

## **Abstract**

Changes in the pattern of life and human needs is changes in the type of operation and create a different users in the region. This users Past performance is largely non-normative, which had a devastating impact on natural resources and is on balance in cycle of materials and biological factors in ecosystems. The soil is one of the basic resource in any ecosystem, that physical and chemical properties may effecy by a land use change. In recent decaded, with the aim of reducing the level of land degradatation, is trying to reducing operations and corrective such as grazed and planted in rangelands and the use of multiple implant systems in agricultural lands as agroforestry systems are achieved a good level of protection and production. Inche-boron region in northern Golestan province and neighboring Turkmenistan border is one of the regions that different users has been implemented there. The purpose of this study is the effect of four different user (Agroforestry, Rangeland planted, Dry farm and Grazed rangeland) on carbon sequestration and erodibility of soil in Inche-boron region. After that field evaluation of treatments, samples were harvested with a randomized complete block design of 0-25 and 25-40 centimeter of soil depths for each treatment. Parameters studied is included of soil organic carbon, soil organic matter, bulk density, carbon sequestration, mean weight diameter and soil texture parameter in both of depth that were meseasured and determined in soil and water laboratory. The result were analyzed by using of ANOVA and Duncan test. The results showed, that rate of carbon sequestration changes showed significant difference at 1% level ( $Pvalue < 0.01$ ) between dry farm and other land uses. In the evaluation of erodible, the result of related to aggregate stability showed significant difference at 1% level between agroforestry, dry farm and grazed rangeland. Also the statistical analysis of soil texture components were seen significant difference at 1% level between agriculter and pasture users. Results showed that the agroforestry has the highest level of stability and Carbon Sequestration between land uses. Fainally, between the managements study, implementation of agroforestry in agricultural systems and plants operation in range projects is recommended in this area.

**Kay words:** Carbon sequestration, Erodibility, Agroforestry, Rangeland, Dry farm, Inche-boron.