M.SC FORESTRY THESIS RESEARCH
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Firoj Ansari

This study was done in Hilkot, one of the upland watersheds of Mansehra District, North West Frontier Province, Pakistan. The Hilkot watershed is the part of Siran river watershed, an important tributary of Indus River system. The watershed area falls under semi humid climate. Questionnaire-cum-interview method was adopted for this study. Using stratified random sampling technique and the intensity of 4.5 percent, data were collected and analysed using computer based "SAS" and Microsoft Excel packages. Average household size of the study area was 8.5 persons. Only 2 percent respondents replied about the problem of population increase. Illiteracy was another problem of the area and the literacy rate, particularly among Gujars and other tribes was very low. Eighty percent of the sample population among Gujars were tenant whereas only 8 percent were owner and the rest 12 percent were owner-cum-tenants. Majority (67 percent) of the people of the area had income less than Rs. 3000.00 per month and the rest 33 percent were having income between Rs.3000.00 to 6000.00. There was positive relationship between income and family size. Horticulture was considered as more income generating profession and liked by majority of the respondents than farming. No marked change in land use was observed during the study. There was no relationship between land holding and family size, and family size and ownership. The study has revealed that, 100 percent of the population depend on wood to derive energy for cooking and heating one way or the other. Overall the study revealed that there were strong relationships between tribes and socio-economic conditions of the people.

Tariq Mahmood

The study aimed at finding and comparing the infiltration rates of different land uses in the Attock district, Punjab Province. The study area lies in northern

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watershed areas of Punjab named as, Potwar peneplain including Kala-Chitta and Salt Ranges. The major land uses of this region are grazing in waste land and scrub forests/shrubs along the hills and rainfed agriculture on the uneroded plains and plateaus. The most serious watershed management problem in this region is the gradual erosion and gully formation of the cultivated land. The major objective of this study was to quantify the effects of different land uses that is forest, agriculture and range on the infiltration capacity of the soil. Infiltration rate (cm/hr) along with soil bulk density (gm/cm^3) and moisture content percentage were studied for three different land uses namely Forest, Range and Agriculture in village Mullan, Mansoor, Attock.

The average infiltration rate 28.99 cm/hr was observed in the forest land followed by agricultural land (23.36 cm/hr). Lowest (17.03 cm/hr) infiltration was observed in range land. The average soil bulk density was highest (3.30 gm/cm^3) in range land followed by agricultural land (3.21 gm/cm^3). It was lowest (3.09 gm/cm^3) in forest land. Soil moisture content percent was highest (19.26%) in forest land followed by agricultural land (2.83%). It was lowest (1.83%) in range land. The F-test indicated that the infiltration rates of forest land were significantly greater than the agriculture and range land at 95% confidence limit.

Shahid Ishaque Khan

The main purpose of this study was to assess existing management approaches for Eucalyptus on farmlands in district Attock. To conduct this study a sample size of 50 respondents (farmers) from tehsil Attock was adjudged sufficient. The selection of respondents was made through stratified random sampling technique. The primary data were obtained through questionnaire and direct contact. Eucalyptus plantation with agricultural crop production proved that the plantation are more profitable than agriculture alone.

According to survey, the negative trend due to which the farmers were not willing to plant more Eucalyptus on their farmlands was accounted to two major factors i.e. poor marketing and low return. Fifty-three percent farmers grow Eucalyptus for fuelwood production, thirty four percent for fuelwood and furniture while only thirteen percent for pulp industry. The mechanisms for supply and demand for Eucalyptus need to be worked out to enhance raw material from the area to feed industry.

Naveed Ahmad

The study was conducted in three villages to collect the data. A questionnaire cum interview method was used to collect the data. The secondary data from various officials of the forest department and non governmental organizations (NGOs) were also collected. The statistical analysis of data revealed that the dependence of the local population on the forest is very high for timber, fuelwood and fodder etc. The fuelwood and the timber were available in the guzara forest of the area about 15 years back. Now due to elimination of trees from the guzara forests, people have started relying on reserved forests to fulfil their fuelwood and timber needs.

The reasons for forest degradation were mis-management and illegal timber trades. The tobacco cultivation also caused tremendous damage to the forest resources. A lot of fuel wood was being consumed for tobacco curing. The existing socio political environment were also hurdle in effective and sustainable management of the forest resources.

Nadeem Hussain Abbasi

The study was undertaken to detect current changes in the forest cover of an area with the help of satellite images taken during 1975 to 1998. For detecting the cover change, compartment wise secondary stock data given in the working plans of the study area of 1975-76 and 1998-99 were utilized. Colored maps depicting the various stocking position of all the 48 compartments of the Giddarpur forest area were produced by using the GIS techniques (digitization, cleaning and building the layers by topology creation by using ARC/INFO and ARCVIEW GIS software).

The general forest condition of the study area in 1975, was comparatively better and the stocking density was 81.72% as against only 41.33% at present. The causes of depletion were investigated through questionnaire to get necessary information directly from the local people. The reasons for depletion of forest enumerated by the people in the study area are: fuelwood collection, illicit felling of trees, free grazing and mis-management under forest societies system and local forest department.

Ahsan Ahmed Raja

The respondents of the study were grower, middlemen and industrialists. Growers were contacted randomly at their fields. A questionnaire was prepared for growers and industrialists separately. The analysis revealed that 62% farmers grow Eucalyptus, 23.80% Eucalyptus and Kikar while 9.52% grow only Kikar. The study also indicated that farmers were getting low price for their products. Farmers grew trees to enhance their income but did not get their suitable returns because of lack of marketing information. As a result, farmers were being exploited by the middlemen. The permanent link between farmers and end users was found missing. Coniferous wood was supplied from NWFP and AJK whereas mango and shisham wood was obtained from Multan and Dapher. Commercial species such as teak and meranti were imported from foreign countries.

Syed Moazzam Nizami

This study was conducted with a view to find out the information viz, Effect of PFSDP on socio economic conditions of the farmers in Rawalpindi district, problems faced by the farmers in participation in the project and perception of the farmers about the scope of the project.

The data were collected from 52 randomly selected participating farmers in 5 tehsils of Rawalpindi district namely Rawalpindi, Murree, Kahuta, Kotli Sattian and Taxila. The relevant data were statistically analysed and revealed that education played an important role in the participation of farmers in the project. Major crops grown were wheat, bajra and maize. Majority of farmers were participating for profit and were interested in planting more trees on their farms. The farm size was influencing factor in adoption of tree planting under PFSDP. The highest participation was 71% by the farmers having farm size greater than 250 kanals (12.5 ha). The main problems faced by the farmers were marketing of trees and provision of subsidy or incentives. The PFSDP has clearly affected the socio economic conditions of the farmers as perception of majority of the farmers was that they were earning more profit than their expectations by participating in the project as tree planter.

Almost 58% of farmers were in favour of continuation of the project or launching of similar projects with some modifications.

Syed Haris Rehman Gilani

This study was conducted in Kasur district to assess the attitude of farmers towards farm forestry and to determine the constraints in way of tree planting on farmlands. The area was chosen for this study because it is one of the most fertile district of the Punjab where farmers are very industrious and highly responsive to suggestions for improvements in yield and quality of crops.

According to the random sampling technique, four villages were selected from the whole district. Fifteen farmers in each village were then randomly chosen and data were collected by a structured interview schedule.

It was found that the most important advantage of tree planting in farmer's view was its value as a source of income. About 45% of the farmers counted this merit as one of the many advantages of trees. Shade (23%), fuelwood (20%), timber (7%) and trees role in the environment (5%) were the other advantages of tree planting in view of farmers.

Regarding main disadvantages of trees perceived by the farmers, low crop production was reported by 56% of the respondents, 42% stated difficulty in ploughing while 2% felt that trees occupy space.

About constraints in planting trees on farmlands, the non-availability of planting stock was reported by 45% of the farmers; shortage of water (26%), lack of land for planting trees (22%) and problem of marketing of wood (7%). Strangely, the farmers did not report the lack of incentives offered by the forest department or lack of technical know – how as one of the constraints. The result also revealed that 70% of the farmers favoured increasing trees on farmlands.

It was observed that education, tenurial status and number of trees/acre owned by the farmers were the three most important determining factors influencing the attitude of farmers towards tree planting. Educated farmers favoured tree planting while less educated showed low interest. Similarly farmers with greater number of trees on their farms and those who were self – cultivator considered planting trees as more useful than other ones. Respondents farm size, monthly expenditure (income) and household size had insignificantly influenced their attitude.

It was concluded that the overall prospects of farm forestry in the area was

apparently bright. However, it would be better if the misconception and constraints perceived by the farmers are removed by taking corrective measures. A strong extension service training of the farmers in adopting appropriate agro-forestry models may be very helpful.

Ch. Mudassar Shaukat

The study was undertaken to assess the impact of flooding on rural communities of village Attaharan Hazari to evaluate their adaptation strategies against flood hazards. Out of total 19 mozas Moza Attaharan Hazari was selected and studied. In all 78 respondents were randomly selected for data collection. The sampling intensity was 1 percent. Questionnaire-cum-interview technique was used. The secondary data regarding annual peak flows at Trimmu Headworks were collected from the relevant offices.

The flood frequency analysis was done using "Gumble Distribution Method". The analysis revealed that flood had adverse effects on the rural communities and their entire social and economic system and life style were completely impaired due to severe intensity of flood but proved blessing in case of low floods. Major impediments to the adaptation of survival strategies were lack of information, capital and non-availability of required inputs.

The study revealed that overall respondents in the study area had poor living standard. Landholdings were small and 71 percent of the respondents had landholding below 12.5 acres. Average family size in the area was 8.9. The level of education attainment was very low. Family members of household mostly remained engaged as workers on farm activities. The average per acre income from agriculture was Rs. 6200 and per household income from all resources was Rs. 67,987. Flooding also affected the monetary values of their lands.

Respondents reported the adverse effects of flooding on livestock, the strategies in the form of shifting of the livestock to safer places. As far as the effects of flooding on houses were concerned, respondents reported a number of adverse effects on houses ranging from walls falling to reduction in life span of houses and the mitigation in the farm of construction on high heaps. Households were relatively more engaged in subsidiary sources of income because of low income from agriculture sector. While no person showed their willingness to change occupation and the desire of out migration.

Khurram Mahmood

This study was carried out for the village Nambheramal, Tehsil Murree, District Rawalpindi where Environmental Rehabilitation Project (ERNP) was in progress. The study revealed that the tree cover on the farmlands and grazing lands was not sufficient to meet the demands of the villagers. The project proposed to protect and manage state forest jointly by the Forest Department, ERNP Project and the local people of the village on sustainable basis.

Athar Ali Khan

The study concludes that the socio-economic changes had not favoured to lessen the biotic pressure on the natural resources of Basho watershed. The installation of the hydroelectric power plant had decreased the use of wood for lighting and heating.

Livestock was the main income generating activity in the area, which could be made more profitable if the improved varieties of livestock are introduced. The marketing of livestock in the local market can also generate income in these villages.

Poultry could play an important role for more income. There was great potential in the area to start poultry farming with low investment.

Fuelwood from forest is the main source of energy for heating and cooking and substitutes are not cheaply available to the people.

With the participation of community a suitable grazing system should be introduced for the utilization of pasture.

Planting of multipurpose tree species in the community plantations could also be helpful in reducing pressure on the pasture by increasing fodder production.

For the motivation of community the platform of village organization should be used and BDO platform should be strengthened by giving some powers, and by bringing institutional reforms.

The forest department should work with NGOs to formulate an integrated

programme for the conservation and sustainable management of the forest and pastures.

Muhammad Junaid Dayar

The study was conducted with the view to find out achievement of community forestry practices carried out by the project and whether objectives of project cater the needs of rural communities or not.

For the above purpose, the data were collected from 50 farmers from the study area. The relevant data were statistically analysed. Major findings of the study were that half of the respondents were illiterate. Majority respondents belonged to farming profession; average family size was 8.5 persons. Majority of farmers was planting trees for domestic use and economic benefits. 84 percent of the farmers were in favour of extension of the project. The major problems in the study area were the non-availability of fuelwood and fodder. The availability of both the commodities had increased due to project activities. Financial gains were also made by the respondents by selling nursery seedlings.