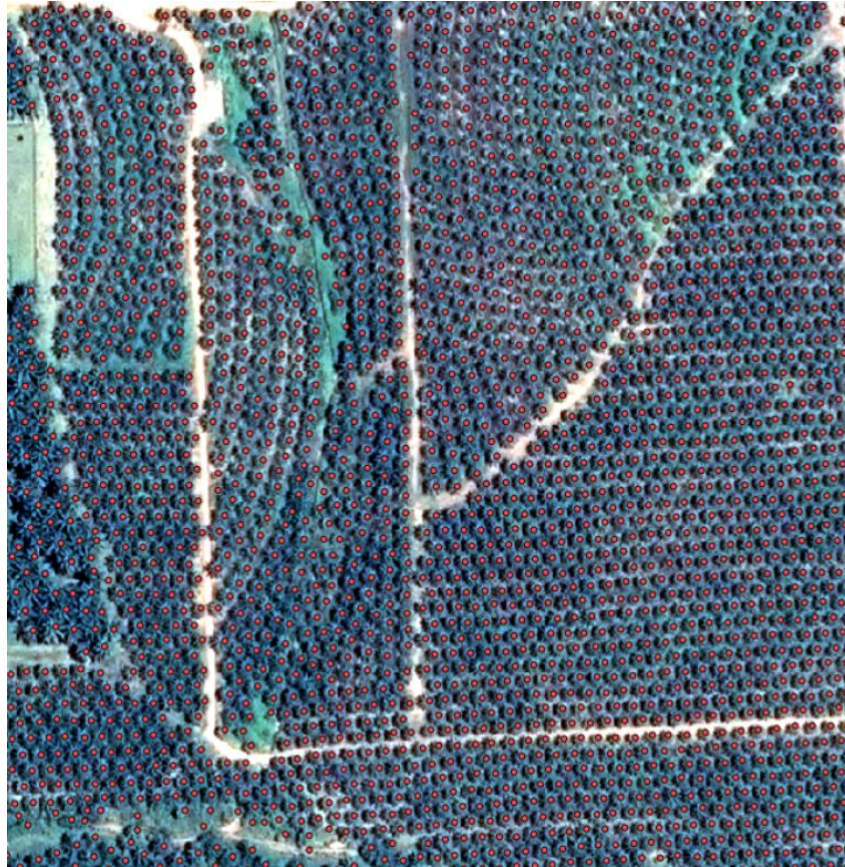


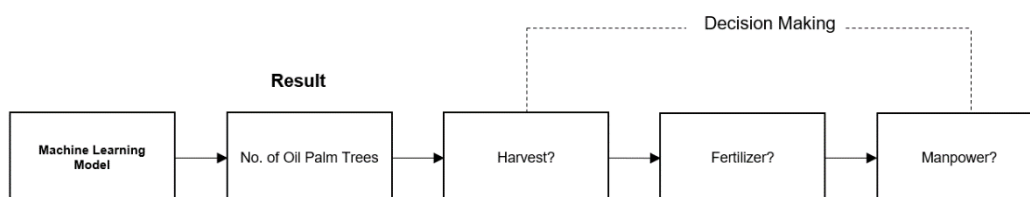


Oil Palm Tree Detection



Oil palm tree plantation is very common in South East Asia countries, such as Malaysia, Thailand, Indonesia etc, and is an important cash crop for their economic. In order to predict the output, the plantation owner needs to know the exact number of trees in a given area. However, counting trees in a huge oil palm plantation is not straight forward and traditional visual inspection method often generates inconsistent and inaccurate result, not to mention its labour-intensive, time-consuming, and expensive process.

Therefore, to enhance the accuracy of the counting as well as to increase the productivity of the process, 21AT Asia uses machine learning models to help to calculate total number of trees in any given area by extracting tree centers of oil palm trees from 0.5m satellite images and/or UAV images.



With this information, plantation owner is now able to accurately estimate, at the time of harvest, the amount of fertilizer needed and number of workers required.



Illustration

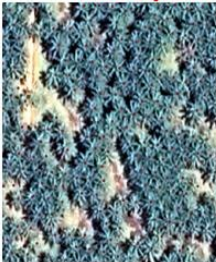
5 areas in oil palm tree plantation in Negeri Sembilan, Malaysia have been chosen for testing as shown below.



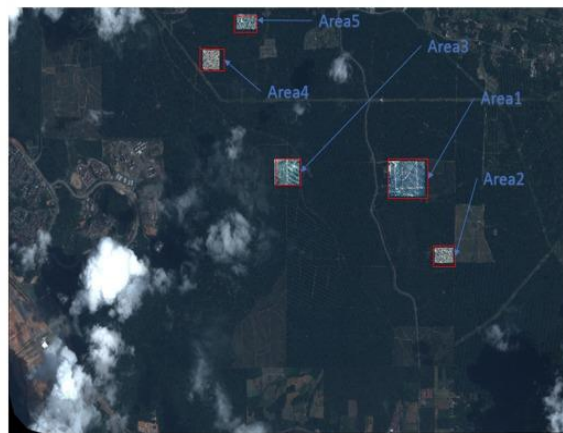
Testing Results

Based on the result of the 5 areas as shown, the accuracy is approximately 97%.

Area 5 Accuracy: 97%



Area 4 Accuracy: 98%



Area 1 Accuracy: 97%

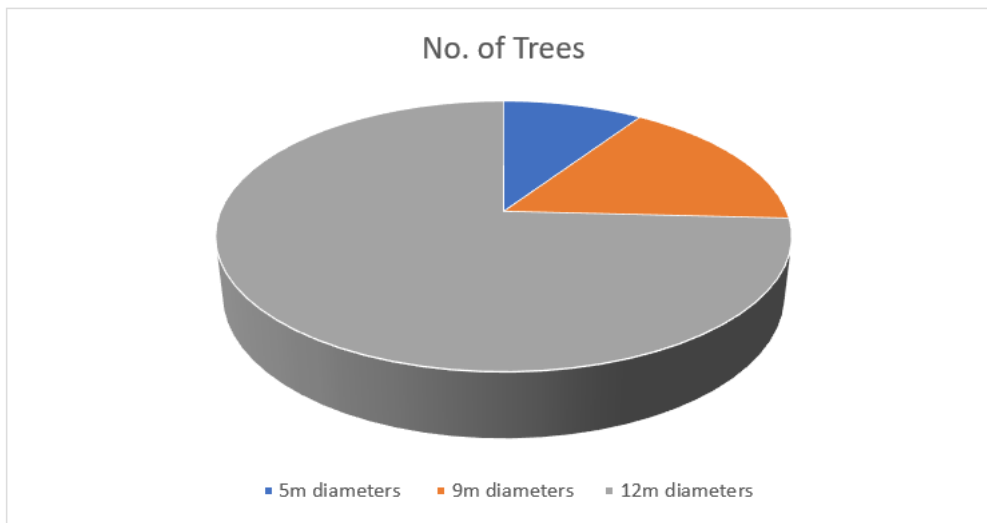


Area 2 Accuracy: 97%



Area 3 Accuracy: 99%





Diameters	No. of Trees
5m diameters	30,296
9m diameters	53,153
12m diameters	239,668

By analyzing palm tree image based on its physical dimension and classifying them into 3m, 5m, 9m diameters, our machine can obtain the total number of trees as 323,117.

To find out more on oil palm tree detection, contact us at the following details below.