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# ADOPTION OF AGROFORESTRY AMONG SMALLHOLDER FARMERS IN RATNAGIRI DISTRICT OF MAHARASHTRA STATE

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**ABSTRACT: The present study was undertaken with 162 farmers for the agriculture year 2015-16. The respondents were interviewed with the help of specially designed questionnaire. Research indicated that agro-forestry systems are very efficient in terms of resource use and could introduce an innovative (agricultural) production system that will be both environmentally friendly and economically profitable. Most of the respondents in study area were small farmers. It was found that maximum (14.07%) number of farmers practiced agro-forestry for food, fodder, fuel-wood and timber. Result showed that majority of respondents practiced agrisilvicultural, silvipastoral and agrisilvipastural system. The findings also revealed that lack of knowledge on agro-forestry (42.22%) was one of the major factors that affect farmers decision to adopt technologies. Maximum (58.51%) respondents had a problem of less production of agriculture crop under agro-forestry and 25.18% of respondents don't have any problem with cultivation under agro-forestry. Farmers have knowledge of indigenous trees which support agro-forestry as they allow certain tree species to naturally grow on their farms and tend them for various benefits such as soil fertility improvement, fuelwood production, water conservation, and timber production. Indigenous trees planted by farmers that could be incorporated into agro-forestry systems are *Terminalia tomentosa*, *Terminalia paniculata, Tectona grandis, Anacardium occidentale*, *Mangifera indica* and *Bambusa arundinacea*. Maximum (14.07%) respondents planted combination of mango and cashew nut plants on their farm. The study recommends that adequate education must be given to farmers to promote adoption of agro-forestry technologies in the Ratnagiri district of Maharashtra state.**

**Key words:** *Agro-forestry system, adoption, problems, socio economics.*

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Agro - forestry is a sustainable land-use system that maintains or increases total yields by combining food crops (annuals) with tree crops (perennials) and/or livestock on the same unit of land, either alternately or at the same time, using management practices that suit the social and cultural characteristics of the local people and the economic and ecological condition of the area (Chundawat and Gautam, 1993).

There is tremendous scope for agro-forestry because India has achieved self-sufficiency in food production. Now its attention is becoming more focused on the ecological problems and shortage of fuel, fodder and other outputs as well as unemployment. Agro-forestry has vast scope in meeting this requirement through multipurpose tree species as: large area is available in the form of farm boundaries, bunds, waste lands where this system can be adopted. This system permits the growing suitable tree species in the field where most annual crops are growing well. By growing trees and crops on agricultural or forest land, resources are utilized efficiently. System has potential generate employment, provides raw material for the cottage industries, helps in maintaining ecological balance, soil and water conservation, soil improvement, helps in meeting various needs of growing population (Anonymous, 2017a).

Combining trees with food crops on cropland farms yield certain important environmental benefits, both general ecological benefits and specific on-site benefits. In spite of these benefits, the adoption of agro-forestry technologies at the farmer level is low and therefore efforts to increase the adoption of these technologies should take into account the socio-economic issues as well as the method of extension (ICRAF, 1997). Individual factors that may influence attitudes regarding a technology and subsequent adoption include household preferences, resource endowments, market incentives, biophysical features, risk and uncertainty, as well as perceptions of the biophysical performance, profitability, acceptability and feasibility of the technology (Franzel et al., 2002). Furthermore, the technologies can also potentially