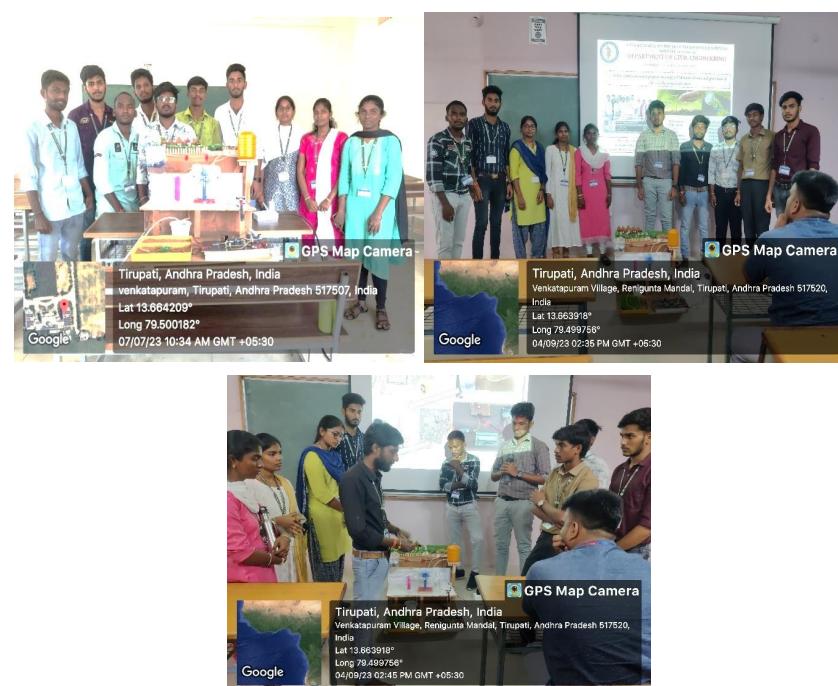
Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from Waste Water

5. Shaft and Generator: The rotating motion of the turbine is connected to a shaft that is coupled to a generator. The generator converts mechanical energy into electrical energy through the principle of electromagnetic induction.

6. Electricity Generation: As the turbine rotates the shaft, it spins the generator's rotor, which is surrounded by a stationary stator containing wire coils. The relative motion between the rotor and stator induces an electrical current in the coils, generating electricity.

7. Electrical Infrastructure: The electricity generated by the turbine is typically in the form of three-phase alternating current (AC). It is then transmitted through power lines to transformers, where the voltage is adjusted for distribution and eventual use.

8. Utilization: The generated electricity can be used directly in agricultural applications, such as powering irrigation systems, farm machinery, or lighting. Alternatively, it can be fed into the national grid to supply electricity to the wider community.



Feed Back Evaluation by Head of the Department

Student Name: **K.BHUVANESH**

Date of Evaluation: **4-9-2023**

Registration No: **22AK5A0141**

Please rate the student's performance in the following areas:

1) Oral communication	1	2	3	4	5
2) Written communication	1	2	3	4	5
3) Proactiveness	1	2	3	4	5
4) Interaction ability with community	1	2	3	4	5
5) Positive Attitude	1	2	3	4	5
6) Self-confidence	1	2	3	4	5
7) Ability to learn	1	2	3	4	5
8) Work Plan and organization	1	2	3	4	5
9) Professionalism	1	2	3	4	5
10) Creativity	1	2	3	4	5
11) Quality of work done	1	2	3	4	5
12) Time Management	1	2	3	4	5
13) Understanding the Community	1	2	3	4	5
14) Achievement of Desired Outcomes	1	2	3	4	5
15) OVERALL PERFORMANCE	1	2	3	4	5


HEAD OF THE DEPARTMENT

Feed Back Evaluation by CSP Convener

Student Name: **K.BHUVANESH**

Date of Evaluation: **4-9-2023**

Registration No: **22AK5A0141**

Please rate the student's performance in the following areas:

1) Oral communication	1	2	3	4	/	5
2) Written communication	1	2	3	4	/	5
3) Proactiveness	1	2	3	4	/	5
4) Interaction ability with community	1	2	3	4	/	5
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9) Professionalism	1	2	3	4	/	5
10) Creativity	1	2	3	4	/	5
11) Quality of work done	1	2	3	4	/	5
12) Time Management	1	2	3	4	/	5
13) Understanding the Community	1	2	3	4	/	5
14) Achievement of Desired Outcomes	1	2	3	4	/	5
15) OVERALL PERFORMANCE	1	2	3	4	/	5

T: fm: tch/
Signature of the Convener

Feed Back Evaluation by CSP Coordinator

Student Name: K.BHUVANESH	Date of Evaluation: 4-9-2023
Registration No: 22AK5A0141	

Please rate the student's performance in the following areas:

1) Oral communication	1	2	3	4	/	5
2) Written communication	1	2	3	4	/	5
3) Proactiveness	1	2	3	4	/	5
4) Interaction ability with community	1	2	3	4	/	5
5) Positive Attitude	1	2	3	4	/	5
6) Self-confidence	1	2	3	4	/	5
7) Ability to learn	1	2	3	4	/	5
8) Work Plan and organization	1	2	3	4	/	5
9) Professionalism	1	2	3	4	/	5
10) Creativity	1	2	3	4	/	5
11) Quality of work done	1	2	3	4	/	5
12) Time Management	1	2	3	4	/	5
13) Understanding the Community	1	2	3	4	/	5
14) Achievement of Desired Outcomes	1	2	3	4	/	5
15) OVERALL PERFORMANCE	1	2	3	4	/	5



Signature of the Coordinator

CHAPTER 5: AWARENESS CAMPAIGN PROGRAMME



- We understand the specific needs, concerns, and level of awareness of the villagers regarding water security and related issues. Consider conducting surveys or talking to community leaders to gain insights.
- We Emphasize the practical benefits for the community, such as increased crop yields, reduced water wastage, and the potential for electricity generation, which can improve their quality of life.
- We Identify local champions or influencers within the community who can support and advocate for your program. Their endorsement can carry a lot of weight.

**Water Security Awareness Program utilizing Soil Moisture Sensors and Electricity Generation from
Waste Water**

-
- We created a working model to show how soil moisture sensors work and how electricity can be generated from wastewater.



Photos & Videos Link

<https://youtu.be/ICDB-LUulo?si=HSJPwVIMYd52W5x5>

<https://youtu.be/ABgsuLhz0g4?si=slZ8RUaMuMxM1jQE>

CHAPTER 6

1. Recommendations

Creating a water security awareness program that incorporates soil moisture sensors and the generation of electricity from wastewater is an innovative and sustainable approach to addressing water-related challenges.

1. Organise workshops on water conservation
2. Social media campaigning about water related issues
3. Policies by govt like providing soil moisture sensors
4. Develop water education program from school age

2. Conclusion

The journey from the right beginning that is deciding how can we help the community / society to be a better place, what problems are faced by our Surrounding keep all the facts in mind we figured out **Water Wastage** is the main problem, we think This community service is to help that soil water sensors are used to control the wastage of water mainly in agricultural areas.

- By waste water we can produce hydroelectric power generation by using Turbines.
- We promote the idea of community service to awareness about water scarcity and how to control the water with limit usage as a general responsibility for all .
- By raising awareness about water security fosters collective efforts for a resilient and sustainable water future for all.

6.3. References

1. IoT based smart water quality monitoring system by Varsha Lakshmikantha, Anjitha Hiriyannagowda, Akshay Manjunath, Aruna Patted, Jagadeesh Basavaiah
2. Smart Water Management Platform: IoT-Based Precision Irrigation for Agriculture by Carlos Kamienski
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4. [https://www.undp.org/sustainable-development-goals/no-poverty?
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K1bwF5GRLnWQJngnrMueH4T24xoCfyQAvD_BwE](https://www.undp.org/sustainable-development-goals/no-poverty?gclid=CjwKCAjw7c2pBhA2EiwA88pOF9xM2yq_1eaySCQdhgOzVXxZ8p8_K1bwF5GRLnWQJngnrMueH4T24xoCfyQAvD_BwE)
5. <http://www.apsdps.ap.gov.in/>
6. <https://apsche.ap.gov.in/Pdf/Guidelines%20for%20the%20OJT%20Internship%20Community%20Service%20Project.pdf>
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