6. Conclusions

The Godavari River transports ca. $3.14 \times 10^6$ ton particulate carbon per year. 89% of this transport ($2.81 \times 10^6$ ton) is in the form of organic carbon. The river transports ca. $0.29 \times 10^6$ ton particulate nitrogen annually, 36% of this transport ($0.10 \times 10^6$ ton) is accounted for by amino acid nitrogen. 98% of the total estimated amino acid transport is protein amino acids.

During non-monsoon period the Corg level in suspended matter is high in the upper reaches of the river and drops drastically before the beginning of estuarine region. Most probable reason behind this reduction is the turbid water condition at this sampling location.

C/N ratio shows spatial variation in the main channel of the river. High C/N ratio in the suspended matter from monsoon season has a bearing on terrestrial organic matter washed away from the catchment area.

Down core variation of organic carbon content reflect pattern of sedimentation. In the estuarine region, depositional feature has been observed and this is further amplified by C/N ratio and THAA data. C/N ratio varies between a wide range of 3.56 to 14.38 in suspended matter, bed and core sediments. Analysis of cores from deeper layers may help in establishing a sedimentation rate marker.

The distribution pattern of various biogeochemical indicators and amino acid concentrations in the estuarine region signifies
once again the role of estuary in trapping most of the riverine transport and thus playing an active role in the carbon biogeochemical cycle.

A more comprehensive study, based on extensive sampling encompassing seasonal and spatial variations, on the nature and transport of organic matter by the river Godavari is needed in order to develop a thorough understanding on the basin wide processes as well as on the role of this river in carbon biogeochemical cycling.