

STUDY ON ECONOMIC BENEFITS OF EUCALYPTUS PLANTATIONS TO THE LOCAL COMMUNITIES OF DISTRICT MALAKAND

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ABSTRACT

Eucalyptus is the most widely propagated tree species throughout the world, because of its adoptability to site, types of management systems, multipurpose nature and fast growth the Eucalyptus was introduced in Sub-Continent in late 18th century for the first time. Need for conducting this study was felt to dig out the facts about Eucalyptus plantations in Malakand District after a protest of few participants organized and brought by NGOs based at Peshawar and Islamabad with Play Cards in their hands against Eucalyptus trees planted in Billion Trees Project of the KP Government. The protest organized in front of Malakand Press Club Batkhela on 31st August, 2018 got wide spread publicity in print and electronic Media. In response local members of Nazism, Councilors and Farmers assembled in front of the same Press Club within a week after the NGO function and recorded their wrath on the role of NGOs and demanded for more plantation of eucalyptus trees on their private and communal lands on the score being the best tree of high economic importance for their lively hood. Surprisingly this protest could not get the required publicity in media. It is pertinent to mention that in district Malakand Eucalyptus plantations were carried out through Malakand-Dir Social Forestry Project in 80s. All the Eucalyptus plantations carried out after proper Village Land Use Planning (VLUP) in the supervision of foreign technical advisors of that particular project. The data for this study has been collected from 56 plantations carried out on communal lands by the project on demand of local communities. The results reveal that the NGOs and media campaign is against the economy of the poor of the poor's of the society as well as wood based industry of Pakistan in general and that of Khyber Pakhtunkhwa in particular.

The study recommends organization and reorganization of the local communities and their capacity building on marketing and value chain management of eucalyptus in order to maximize economic benefits from these plantations. The study also recommends establishment of composite wood and paper industry in Malakand as plenty of raw material is available in shape of Eucalyptus trees raised in length and width of the district.

INTRODUCTION

Eucalyptus is a tree species capable to be planted throughout the world and was introduced in Indian Sub-Continent as early as 1790. Eucalyptus was given immense importance in large-scale afforestation especially in social forestry, watershed management, Irrigated plantations and agro-forestry programmers throughout Pakistan during seventies and early eighties of the

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twentieth century. *Eucalyptus* have been tried up to 2200 m. altitude with an annual rainfall range of 400-4000 mm. *Eucalyptus* can grow in a wide variety of soil conditions but best growth is observed on deep, fertile, well-drained loamy soil with adequate moisture. The need for conducting this study was felt when the NGOs organized protest of 12 participants brought from Peshawar and Islamabad who staged protest with Play Cards in their hands against Eucalyptus trees planted in Billion Trees Project. The protest was organized in front of Malakand Press Club Batkhela on 31st August, 2018 which got wide spread publicity in print and electronic Media. On the other hand more than 500 local Nazim, Councilors and Farmers assembled in front of the same Press Club on 5th September, 2018 to record their stance about eucalyptus contrary to the propaganda by NGOs and demanded for more plantation of Eucalyptus trees on their private and communal lands on the reason that it is the best tree of high economic importance for their lively hood. In district Malakand, Eucalyptus mass plantations were carried out through Malakand-Dir Social Forestry Project after formulation of proper Village Land Use Planning (VLUP) in the supervision of foreign technical advisors. Most of these plantations are commercially harvested twice and some plantations for the third time since raising in late eighties. It is also worth mentioning that all the Irrigated Plantations including Changa Manga, Kundian, Dafar and Cheecha Watani were purely meant for raising Shisham and Mulberry as 1st story and 2nd story crop respectively as per Master Plan of these Plantations in the 18th century which are later on converted in Eucalyptus plantations to fulfill the industrial and fuel wood production. Worth mentioning that Eucalyptus, despite of its brittleness and hazardous nature has already been planted along the Islamabad-Lahore Motorway against the principles of choice of specie for Avenue Plantation; much earlier than the 20 to 30% Eucalyptus planted on saline, waterlogged, barren and differed poor lands under Billion Tree Afforestation Project of the Government of KP.

OBJECTIVE

Objective of the study is to assess the financial benefits to the local communities of district Malakand from eucalyptus plantations.

LOCATION OF THE STUDY AREA

Malakand is the district of Khyber Pakhtunkhwa province of Pakistan Located at 34° 29' 59.99" N° 71 44' 59.99" E. It is bounded by River Swat separating it from Lower Dir District on the North and on the West separating it from Bajaur and Mohmand Agencies. On the East bounded by the Districts of Swat and Buner while on the South Districts of Mardan and Charsadda are situated. Total area of Malakand District is 952 square km having population of 720295 persons with 91414 Households (2017 Census report). District Malakand is comprised two Tehsils namely Swat Ranizai (Batkhela) and Sam Ranizai

(Dargai). The different land use of the District are, Forest 15.90%, Shrub and Bushes 0.92%, Range Lands 29.31%, Barren Lands 7.67%, Agriculture Land, 40.87%, River Beds 2.18%, Water Bodies 0.15%, Canals 0.09% and Settlements 2.95% (Source: ATLAS published by PFI, Peshawar).

The Forest area shown as 15.90% mostly comprising the plantations carried out under Dir. Malakand Social Forestry project in eighties of the twentieth century. The species planted were Eucalyptus, Robinia, Ailanthus, *Acacia modesta*, Chir, Iple iple and Poplar (distributed to Farmers free of cost for Agro Forestry) and Dodona. The record has revealed that commercial sale of *Eucalyptus* and Poplar as industrial wood is significant while the other broad leaved species Ailanthus, Robinia, *Acacia* spp. and Dodonia are generally used by the locals for domestic fuel wood and have no significant commercial value. The poplar is generally raised on individual farm lands and therefore very difficult to be compared with this study for the reason that no proper record has been maintained. While Conifers i.e. Chir pine etc. have not attained the commercial diameter and age and thus not marketed till now.

MATERIAL AND METHODS

The study was conducted in District Malakand and data collected in the field during December, 2016. In order to have more accurate and precise results, 56 plantation sites throughout the district were selected as sample on the basis of availability of authentic plantation year, expenditures incurred on the plantation harvesting and sale records. The Data collected from the records of office of the Divisional Forest Officer Malakand Forest Division was at Batkhela and the concerned VDCs/communities on proper proforma. Also collected data from Eucalyptus Wood purchasers/Contractors in a meeting arranged in DFO Malakand Office at Batkhela. Moghani (1978) followed to overcome various barriers mostly face in interviewing local communities in data collection from the locals.

The collected data was processed, arranged and tabulated by using simple statistical equations through MS Excel and MS Word for data analysis.

RESULTS AND DISCUSSIONS

Total area and productive area

According to the record of Divisional Office, total area planted was 19854 acres while during field survey of the planted area, productive area was found 7740 acres. The shrinkage in the area is due to failure of some areas as a result of conversion to other land uses i.e. expansion of settlements and degradation due to land ownership disputes. Area wise detail is given in table 1.

Cost of plantation

Detail of cost on planting including beating up of failures and watch & ward shows that an amount of Rs.19451090/- has been spent on raising of 19854 acres eucalyptus plantations on 56 different sites. All the expenditures have been made by Forest Department through various projects/ schemes without any expenditure by the land owner communities. The detail of Expenditures is summarized as under:

Table 1. Expenditure details about cost of plantation

| Area in acre | Planting cost (PKR) | Beating up (PKR) | W/ward (PKR) | Total (PKR) | FDF/Duty Collected by Forest Deptt; |
|--------------|---------------------|------------------|--------------|-------------|-------------------------------------|
| 19854 | 9293400 | 4672480 | 5485210 | 19451090 | 9500000 |

BENEFITS FROM THE AREAS BEFORE PLANTATION

During data collection it has been recorded that the local communities had no financial benefits from these areas before plantation except free grazing. They were even dependent on other areas for firewood. The areas were presenting disserted look prone to erosion and flooding.

Benefits from the areas during plantation

The plantation activities generated job opportunities for the local communities and generated economic activity in the shape of labour amounting Rs.19451090/- as planting expenditures of the government and earning of local communities.

Overall conditions of the areas after plantation

The barren areas have been converted to lush green forests, erosion and flood hazards decreased, grasses production and other fodders increased. Overall environment at component of the areas have been rehabilitated.

FINANCIAL BENEFITS FROM THE AREAS AFTER PLANTATION

Direct income from sale

Total Rs.242.02 million has so far been generated from harvesting of these areas in shape of cash income to the local communities which is summarized as under:

Table 2. Abstract of total income through harvesting of Eucalyptus plantations

| 1 st Harvest (PKR) | 2 nd Harvest (PKR) | 3 rd Harvest (PKR) | 4 th Harvest (PKR) | Total (PKR) |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------|
| 66344000 | 121947000 | 41357000 | 12372000 | 242020000 |

i. Labour Used in Harvesting Leading to Earning of Local Communities

There is no proper record of labour engaged in the harvesting works but as per estimates of the local commercial wood harvesting purchasers the harvesting cost is almost 15 to 20% of the total value of the commercial wood. By applying the minimum 15% as harvesting expenditures of the purchase price of the Commercial wood, an economic activity of PKR 36.30 million has been generated for the local population in shape of labour from harvesting of these plantations.

ii. Primary Purchaser and Sellers (middle man) Profit

Almost all the purchasers of eucalyptus plantations for harvesting and its further sale to the Chip Board and other industries are locals of Malakand district, therefore their profit as result of this economic activity is also a contribution to local economy and generation of entrepreneurs. They are reluctant to disclose exact profit they are earning from the harvesting however after a deliberate discussion with them they agreed to tell the profit margin in terms of percentage. They disclosed that they have a profit margin of 10 to 15% after deduction of harvesting and transportation charges including forest duty. Taken for granted, the minimum as 10%, the profit margin of their total spending on purchase and harvesting i.e. of 242 million and 36.30 million excluding the expenditures of Forest Duty and FDF the profit touches the figure of Rs.27.832 million.

Total income of the local population from these 56 plantation areas and share in local economy

The economic activity generated for earning of the local communities from these 56 eucalyptus plantations raised under Dir Malakand Social Forestry

Project since late eighties is Rs.326.529 million of cash flow tabulated as under:

| Plantation labour (PKR) | Sale of the plantation (PKR) | Harvesting labour (PKR) | Purchaser profit (PKR) | Other uses sale of (grasses) (PKR) | Total (PKR) |
|-------------------------|------------------------------|-------------------------|------------------------|------------------------------------|-------------|
| 19,451,090 | 242,020,000 | 36,303,000 | 72,832,000 | 923,000 | 326,529,000 |

Economic activity generated as consequent of utilization of wood obtained from these 56 plantations

The net purchase price of the eucalyptus wood of 56 plantations at the entry gate of industry/user come out as Rs.306.155 million after deduction of the plantation cast spent by the project/government.

During meeting the purchasers of these plantations identified the main uses of eucalyptus in various sector in the descending order:- Composite Wood Industry 20%, Fuel wood for Tobacco Industries 20%, Fuel wood for Gee and Steel Mills etc., 20%, Domestic fire wood 15%, Construction 10%, Furniture industry 10% and Boat industry, Mining industry, etc, 5%. Eucalyptus wood is the most demanded raw material of the composite wood, Tobacco and Ghee Industries and almost 60% is utilized by these three sectors. They also revealed that its demand as pit prop in mining industry is increasing while its use in Boats manufacturing is also on rise as it has shown better results and is cheaper compared to deodar and other woods used in boats. They also pointed out its utilization as fire wood for the domestic purposes and its use in furniture and construction industries with rising trend day by day. Its price calculated in para 1 above is Rs.306.155 million.

Thumb rule for cost effective raw material for industrial, processing of an efficient industry require 30% raw material cost 20% Labour 10 Energy cost, 10% factory recurring cost 15% Government Taxes and 15% is required at the minimum as safe and secured profit of the industry owners. Therefore value added price of the wood having price at the entry gate Rs.306.155 million on processing attain the value addition of Rs.1168.4 million. Thus the net economic value of the final good at the exit gate of the industry is amounting Rs.1,020.516 million, resulting of saving of same amount of foreign exchange of Pakistan as consequent of imported foreign wood products.

Forest Development Fund collected by Forest Department

DFO Malakand has collect Rs.7.5 million in the shape of Forest Development Fund FDF while issuing transport pass TP for transportation of Wood obtained from these plantations.

CONCLUSIONS

- a) Eucalyptus is a main income generating cash crop for the local communities of district Malakand.
- b) Eucalyptus proved as a low cost less labor and water demanding highly profitable cash crop for the local communities.
- c) Eucalyptus has changed the nonproductive barren lands and hills into most productive green gold resources.
- d) The study also shows that eucalyptus is a major raw material for composite wood industry and the role against Eucalyptus is blocking economic and industrial development of Pakistan.
- e) The study reflects that eucalyptus is the main source of domestic fire wood.
- f) Eucalyptus is introduced in Pakistan particularly in irrigated plantations and Road Side Avenue Plantations in Sindh and Punjab much earlier than its introduction in KP in late eighties.
- g) Any campaign against Eucalyptus will result elimination of the economy of poor of the poor's of the society as well as wood based industry of Pakistan in general and that of Khyber Pakhtunkhwa in particular.

RECOMMENDATIONS

- a) Focus on organization and reorganization of the village communities is required to enhance the productivity of the plantation areas both in terms of extent as well as in production of the crop.
- b) Capacity building of the communities is required on marketing and Value chain management.
- c) Establishment of Composite Wood and Paper industries in the area is required, as plenty of raw material is available. It will not only enhance income from the eucalyptus plantations but will also create job opportunities in the area.

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