PROBLEM STATEMENT 4

Title – Image-based recognition of Fish species and estimation of their proportion.

Problem Statement Bucket - Agriculture, FoodTech & Rural Development

Background - Marine fishery is very dynamic. During the active season landing of fish may be overwhelming for manual monitoring. At the same time, taking care of the fish landing is important for researchers and administrators. Manual reporting is limited with sample size, often too small, which leads to higher levels of errors and is prone to the wrong extrapolation for meaningful fish stock assessment.

This calls for automation to be the only feasible method to overcome the limitations of manual monitoring and reporting. The manual mode may rather be used to better train computer algorithms.

Objective - A solution should focus on image recognition for species made available in the database. Over time the database may get richer and thus, make machine learning better. Such a system should envision cameras installed at the harbours and weigh-bridges, where species may be identified by AI and their proportion (in mixed catch) can be estimated and report can capture biomass effectively and with minimal manual intervention. At present, the catch effort is often the weakest link in the stock assessment model. Such harbour based systems may reduce the errors significantly.

Another use is to integrate the cloud-based algorithms to help report catch through app(s) where all a fisherman need to do is to click the photo of the catch and enter the estimated catch weight.