

**“ANIMAL DETECTION SYSTEM IN FARM AREAS”**

<sup>1</sup>SAMEER SAWALE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

<sup>2</sup>AKASH GANTHADE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

<sup>3</sup>MAYURI AGLAWE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

<sup>4</sup>TEJASWINI KOWALE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

<sup>5</sup>PAYAL BAWANE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

<sup>6</sup>PROF S. D. KALE

Department of Electronics & Telecommunication Engineering, Jagadambha College of Engineering & Technology, Yavatmal, Maharashtra, India

**ABSTRACT:** *The fundamental point of this paper is to shield the harvest from creatures. In horticulture field human-creature struggle is a noteworthy issue; because of this we lost the harvests. By this proposition we secure the yields without harming the creatures. This framework distinguishes the creature by utilizing arduino. This framework utilizes PIR sensor for identifying the creature development and send sign to arduino controller utilizing GSM module. This framework occupies the creatures by delivering the sound and furthermore send message to rancher..*

**Keywords:** Ultrasonic sensor, Arduino controller, PIR sensor

## 1. INTRODUCTION

Populace on the earth builds step by step. Because of this urbanization are expanded. Because of urbanization it results into deforestation. Because of deforestation creatures interface with human life. We realize horticulture is the foundation of economy but since of creature impedance in farming terrains, there will be colossal loss of harvests. [1] Wild creature like hogs, elephants, deer interacting with homestead regions and information contrarily to human life. This framework uses the ultrasonic sensor, PIR sensor and GSM modules for this reason. Ranchers and backwoods officer will get these SMS containing territory in which creatures watched. [2] Buzzer is utilized to deliver the sound which occupies the creature for the change a way of creature. Customary techniques pursued by ranchers are not unreasonably successful and it isn't practical to contract watchmen to watch out for harvests and counteract wild creatures. Since wellbeing of both human and creature is similarly virtual. Need of the creature or human put the other in genuine threat, in this procedure, assets are ruined and now and then even the life is lost. Human-elephant struggle is more in south Asia and in Africa. Normally

cultivates are secured with electrical fence; creature which endeavors to enter the field endures electric shock with exceptional agony cause creatures to carry on in unusual way.

## 2. LITERATURE SURVEY

Vikhram.B, Revathi.B, Shanmugapriya. R, Sowmiya.S, Pragadeeswaran.G 'Animal Detection in farm areas'. In this project we utilized the PIC 16F877A microcontroller. We utilized PIR and Ultrasonic sensor to recognize the snapshot of the creature and send the sign to the PIC 16F877A controller. At the point when creature go into the ranch region, at that point PIR and Ultrasonic sensor distinguish the nearness of creature and send input sign to the controller quickly the APR board will be on and sound is played to occupy the creature. Amid the evening the blaze will be on and the message will be send to woods office and called to rancher. Power supply will be given by the sun based board or homestead controlled power supply. The LCD shows the nearness of creature and

LDR perusing the GSM module utilized for sending SMS and make call.

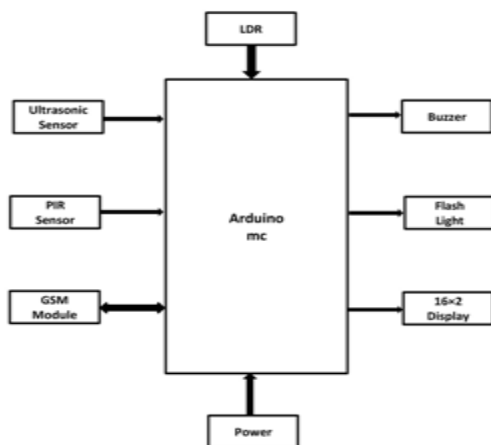
Prof. Divya, Prof. Usha kiran and Prof. Praveen M researched on 'IOT-Based Wild Animal Intrusion Detection System'. We had endeavored to build up the framework which will screen the field. That is at first it will identify interruption around the field utilizing sensor, at that point camera will catch the picture of the gatecrasher and grouping them utilizing picture preparing and afterward Taking appropriate activity dependent on the kind of the interloper. At last sends message to rancher and woodland authorities utilizing GSM. In this framework PIR Sensors and camera go about as first round of security where the creature development is identified utilizing the sensor and the sensor thusly triggers the camera to snap the photo of the creature and transmit the picture for handling by means of microcontroller i.e., through WSN. The microcontroller transmits the picture from the camera to the PC in the war room where the picture handling and arrangement of creature is finished. When the creature is observed to be risk the PC will send the sign to the anti-agents framework through microcontroller to make suitable move.

**3. PROPOSED SYSTEM**

In the proposed work, at the point when the creature go into the ranch zone. The PIR and ultrasonic sensor distinguish the nearness of creature and send an information sign to the arduino controller. Quickly, the bell will be on, and sound is played and it will be occupy the creature. Amid the evening time the glimmer light will be on and the message will be send to the rancher and timberland office.

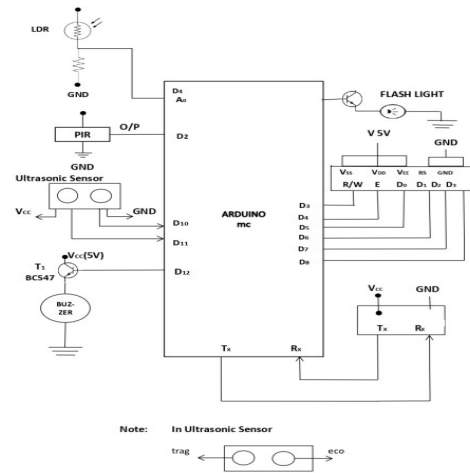
Power supply will be given by battery or sun powered board or homestead managed control supply. The LCD shows the nearness of creature and LDR readings. The GSM module is utilized for sending SMS.

**4. BLOCK DIAGRAM**



**Figure 1: Block Diagram**

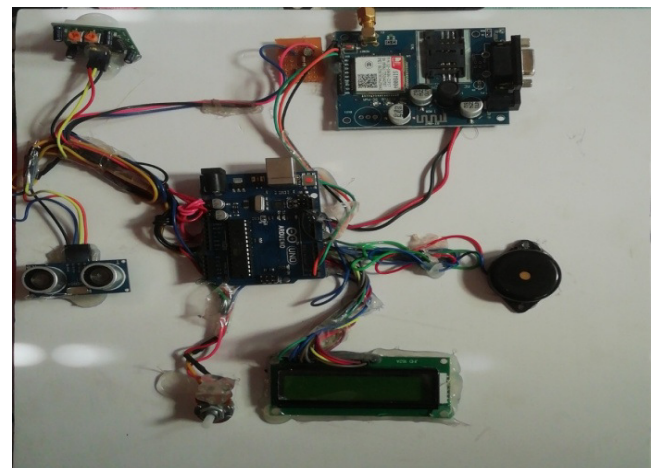
**5. CIRCUIT DIAGRAM**



**Figure 2: Circuit Diagram**

**6. WORKING COMPONENTS USED**

- Arduino uno
- GSM Module
- Ultrasonic Sensor
- PIR Sensor
- 16\*2 Display
- LDR
- Flash Light
- Buzzer



**Figure 3: Complete System**

This system used arduino microcontroller, PIR sensor, Ultrasonic sensor, GSM module, LDR and 16\*2 LCD display for implementing the animal detection. The first step of the system when animal enters into the farm area. The PIR and ultrasonic sensor detect the presence of and send the input

signal to the arduino. As soon as the animals detect by PIR and ultrasonic sensor buzzer is on, it produces sound. Due to sound animals divert their path. PIR sensor measures infrared light radiating from object in field at night. During night time flash light will be on and send message to farmer and forest department. GSM SIM800 used for sending the message to farmer and forest department. The LCD displays the presence of animal and LDR readings. Power supply is given by regulated power supply.

## 7. RESULT AND ANALYSIS



**Figure 4:** Result Show In 16\*2 Display

As the animal detect by the PIR sensor or Ultrasonic sensor or both the buzzer is on, it produces sound it helps to diverts animals without damaging them. This is the main aim of our project. At night time the flashlight on. When animals detect the message will show on display on LCD “ANIMAL ACTIVITY FOUND!!!” as show in above fig.

When LCD shows the message of animal activity found in farm same message send to the farmer and forest department for alerting them by help of GSM SIM800

## 8. FUTURE SCOPE

Later on, there will be enormous degree, this venture can be made dependent on remote systems. Remote sensor system and sensors of various kinds are utilized to gather the data of yield conditions and natural changes and this data is transmitted through system to the rancher that starts remedial activities. Farmer are associated and mindful of the states of the horticultural field at whenever and anyplace on the planet.

## 9. CONCLUSION

Farmer are associated and mindful of the states of the rural field at whenever and anyplace on the planet. The issue of harming crops by wild creatures has turned into a noteworthy social issue in the present time. In this way this framework conveys incredible social significance as it intends to address this issue. These creature identification and cautioning framework have used to distinguish or show specific item. The creatures, which are as of now compromised or imperiled, are regularly slaughtered in striking back or to forestall future

clashes. So this zone is to be checked constantly to avert section of wild creatures.

## 10. REFERENCES

- [1]. Vikhram.B, Revathi.B, Shanmugapriya.R, Sowmiya.S, Pragadeeswaran.G, “Animal Detection System in Farm Areas” vol 6, Mar 2017.
- [2]. Prof. Divya, Prof. Usha kiran & Prof. Praveen M, “IoT-Based Wild Animal Intrusion Detection System” vol 6, July 2018.
- [3]. Monika Tanwar, Dr. Narpal Singh Shekhawat & Dr. Subhash Panwar, “A Survey on Algorithms on Animal Detection” vol 3.
- [4]. Yogesh Pawar, Abhay Chopde, Mandar Nandre, “Motion Detection Using PIR Sensor” vol 5, Apr 2018.
- [5]. Mr. Akash K. Mehta, Prof. Dulari Bosamiya, “A Survey of the Farm Surveillance System for Animal Detection in Image Processing”.
- [6]. S. Santhiya, Y. Dhamodharan, N E. Kavi Priya, C S. Santhosh, M.Surekha, “A SMART FARMLAND USING RASPBERRY PI CROP PREVENTION AND ANIMAL INTRUSION DETECTION SYSTEM” vol 5, Mar 2018.
- [7]. 1 R.Shanmugasundaram, S.Pavithra, V.Sangeetha, S.Tamilselvan, A.H.Thanveer Ahmed , “IoT based animal tracking and monitoring system in zoo”, South Asian Journal of Engineering and Technology Vol.3, No.2 (2017) 162–168.
- [8]. Dr. P. Uma Maheswari and Anjali Rose Rajan, “Animal intrusion detection system using wireless sensor networks”, International Journal of Advanced Research in Biology Engineering Science and Technology (IJARBEST), Vol. 2, Special Issue 10, March 2016.
- [9]. Pampapathi B S, Manjunath P C, “Intrusion Detection Using Passive Infrared Sensor (PIR)”, Asian Journal of Engineering and Technology Innovation, Volume 4, Issue 7.
- [10]. So-Hyeon Kim, Do-Hyeun Kim, Hee-Dong Park, “Animal Situation Tracking Service Using RFID, GPS, and Sensors”, 2010 Second International Conference on Computer and Network Technology, 153 - 156, 2010
- [11]. Shobhit Kumar Nagpal; P. Manojkumar, "Hardware implementation of intruder recognition in a farm through Wireless Sensor Network", 2016 International Conference on Emerging Trends in Engineering, Technology and Science (ICETETS), 2016, 1 – 5.