

SOCIO ECONOMIC IMPACT OF COMMUNITY PLANTATION IN SALARZAI VALLEY, BAJAUR AGENCY, KHYBER PAKHTUNKHWAH

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ABSTRACT

The aim of the study is to assess the impact of socio economic condition of the people as these plantations have a potential to address the menace of rural poverty besides increasing the forest cover in the area. Two-stage Random sampling was adopted for the selection of respondents. The sampling intensity was kept as 12.5%. Major source of income in the area is farming. The plantation in the study area increases fodder production to fold for livestock for fulfilling their daily needs. Firewood is the main source of fuel. Average fire wood consumption per day per household is procured from these plantations. The trend of more firewood use is also observed after plantation. Some portion of population also obtain low quality timber from these plantations such as small ballies etc. which is used in kacha, semi paka houses and sheds for livestock because the Chir plantation are not mature in the study area. These plantations help in creating the income opportunity of local communities by selling of wood like Eucalyptus specie which is cut after regular intervals. Some individuals are also benefiting from the sale of fuel wood and grasses along with opportunities of daily wage labor at the time of planting and other cultural activities. Community Plantations increase forest cover which in turn provides opportunity for wildlife conservation in the area due to habitat.

INTRODUCTION

Changes in land use and management have improved household income but at the cost of increase in intensity of biomass removal from forests and loss of forest cover. As farm productivity is dependent on forests, continued depletion of forest resources will result in poor economic returns from agriculture to local people together with loss of global benefits from forest biodiversity and ecosystem services. Policy support for sustainable income from forests to local people as well as technologies enhancing agricultural productivity through conservation of traditional crop varieties and efficient resource recycling within agro ecosystems is needed for sustainable livelihood of local communities alongwith with global benefits from the Himalayan forests and ecosystem services. (Semwal *et al.*, 2004).

Social forestry in the Indian state of Orissa is evaluated within the framework of stated socio-economic policy objectives, taking into account both distributional equity and efficiency aspects. Socio-economic profitability and optimum rotations are determined for village woodlots and institutional

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plantations for three site qualities (SQI, SQII and SQIII)⁴ on the basis of three criteria: net present value, land expectation value and annualized land rent. Socio-economic benefits are large in SQI and SQII but if social forestry is to be socio-economically profitable in SQIII it should use consumption-oriented funds diverted from rural development programmes. Sharma and McGregor (1991).

Potential and importance of tree as saving and security for many of the rural poor of the south has been long overlooked due to professional biasness. Lack of learning and misunderstanding are the nature of deprivation. This paper considers the ways in which trees are used and can be used to provide security and insurance against contingencies. The paper also looks at the role of trees having direct uses in averting seasonal shortage and as a source of cash. Trees have also been used as part of long term strategy for increasing saving and providing security. (Chambers and Leach, 1993).

To evaluate the impacts of "Tarbella Watershed Management Project", a study was conducted. The study reveals that due to plantation on marginal (private and communal) land show tremendous impact in term of retaining more than 8 million tons topsoil, production of timber worth 10 billion rupees at the moment. Provision of firewood to local communities worth Rs.417 million per annum, improvement of tourism as aesthetic value enhanced due to plantation, improved agriculture practices, mitigating the process land fragmentation, improvement in livelihood capital/assets (Natural resources etc.) and provision of jobs opportunities in the area also worth mentioning. The project also motivated other agencies to embark such like projects, aiming environmental rehabilitation and rural development. (Khan and Swati, 2004).

The economic indicators based on Benefit Cost Analysis showed that all forest dependent societies could be made economically sustainable. Sustainability is often hampered by low community participation in the tree plantation programmes because of their long gestation period. It is therefore important to generate immediate returns by planting short duration fodder plants to make them attractive particularly for small and marginal farmers. Besides direct benefits, the programme resulted in environmental benefits, soil and water conservation, rise in water table and social empowerment, making it suitable for replication in other areas (Intodia *et al.*, 2002).

Small farmers opposed to have trees on their farms and some farmers already had trees on their farms but expressed interest in planting more trees. Some farmers were interested in planting large blocks of market-oriented exotics and requested for plantations of multi-purpose native trees for market sale.

⁴ Site quality I, II and III

Majority farmers requested for trees to meet household needs for fuel and timber. Many foresters did not agree to the statements of farmers that increasing supplies of fuelwood could reduce the burning of dung. (Dove and Michael, 1992).

There is substantial potential for the improvement of homestead forestry, and that properly managed homestead forestry can alleviate the poverty of rural people by increasing overall household income. The analyses demonstrate a number of important conclusions: (i) tree-planting increased with the amount of homestead land owned; (ii) farmers whose main source of income was non-agricultural were more willing to plant trees in the homestead; (iii) purchasing cost of fuelwood had a positive influence on tree-planting decisions; (iv) number of male family member had a positive influence on farmers' tree-planting decisions; and (v) knowledge of the activities of the forestry extension programs had a positive influence on tree-planting decisions. (Salam *et al.*, 2000).

STUDY AREA

The Bajaur Agency is situated in the north-west of Khyber Pakhtunkhwa Province. The landmass of the Agency lies between 34° 30 and 34° 58 North latitudes and 71° 11 and 71° 48 East longitudes. The agency is surrounded by Lower Dir district on the north-east, Afghanistan in the north-west, Mohmand Agency on the south-west and Malakand Agency on the south-east. Physically, it comprises the two large linked valleys of Nawagai and Barang, which are encircled by mountains ranging in altitude up to about 3000 meters. The terrain of the Agency is mountainous and hilly. In the northern part, mountain ranges are 3000 meters high. Towards south the height gradually decreases and on the southern border, peaks are slightly over 2500 meters high. In the central parts the height further decreases and the land slopes down to the southeast direction while the central parts slopes to the northwest through Jandol Khwar and Panjkora River. The Panjkora River flows in southern direction till it joins the Swat River. The elevation of plain areas of the Agency is about 2500 ft. to 3000 ft. above sea level. The hottest months are June and July while the coldest months are December and January.

METHOD AND MATERIALS

Two-stage Random sampling was adopted for the selection of respondents. At first stage, 10 villages were randomly selected where the plantations were raised and established. In second stage five respondents were selected randomly from voter lists of concerned selected villages. Thus a total 50 respondents were interviewed for gathering the desired information related to the purpose of study. Sampling was done in two stages. In first stage i.e. in village selection the sampling intensity was kept as 12.5%. Out of 80 villages 10 villages

were randomly selected. Then out of each village five respondents/household were randomly selected. Assuming the average number of household in the village as 500, the sampling intensity remained 1%. Data was collected from 50 respondents through a structured questionnaire containing 25 questions. The questionnaire was first prepared and then tested in the field to increase its validity. After testing in the field the questionnaire was modified according to the local situation. The respondents were interviewed personally at their Hujras⁵ or at farms. The Interview schedule was structured in English but the Questions were asked in local vernacular for convenience of the respondents so as to obtain reliable and required information with maximum accuracy. Response was 100% as all the selected respondents were contacted and interviewed. All the relevant information against each question was recorded. Notes were also prepared in the field book general information about the study area. All the collected data was transferred to a tally sheet for the purpose of compilation and tabulation. Simple statistical techniques of average and percentages were used for interpretation and discussion of data, derivation of conclusions and making of pertinent recommendations and suggestions.

RESULTS AND DISCUSSIONS

Positive effect of plantation was observed on agriculture crop production and protection. Majority of respondents (66%) were of the view that due to planting of trees the income is increased in the shape of cash earned from sale of trees, meeting of local requirement of firewood, fodder and availability of timber for local use. The other advantages enumerated were soil erosion control and minimizing flood hazards. Whereas, 18% of the respondents held that due to plantation the crop production decreased. While 16% did not answer the question. (Figure.1)

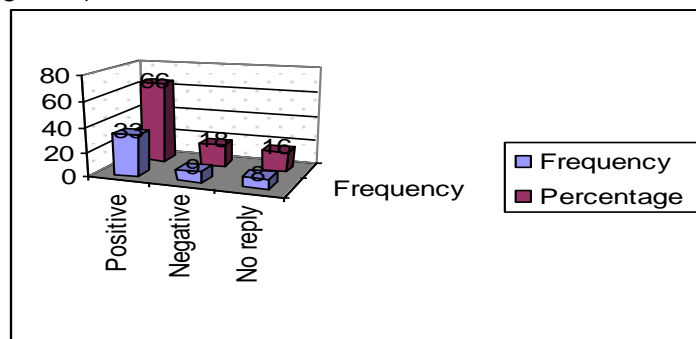


Fig. 1. Effect of Plantation on Agriculture land

⁵ A common place in village where people gather

In Salarzai valley, the plantations on marginal lands are basically raised to fulfill the domestic requirements of concerned communities but they also benefited from sale of trees. The table 1 shows the income received from sale of broad leaved tree especially Eucalyptus of five plantations in study area. Eucalyptus trees were harvested after every 5-years and the amount was distributed on already known shares. Only the owners remained entitled for such income. The trees were sold to local contractors from where they transported to other parts of the agency. Chir species was not yet mature as it had an age of 10 to 15 years.

Table 1. Income from sale of broad leaved trees of plantations

Name site	Area (acre)	1 st harvest	2 nd harvest	3 rd harvest	Total (Rs)
Kotkai	80	100000	150,000	-	250000
Sadokai	100	80,000	120,000	140,000	340000
Sarazghai	50	2,20,000	300,000	3,20,000	8,40,000
Tabai	80	150000	20,00,00	3,10,000	6,60,000
Malkana	65	217000	3,20,000	-	5,37,000

Some of the villagers also sold fuelwood which supported their livelihood. According to data, 68% were not selling fuelwood while 32% of the respondents sold fuelwood of which 18%, 6%, 8% sold fuelwood from 200 to 400 kg, 401 to 600 kg and 601 to 800 kg per month respectively (Figure 2). Some portion of rural population was dependent on plantation for grass collection for selling purposes. According to survey, only 16% of respondents sold grasses while the remaining 84% did not practice grass selling.

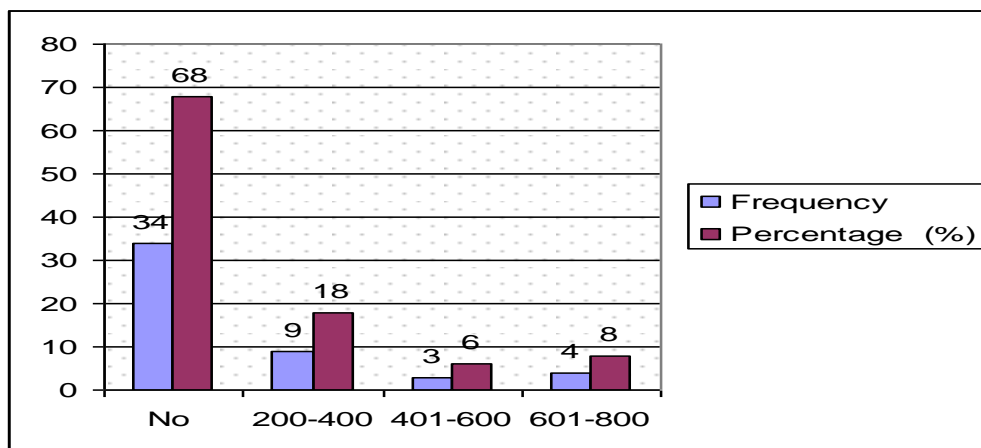


Fig. 2. Selling of Firewood by locals

The plantations are also providing employment opportunities to the villagers like daily wage labor at the time of planting of plants, watching of plantation and harvesting of plantation. The data describe that 58% of respondents were benefited at the time of various operation in plantation. The remaining 42% are not involved in any work (Figure 3).

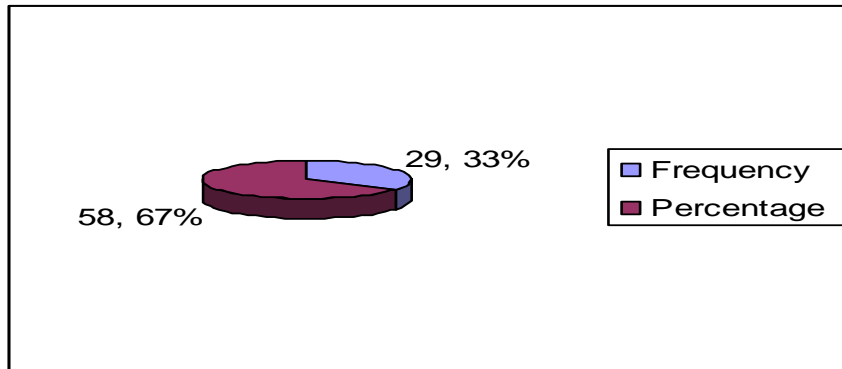


Fig.3. Employment opportunities

DISCUSSION

A meeting was held to determine the role of community plantation about the local requirements of fire wood, timber, fodder and income received by local community in Salarzai area. The purpose of the study was to make an authentic profile of socio-economic impact of community plantation to pave the way for further field research and provide for an enduring regime of corrective measures. The land holding size in Salarzai valley varies from one acre to more than 100 acres as the farmers have different ownership in various land use classes like agriculture (irrigated and Barrani), forest, waste/marginal lands, rangelands. The prime source of income of the respondents in the study area is farming and labour force. Majority of the respondents reared of different kinds of livestock and the locals of the area collect grasses and leaves of trees from plantation and crop residue from farmland which is the main sources of fodder. After plantation in the study area, fodder production increased due to stoppage of free grazing practice, change in grazing pattern like stall feeding, grass cutting from plantation. Increase of palatable grasses and availability of fodder trees like *Robinia* and *Ailanthus* species contributed to livestock health and dairy products. The consumption pattern has changed as the use of firewood is increased due to more trees in the area. People changed their fuel sources from cow dung which they previously used and now they are using firewood due to easily available, more accessible and less time consuming forest sources. Tree cover has been increased due to plantation of trees on private/communal lands and farm lands which portray positive impact on the ecological status of the area.

CONCLUSION

The community plantations play significant role in improvement of socio economic conditions of the people as these plantations have a potential to address the menace of rural poverty beside increasing the forest cover in the area. Such plantations also help in overcoming the drastic pressure on the natural resources by diverting the mind of the people from illicit cutting of tree species accepted and known as the major carbon sink. The plantations also improve the earnings and wellbeing of the local people by providing different opportunities for income from these plantations on regular basis.

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