

SOCIO-ECONOMIC CONDITIONS AND END-USES OF MPTS ON SMALL FARMS IN BARANI AREAS OF PAKISTAN

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A survey was conducted in barani areas of the Punjab province of Pakistan to study the socio-economic conditions of the small farmers, agroforestry practices, the distribution and uses of MPTS, and main problems of the small farms. A predesigned survey questionnaire was used. The study area spread over 15 tehsils in the six predominantly rainfed districts of the Punjab. The sample consisted of 100 households possessing 176 farms in 9 villages distributed in 9 tehsils of 4 districts.

Data showed that 74% of the farms had trees planted in various patterns whereas 26% had no tree at all. Out of 176 farms, only 3 i.e., 1.7% were bigger than 50 acre size and 98.3% were smaller; 86% were smaller than 12.5 acre size. Of the farms with trees, 85% had scattered trees, 27% in linear form and 6% in block form. Sixty eight % farms are self operated, 22% by tenants and 10% by landlords. Farm tenure had no effect on the pattern of planting. Percentage of treeless farms was more in barani farms and least in irrigated ones. Linear and block plantations were more common in irrigated farms whereas barani farms had generally scattered plantings.

MPTS are already being grown by small farmers. Acacia nilotica occurs as principal species on 26% of the farms, whereas Melia azedarach on 24%, Dalbergia sissoo on 23%, Acacia modesta on 23% and Zizyphus mauritiana on 22% farms, besides their presence on other farms also as second or third species. Dalbergia sissoo, Acacia nilotica, Melia azedarach, Eucalyptus sp. and Morus alba appear to have been preferred in linear planting, and Dalbergia sissoo, Acacia nilotica, Acacia modesta, Morus alba and Eucalyptus sp. have been preferred for block planting.

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There is little variation in the choice of MPTS for planting according to the size of farm. Acacia modesta, Melia azedarach, Morus alba, Siglyphus mauratiana showed no variation in their occurrence according to the farm tenure. Dalbergia sissoo occurs in greater frequency on self operated and landlords farms, whereas Acacia nilotica showed maximum presence on self operated farms.

Most of the MPTS were present on farms which were upto 2 kilometer distance from the household, only Acacia modesta and Melia azedarach showed no variation in their occurrence according to the distance from the household. Source of irrigation for 69% of the farms was barani (rainfed), 24% irrigated and 7% mixed (barani and irrigated). Acacia nilotica, Dalbergia sissoo, Eucalyptus sp. Melia azedarach and Morus alba were present mainly on irrigated or mixed farms. Acacia modesta, Ziglyphus mauratiana and Tamarix articulata were mainly present on barani and mixed farms.

Use of MPTS for fuel was planned by 83% of the farms whereas timber, fodder, cash and fencing were the planned uses on 44%, 35%, 9%, and 6% farms respectively. Pattern of planting had no effect on the use of MPTS except in case of block planting in which 100% of the farms showed their planned use as fuel. The uses and combinations of uses of MPTS proposed by the farm households in the study sample vary little according to the farm size. Similarly there is little variation in planned tree uses according to the tenurial status of the household. The most common use proposed is fuel, with timber use being a strong second preference and fodder being in last place for self cultivated as well as for both landlords and tenants. Generally distance of farm from household had no effect on the planned use for fuel and timber; the

planned use for fodder, fencing and cash decreased with the distance from the household. Fuel and timber had a planned use equally for all the farms having different water sources. Fodder was preferred more on pure barani farms. Similarly cash was preferred more on irrigated and mixed farms.

#### A B S T R A C T

The farmers are interested in multipurpose uses of trees and there are many indigenous tree species which are being put to these uses. Survey showed that the species most preferred by the farmers are Acacia nilotica , Melia azedarach, Dalbergia sissoo , Acacia modesta and Zizyhus mauratiana . The tree uses in which the farmers are most interested are fuel, timber, fodder, market-sale and fencing. Most of the farmers are interested in two or more of these uses. The most common combination being fuel + timber.

The main problems of the small farmers of the study area were scarcity of water for irrigation, soil erosion, protection from animals, tree-crop competition, fertility of the soil, etc. The need is to improve the quality of MPTS; management packages for both trees and crops; identification of effects of tree-crop competition for light, water and nutrients; economics of growing trees in combination with various crops; and finding out ways to provide food security to small farmers through MPTS.