One of the big problems is how to reach a region consisting of islands that are difficult to reach by land or air, because there are sea barriers. The rural area usually does not have takeoff and landing areas. If not supported by the right technology, it takes a lot of transport equipment and human resources to deal with them.

UAVs have the potential for fulfilling many civil and military applications, including surveillance, intervention in hostile environments, air pollution monitoring, and area mapping. Moreover, UAVs capable of Vertical Take-off and Landing (VTOL) operations can provide many advantages over conventional manned aircraft, as they can be more maneuverable than fixed-wing aircraft.

The Octocopter has many advantages over other types of multi-rotor, such as Quadcopters or Hexacopters. The Octocopter has a higher payload capacity and is more robust in handling real disturbances like erratic weather and motor failure during flight.

Therefore, the aim of this research is to design a mechanism with high payload capacity and control methods to handle nonlinear, multivariable, and coupled characteristics of Octocopter, synergized with adaptive methods to handle disturbances due to wind and erratic weather.