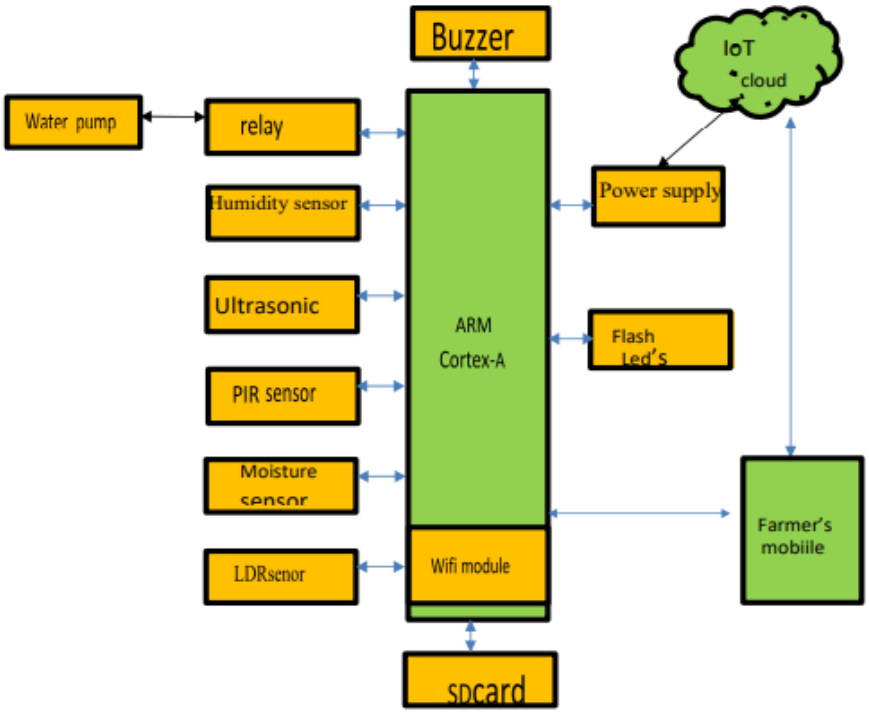
PROPOSED SOLUTION

NOVELTY:

- ❖ IoT based intelligent system that can be used to prevent crop damage due to wild animals.
- ❖ Crops in farms are many times ravaged by local animals like buffaloes, cows, goats, birds, and fire etc. This leads to huge losses for the farmers.
- ❖ As an alternative to electrical fencing, the farmers keep vigil at night to keep the wild animals away. They use flashlights to ward them off. This is a very strenuous task and the lack of sleep adversely affects the farmers' work during the daytime. The damage caused by the animals to the crops affects the total yield of the harvest immensely and the farmers have to suffer a loss in their income because of this.
- ❖ This is Arduino- Uno based system using microcontroller. This system uses a motion sensor to detect wild animals approaching near the field. In such a case the sensor signals the microcontroller to take action. The system implements IoT technology along with simple sensors.

BUSINESS MODEL:



SOCIAL IMPACT:

DRONES:

It simplifies supervision tasks for farms by being able to **cover hundreds of acres in one flight** and a wide variety of information about the condition of the land, irrigation needs, crop growth, the existence of pathogens, and, in the case of cattle, the number of animals, their weight and possible anomalies such as lameness or unusual movements.

BLOCKCHAIN:

It makes it possible to monitor crops and cattle from growth until handover to suppliers, **improving, for example, the traceability of the supply chain.**

INTERNET OF THINGS:

It makes it possible to **optimise the monitoring of farms,** mainly through **smart sensors** capable of measuring everything from solar radiation to leaf moisture and stem diameter, or the temperature of each animal in the case of livestock, making it easier to make all sorts of management decisions.

BIG DATA:

It makes it possible to monitor crops and cattle from growth until handover to suppliers, **improving, for example, the traceability of the supply chain.** By using this technology, if an imported vegetable poisons consumers the source of the outbreak can be easily traced and only the affected products withdrawn, instead of prohibiting imports of vegetables from the entire country of origin.

ENVIRONMENTAL IMPACTS:

- ✓ Environmental impacts on production, productivity and product quality.
- ✓ Impacts of climate change on agriculture and post-harvest production.
- ✓ Ensuring a reliable supply of produce or commodity under climate change.
- ✓ Use of superior (in terms of yield/productivity, vigour and pest and disease resistance) and climate-smart crop varieties.

CLIMATE CHANGE IMPACTS:

- ✓ Physiological effects on crops, forests and livestock (quantity, quality) and availability of fodder and pastures.
- ✓ Changes in land, soil and water resources (quantity, quality).
- ✓ Increased weed and pest challenges.
- ✓ Shifts in spatial and temporal distribution of impacts.
- ✓ Sea level rise, changes to ocean salinity and Sea temperature rise causing fish to inhabit different ranges. and socio-economic impacts,
- ✓ Decline in yields and production, Reduced GDP from agriculture

FEASIBILITY OF IDEA:

- The purpose is to grant monitoring device for crop safety to animal outbreaks and environment circumstances. This supports to preserve stretch and cash by dipping the physical exertion, else obligatory if the cultivators themselves have to afford guard for their crops with their endless physical administration.
- Wildlife regularly with eminence crops, because of which annual manufacturing of vegetation reduces inflicting monetary victims to cultivators. Agriculturalist suicide is huge bother due to less harvest. This low harvest is circumstance of two most significant purposes (Crop wrecked via untamed animals and Crop wrecked by meteorological conditions). The ranchers will treasure these SMS containing location.
- The prime thing of this task is to furnish a great reply to this distress. Each time either the wild animal or species are identified through PIR sensor which stimulates the web camera and gives rise to alert the buzzer in the locality, associates to the farmer direct to the cloud. When the moisture content is inferior to a terrifying level the sensor planted makes the water pumps to turn on. This ensures the complete safety of crops from animals also as from the weather conditions thus prevent the farmers.
- With field, several sensors are prepared like a sensor which substances facts about moisture fabric with soil, Temperature - Humidity sensor, and digital camera for detecting features of the soil. Information serene from the sensors is accumulated and ship it to ARM Cortex-A by means of the ability of gadgets which can be wired or wireless.

SCALABILITY OF SOLUTION:

The recognition system can be used for wide range of applications. It can be extended to large scale implementations such as,

- IoT technologies allow developing systems that support different agricultural processes. Some of these systems are remote monitoring systems, decision support tools, automated irrigation systems, frost protection systems, and fertilization systems, among others.
- Smart farming is a management concept focused on providing the agricultural industry with the infrastructure to leverage advanced technology – including big data, the cloud and the internet of things (IoT) – for tracking, monitoring, automating and analysing operations. Also known as precision agriculture, smart farming is software-managed and sensor-monitored.

SENSORS:

- ✓ Sensors for soil scanning and water, light, humidity and temperature management.

TELECOMMUNICATION:

- ✓ Technologies such as advanced networking and GPS.

SATELLITES:

- ✓ Satellites and drones for gathering data around the clock for an entire field. This information is forwarded to IT systems for tracking and analysis to give an “eye in the field” or “eye in the barn” that makes remote monitoring possible.

DATA ANALYTICS:

- ✓ Data analytics tools for decision making and prediction. Data collection is a significant part of smart farming as the quantity of data available from crop yields, soil-mapping, climate change, fertilizer applications, weather data, machinery and animal health continues to escalate.