Future Work

The research work presented in this thesis was an attempt to understand the basin-scale variability of the mixed layer and then probe into the causative factors that brings about the observed variability using a variety of in situ and remote sensing data. The aim of the research was also to understand how these changes in the upper ocean regulate nutrients and chlorophyll in the Bay of Bengal. The study could bring out the role of atmospheric forcing such as heat, momentum and freshwater flux in controlling the mixed layer depth on a seasonal scale. In addition to these local atmospheric forcing, the study also brought out the role of advection of high salinity waters from the Arabian Sea, propagating Rossby waves, and the meso-scale eddies in mediating the changes in the mixed layer depth.

Though the thesis advanced our understanding of the mixed layer variability and its coupling to nutrients and biology in the Bay of Bengal, there is ample scope to explore further. For example, the role of each of the above mechanisms can be determined quantitatively using a physical-biogeochemical model. Another area which needs urgent attention is the generation of quality biogeochemical data. The limitation of this study was the lack of adequate chlorophyll and nutrient data, which did not allow to fully resolve all the characteristics of the seasonal variability.