

### **VIII.2.A.3. Economic Benefits of Carbon Sequestration through Afforestation Programmes**

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This paper focuses how afforestation programmes help in sequestering carbon in growing trees. It examines the evidence from the tree plantations, which resulted from the management activities of Tree Growers Cooperative Societies (TGCS). These wood plantations mitigate CO<sub>2</sub> emissions by removing carbon from the atmosphere and sequestering it. The net flux of carbon in the atmosphere can be reduced if (i) wood is substituted for fossil fuel burning and the trees are replanted to recycle the carbon back into the atmosphere and/or (ii) wood is used for non- fuel purposes that do not lead to carbon emissions.

Other than environmental benefits, the plantation provides monetary benefits through the sale of products as well as employment opportunities to local people. The major costs of the plantation programme such as land cost, setup and development costs are during the initial years while there are maintenance costs during the life cycle of the plantation. The data, obtained from six TGCS in India, were analysed to estimate the amount of carbon sequestered for two land management scenarios, viz., one time cutting and sustainable harvest. The amount of carbon sequestered ranges from 90 to 120 tonnes per hectare and the cost of carbon sequestration ranges from \$12 to \$20 per tonne of carbon. The results show that the type of species planted and the fuel cycle play an important role in the carbon balance.