



# CARBON AND NITROGEN STORAGE IN HOKERSAR WETLAND (A RAMSAR SITE): POTENTIAL FOR CARBON SEQUESTRATION

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## ABSTRACT

Wetlands are the largest nutrient sinks of carbon and nitrogen as they store them in their sediments and also take up into their plant biomass. The overall goal of our study was to quantify C and N storage of Hokersar wetland ecosystem, and to highlight its carbon sequestration potential. Samples of plants and soils were collected in 2016 and 2017, respectively. Plant biomass and its allocation pattern to the aboveground (AG) and belowground (BG) components were studied. We found that the sediment storage of organic carbon (OC) and total nitrogen (TN) of the wetland was of the order of 78.2 Mg C ha<sup>-1</sup> and 6.9 Mg N ha<sup>-1</sup> respectively. However, plant biomass represented smaller but sizeable pool when compared with the sediment pool with the figures of OC and TN for AGB of 16.26 Mg C ha<sup>-1</sup> and 0.93 Mg N ha<sup>-1</sup> and for BGB, the figures were 12.85 Mg C ha<sup>-1</sup> and 0.63 Mg N ha<sup>-1</sup> respectively. The wetland ecosystem however, represented a total OC pool of 107.31 Mg C ha<sup>-1</sup> and TN pool of 8.46 Mg C ha<sup>-1</sup> suggesting its higher potential of sequestering carbon and nitrogen and its sink capacity which can be enhanced in future, if its ecological nature is maintained keeping in view the huge anthropogenic pressure on the wetland.

**Keywords :** Allocation pattern, Anthropogenic pressure, Carbon sequestration potential, Hokersar wetland, Organic carbon, Plant biomass.