WIT ACE HACKATHON

Team Challenger

**Goal 12: Ensure sustainable consumption and production**

**Problem Statement:**

Predicting best time to harvest leveraging AI for responsible production and consumption in large scale farming industry

**Overview:**

* In recent studies, it was found that Farmers are among the most likely to die by suicide, compared with other occupations. In India only, Farmer suicides account for 11.2% of all suicides in India
* Activists and scholars have offered a number of conflicting reasons for farmer suicides, such as anti-farmer laws, high [debt](https://en.wikipedia.org/wiki/Debt) burdens, poor government policies, corruption in subsidies and crop failure. Not harvesting the crop at the right time is also a contributing factor
* Harvesting too early or too late impacts the quality of the product. For hand harvested food, tugging the fruit, snapping the stem are some ways to identify if the fruit is ripe or not. However, this is not an efficient way of harvesting since it requires a huge manpower in tracking, survey, and checks. Also, these decisions are sometimes inaccurate
* Therefore, in this case study, we are suggesting a state-of-the-art solution for predicting the right time to harvest using Artificial Intelligence and deep learning

**Proposed Solution:**

* The end user we are targeting here are the farm owners and govt. authorities in association with local farmer bodies to yield better quality of their crops by harvesting them at right time
* High definition images of the farms captured via drones will be leveraged as an input for image segmentation. The architecture we are using is fast ai – unet model
* As an output, we will be getting a ripeness status of the crop, helping the farm owners decide which crop to harvest when. For the sake of simplicity, we have performed this analysis only on mango. However, this can be generalized to other fruits as well