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A Feasibility Study on Oleo-resin Based Turpentine Oil Industry in Bhimeshwor Municipality of Dolakha District

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ABSTRACT

This research article explores the oleo-resin collection capacity for oleo-resin based turpentine industry in Bhimeshwor Municipality of Dolakha district. This paper reviews the early evaluation of bio-fuel sector from trees in the world and Nepal to extend the role of pine trees in rural development. The analysis draw on the following: stakeholders interviews; group discussion; focus group discussion and publish and unpublished documents. Finding suggests that there is possible to establish oleo-resin based turpentine oil production industry because people cannot collect 300000 kg oleo-resin from 14 pine community forests in a year.

KEY WORDS: Dolakha, industry, oleo-resin, pine, forest

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INTRODUCTION

Energy and income are inseparable from development activities. They are needed for in the field of transportation, communication, health, education and industrial sectors. Due to this cause, they are taken as an important indicator of development. So all families and countries try to increase income and energy consumption rate in the world. But energy is supplied by import mechanism in Nepal. Next, energy consumption rate of Nepal is increasing due to the rapid population growth, industrialization and modernization. As a result, energy shortage problem is existing frequently. On the other hand, energy price is increased by energy supplier every year. According to annual report of Nepal Rastra Bank, "the country Nepal import petroleum product of Rs 53.43 million last year. It is an increment of 12.39 % of past year."[1] It adds economic burden for the people. But petroleum product is not renewable source. It will be finished in the future. Thus, many researchers researched on bio-fuel plants. On the way, researchers found pine is the one of the reliable source of bio-energy. So different scholars and institutions research on different aspects. Some of their views are reviewed here.

According to university of Georgia "pine trees are the fasted growing trees in the south American, making then a reading available and renewable resource. The wood is also loaded with sugars that the yeast uses in the fermenting process."[2] It is also fasted growing trees in Nepal not only in American and it is also source of renewable bio-fuel energy in Nepal. But, it is not used commercially in Nepal.

According to Jeffery Dean, professor of biotechnology in the University of Georgia Warnell School of forestry and natural resources "Globally pine is the primary target for this research project because of. its current commercial importance in the south state of united state as its potential for providing biomass to futures bio-fuels market."[3] But pine trees are not use commercially in Nepal. They use pine trees only for wood of furniture, lighting and cooking some of community forest collect oleo-resin to sell the turpentine factories when the people establish oleo-resin based turpentine industry in different areas. After that only local people may know the importance of pine trees in Nepal.

According to Mellon university scholars "pine trees are one of the biggest contributor of air pollution deduction because pine gases chemically transformed by free radicals."[4] Similarly Jenkin said that if the "people stop growing pine trees in the pasture land that change may affect soil health, regional greenhouse gas admission and one all profitability of the form enterprise."[5] This statement clears that

environmental and economical importance of pine but, pine trees are not given priority in Nepal. People are not interested plant the pine trees for environment conversation and bio-fuel in Nepal.

Many scholars claim that pine is the source of bio-fuel. But major concern is that how can we get bio-fuel from pine trees oil has need certain process first we tapped the pine trees for oleo-resin collection but tapping process are different according to Jackson, “there are five types of tapping menthols. These are cup and lip method, Silva hill Basula method, Bark chipped method, Rill method and Bore hole method. Among of these, Rill method is practiced in Nepal. Because the Rill method of tapping has considered a more economical than others method.”[6] But this method is not used systematically in Nepal. "Due to this cause 2% of pine trees from which resin is extracted are dying."[7] So, people have bad experience about the tapping and storing process of oleo-resin.

Jackson claimed that “about 10,000 people are involving in the resin tapping work. The Resin tapping activities would provide regular supervision of forest which control the activities like illicit, felling, forest fire poaching, illegal collection of NTFPS collection of diyalo.”[8] But this work is not applicable effectively in Nepal. Because resin tapping workers are not local people. They are hair by industry from different parts of country so it needs to mobilize local people.

Cesar says “by processing in the distillation methods in the plant resin gives two main products that are rosin and turpentine. In normal condition pine oleo-resin processing gives 76% rosin and 18% turpentine.”[9] But in context of Nepal, rural people are not familiar about the oleo-pine resin processing and application.

Further Ceres says,

> Rosen is the major product obtained from pine it is in volatile residue it is brittle transparent glass solid insoluble in water but soluble in a number of organic solvents. Most resin is used in chemically modified from rather than the row state in which it is obtained. It consists primarily of maximum mixture of biotic and primate types of acids with smaller amount of neutral compounds. It can be converted to a large numbers of downstream derivatives that are used wide range of application ,synthetic, rubber paint, foodstuff adhesive ,printing oil, electrical equipment , paper making ,soap, construction, materials, linoleum and floor covering metal processing, Bactericide , pine chemical, plastic oils and greases printing inks, shoe polish and seated materials.[10]

Nepal most of people do not know about it. They used unprocessed resin as a plaster for bone fracture, joining pot and heel crack.

Sushil Adhikari claims "utilizing one of the states as the most valuable and widespread commodities pine trees to produce liquid fuels such as Gasoline and diesel. It is only one practice in Nepal."[11] But it is does not get continuity. If we give continuity it creates job opportunity in rural area.

It is also discussed as “for two years research grew the yeast, altering, it just enough to produce the maximum amount of ethanol as possible from pine trees. Culturing the yeast in increasing in hospitable environment. The researchers were able to form a strand that services when placed on pine with a high biomass percentage, which could typically stress the yeast.”[12] In my view if the local people establish oleo-resin based turpenture industry. They can produce ethanol which is used instead of kerosene oil and diesel in rural area in Nepal. But is not practice practically in Nepal till now.

According to Gimire, “pine trees improve soil drainage in Nepal.”[13] It does not improve only not central Nepal. Pine forests are there, in many parts of Nepal. Less or more they helps to improve soil irrosen and soil drainage.

Forest research Institute, Deharadun, India explains "the social economical advantage of oleo-resin tapping in Nepal. They are as follows. 1) Create employment, Enhancement of business and other industries, revenue for government income of community forest user group and source of foreign currency." [14] These oleo-resin processing industry has created whole new social and political movement that geared to making the Nepal, totally import free energy.

However, the pine forest are almost continuously spread the south and south east part of the Dolakha district.

is 14 dense pine community forests. They cover around the 40% total land of the forest area in Dolakha district. Community forests have supplying 16550 kg oleo-resign annually from Dolakha district. But total pines there are not tapped by user groups. On the others hand community forest user groups supply 1, 09140 qubic feet wood from different species pine trees and they deposit that money at co-operatives, banks and some money is given debt for members of user groups.[15] But researches do not keep attention on feasibility study of oleo-resign based turpentine industry in Dolakha district till now. So my quotation is this, why researches do not keep attention on a feasibility study of oleo-resin based

turpentine oil production industry in Dolakha district and why do they only explore about types of tapping, commercial application of ole- resin as well as environment aspect. Thus, this research article tries to fulfill this research question's answer.

METHODOLOGY

This study mainly based on "A feasibility study of oleo-Resin Based Turpentine Oil production industry in Bhimenshwor Municipality of Dolakha district has descriptive, analysis tic and observational in nature. For this study, samples were randomly selected 158 households from 790 total .(

Data collection is based on both primary and secondary. Primary data were collected by using discussion, focus group discussion, interview, field survey and field observation methods with the help of the structured questionnaires. Above methods were carried out to get data which were need to find out the quantity of oleo-resin and to work out the economics venture in Bhimeshwor Municipality in Dolakha district.

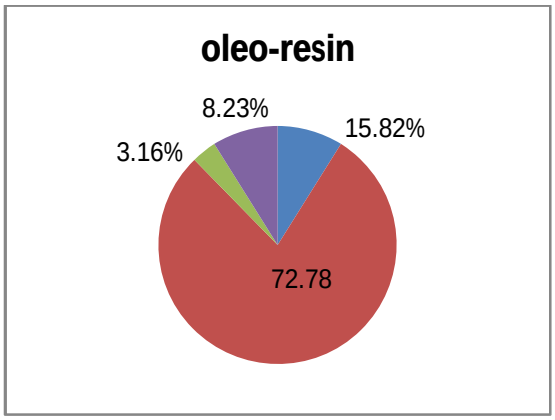
The secondary data were collected from CBS, CES, Department of forest ministry, FAO, ministry of forest and soil conservation Babar Mahal Kathmandu, Nepal Soil Corporation, DFO office Dolakha pine community forest office records etc.

A Master table was prepared on based of structured questionnaire for tabulation. Charts are related with the quantity of oleo-resin and oleo-resin based turpentine industry. Data were processed with the help of scientific calculator and computer.

DATA ANALYSIS AND PRESENTATION

Pine forests are spread between 700 to 17 meters above the sea level in Dolakha district. Most of forests are specially spread south east and west parts of Dolakha district. There are 14 dense pine community forests and others are mixed with different types of trees. For this study, samples were randomly taken 158 household from 790 who live in Bhimeswor Municipality ward No. 1. Those are from different caste, ethnicity, age groups, genders, profession and religions. Thus, they are presented here for analysis.

1) Respondents of Ole-resin Collection Capacity.

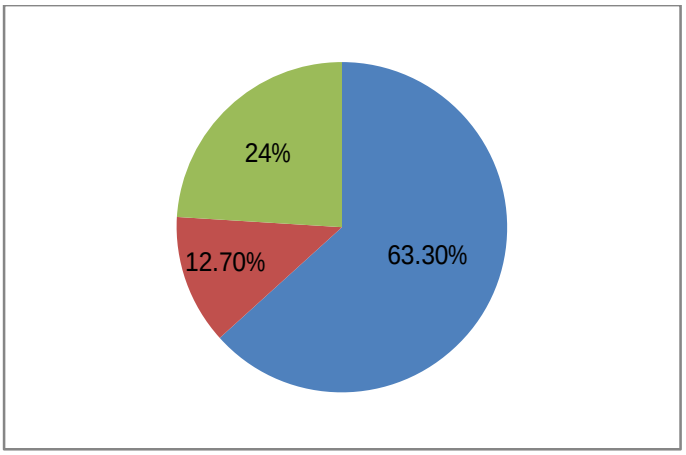


Source- field survey 2013

Chart 1: Quantity of ole-resign.

2) Possibility of Oleo-Resin Based Turpentine Production Industry.

The following chart shows the respondents for oleo resin based turpentine production industry in Bhimeswor Municipality of Dolakha district.



Source: field Survey 2013

Chart 2: Possibility of Oleo-resin Based Production Industry Distribution of Respondents.

Above chart -2 indicates hundred households (63.3.%) of respondents said there is possible to establish oleo- resin based turpentine production industry followed by thirty eight households (24%) answered there is possible but it is difficult to run in a whole year . so it needs to plant new pine trees and twenty households (12.70%) said it is impossible work in Dolakha district.

CONCLUSION

The pine forest are almost continually spread the middle and low parts of Dolakha district. Especially south east part and south part of the Dolakha district. It is very fertile land for pine trees. There is found different species of pine trees. Around 40% land is cored by pine forests. It is main income source of community forest because community forest user groups sell 109,140 qubic feet pine wood every year. Next, they have been selling 16,559 kg oleo-resin to the oleo-resin based turpentine industry. Similarly, here is possible to plant new pine trees in pasture land in the distrct. They deposit that money at the different co- operatives banks and some is given to poor people for debt. On the hand, they have lunched different types of programs for local people who live in around community forests. Only some pine community forests started tapping for storing the ole-resin. The tapping and storing system are not systematic and scientific. Due to that cause some people have bad experience about the ole-resin collection. However there is possible to collect 300000 kg ole-resin from 14 pine community forests. Thus ole-resin based turpentine industry should be possible to establish in Bhimeswor Municipality in Dolakha district. If the government encourages establish oleo-resin based turpentine industry in that place. It will uplift local people income as well as social status in Dolakha District. Next, it replaces the imported kerosene oil in the district as well as it creates job opportunity for local people.

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