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9940 572 462



6381 907 438



ijircce@gmail.com



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# Anti-poaching Alarm System for Trees in the Forest

Ameera Fathima, Amulya H.V, Ayesha Sultana, Prema N.S

Department of Information Science and Engineering, Vidyavardhaka College of Engineering Mysore, Karnataka, India

**ABSTRACT:** Smuggling of most trees like wood in forest is a great threat to forest resources, causing economic injury and have a quite devastating result on the atmosphere over the globe. Presently there are many cases of carrying trees like Sagwan, Sandal, and so on... Stealing of monetarily valuable trees has turned dangerous to the estates of these trees, creating an ecological irregularity and hazards the common assets. This paper presents a microcontroller-based anti-poaching system engaging WSN technology, which is efficient in determining the theft by keeping an eye on vibrations made by cutting trees/branches [1][2]. This paper aims to draw plans of the structure that will be used to limit the stealing of trees. A technique can be evolved by utilizing various sensors and GSM components, to limit stealing and trace the trees easily. Forest officers get alert once an event happens and necessary actions are taken [4]. Poaching of trees ushers a threat to natural resources getting extinguished. Wildlife is losing their territory, causing variations in nature [3].

## I. INTRODUCTION

Not long ago poaching of the monetarily beneficial category of trees like- teak, pine, and rosewood have been massively inflated. Several steps have been taken by different contributors and notably by govt. of India to eliminate these issues. These include hiring, coaching, and deployment of guards covering the forest. Severe disciplinary action is being taken against lawbreakers, equally rewarding with special incentives for anti-poaching activities(Twelfth five year plan 2012-2017) were directed for eliminating the jeopardize.

After taking all these measures, even now poachers continued to thrive. Therefore the positive solution to this problem is to implement a wireless sensor, making it more powerful, successful, and workable.

WSN is frequently used in various industrial applications such as monitoring, security and control applications, maintenance, etc.

In forests, WSN is used as a fire alarm, determining the poaching of animals, etc. Since WSN has many advantages it is used in this project. Wireless sensor network eradicates the use of expensive cables and saves cost.

The goal is to plant lightweight wireless sensors on the trees, to detect theft and send an alarm [1].

A collection of 15-20 tree nodes can be set up with a master node having additional resources and intelligence to commune with the base station. The base station is located at the doorways of the forest which will commune with the control room server through the RF network. The described network follows star topology [1][5].

## II. LITERATURE SURVEY

S.Sanjay Kumar, V.Ravi, Ch.Rajendra Prasad, P.Ramchandra Rao have used WSN technology and GSM module.

Akshay D. Sonwane, V. N Bhonge, and Ajay Khandare have used WSN technology.

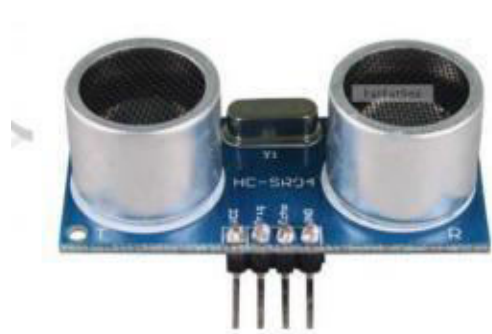
Parthiban M, Dharani M, Kathiga S, Keruthika M have used WSN technology.

Smita Gaikwad, and Prof. Rajesh Patil have used WSN technology.

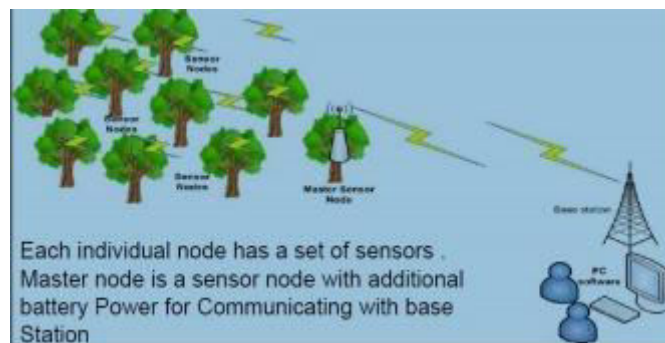
Prof.Dr.M.C.Hingane, and Vandana Datta Ingale have used WSN technology and IOT.

### III. MATERIALS AND METHODS

1. TILT SENSOR: A tilt sensor measures the tilt of an object in multiple axes concerning an absolute level plane.
2. SOUND SENSOR: The sound sensor is used to detect the sound. They are very simple to use. It consists of a Microphone as a transducer, potentiometer to adjust the intensity, LM386 low power audio amplifier, LED, and other passive components like resistors and capacitors. [5]



3. WSN: it is the most rising technology, used in various industrial applications such as monitoring, security and control applications, maintenance, etc. [1]



### IV. RESULT

The main goal of the system is to decrease the illegal logging of trees, by mounting some sensors around the trees. By doing this we can prevent the smuggling of trees and maintain the balance in the eco-system.

### V. CONCLUSION

The aim is to protect trees like rosewood, teak, sandalwood, etc. We are simply tracking the activity that reduces deforestation and helps in maintaining the ecological balance [5].

Different sensor implementation and work have proved to save lots of trees. The knowledge of the sensors is sent to Arduino micro-controller from RF [4].

Therefore goal is to provide a low cost and genuine check on trees with technologies that helps us to detect stealing of monetary trees [4].

### REFERENCES

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- [2] [https://www.researchgate.net/profile/Parthiban-m/publication/339427563\\_IOT\\_Based\\_Anti-Poaching\\_Sensor\\_System\\_for\\_Trees\\_in\\_Forest/links/5e50cb38458515072dafd7cb/IOT-Based-Anti-Poaching-Sensor-System-for-Trees-in-Forest.pdf](https://www.researchgate.net/profile/Parthiban-m/publication/339427563_IOT_Based_Anti-Poaching_Sensor_System_for_Trees_in_Forest/links/5e50cb38458515072dafd7cb/IOT-Based-Anti-Poaching-Sensor-System-for-Trees-in-Forest.pdf)
- [3] <https://ieeexplore.ieee.org/abstract/document/7754491>
- [4] <https://iopscience.iop.org/article/10.1088/1757-899X/981/3/032014/meta>
- [5] <https://IJEDR1904101.pdf>





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