EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

Problem Statement:
➤ Wildfires are blazes that are uncontrolled and fueled by different types of weather, dry underbrush, and wind. They cause significant destruction in a very short amount of time and are difficult to extinguish.

➤ Over 9 million acres of land have been destroyed due to treacherous wildfires. Wildfires also cause 339,000 deaths a year. In contrast, prescribed fires (fires ignited for ecosystem restoration and reduction of risk of wildfires) are typically managed to minimize downwind impacts on populated areas, however those in close proximity may be exposed to smoke 4.

➤ Multi-temporal threshold algorithm in forest fire detection using MSG satellite was the solution built in the Zimbabwe 1.

➤ A solution is required to monitor and display key atmospheric data in wildfire-prone areas so that potential wildfires can be identified before they grow significantly large.

The benefits or gains:
● Decrease in animal, plant and human deaths due to wildfires.

● The effects of smoke and pollution can be reduced.

Primary beneficiary:
● People living in wildfire prone areas.

● Firms and industries dependent on forest produce.

Secondary beneficiary:
● Government.

The minimum set of features/functionality:
- Solution should be capable of on-board data storage as well as wireless transmission of data to the central receiving unit at the 5-minute measurement time resolution.

- The data transmission range from should support a minimum of 15 km distance.

- The system should require minimal infrastructure and easy set-up.

- The system should be capable of operation for a minimum of 15 days without operator maintenance.

The market and business potential:
- Solution units could be licensed or sold to people and industries living in wildland fire prone areas. Revenue generated from maintenance and sale.