

## **Sensitivity of fish landings to some meteorological parameters: A case study**

### **Abstract**

Problem statement: A widely held belief that climate change has impacts on sustainable fish catch leads us to find out how these effects influence fish landings in Sabah, Malaysia, especially for the west and east coasts, based upon monsoonal periods. Correlation of fish landings with rainfall suggests that local fish landing is believed to be sensitive to the effects of climate change. Approach: Rainfall, temperature, wind, the Southern Oscillation Index (SOI) and fish landings time series for 3 specific regions (Kota Kinabalu (KK), Tawau and Sandakan) have been studied using available local data for the last 9 years. Results: Results indicated significant fish landing variations due to the fluctuation of these meteorological parameters, for example, ~20% reduction is found during Northeast (NE) monsoon at KK. Heavy rainfall correlates well with high fish landings when fish landings lead rainfall by 1 month. Fish landings and temperature were also highly correlated. Fish landings leads wind stress by 1-2 months with 99% certainty and it is high when the wind direction is between 150-200° from north (approximately for South Easterlies and South Westerlies). Conclusion: The results confirmed that fish landing is low during NE monsoon period. In regard to the effect of El Nino Southern Oscillation (ENSO), low or negative SOI indicates high fish landings.