

Revenue Enhancement Measures in Resin Extraction Process in Uttarakhand



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Coimbatore

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2024

PREFACE

As a trainee forest officer, it has been both enlightening and concerning to delve into the intricacies of resin extraction processes in the lush forests of Uttarakhand. This book, "Revenue Enhancement in Resin Extraction Process in Uttarakhand," is a culmination of my observations, experiences, and learnings during my tenure in the Nainital Forest Division.

The resin extraction process, which forms a vital part of forest revenue generation, is not without its challenges. Through this book, I aim to shed light on the existing shortcomings and offer insights into potential avenues for improvement. It is my sincere hope that this work serves as a reference guide for my esteemed colleagues within the forest department of Uttarakhand, particularly those involved in resin extraction divisions.

The data and facts presented within these pages are not mere theoretical constructs but are rooted in real-life scenarios witnessed during my on-the-job training. Every observation, every analysis, and every recommendation stems from first hand experiences garnered during my time in the forests of Uttarakhand.

It is my fervent belief that by addressing the challenges and embracing the opportunities in resin extraction processes, we can not only enhance revenue generation but also ensure the sustainable management of our forest resources for generations to come.

May this book serve as a catalyst for positive change and contribute towards the greater good of our forests and communities.

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FOREWORD

It is with great pleasure and anticipation that I introduce "Revenue Enhancement Measures in Resin Extraction Process in Uttarakhand" authored by Ganesh Datt Joshi. This comprehensive guide serves as an invaluable resource for forest officials engaged in resin extraction across the forest divisions of Uttarakhand.

Resin extraction has long been a vital economic activity in Uttarakhand, contributing significantly to both local livelihoods and the state's revenue. However, despite its importance, the resin extraction process has faced numerous challenges and inefficiencies, leading to potential revenue losses for the state.

In this meticulously researched document, Ganesh Datt Joshi sheds light on the various lacunas present within the resin extraction system in Uttarakhand. Drawing upon his short experience in forest management, he identifies key areas where revenue enhancement measures can be implemented to rectify these inefficiencies.

Through a detailed analysis of relevant Acts and rules governing resin extraction in Uttarakhand, he presents practical recommendations and actionable insights aimed at streamlining the resin extraction process. By addressing issues such as delayed tendering processes, illegal transportation, and storage concerns, he outlines a roadmap towards substantial revenue enhancement for the state.

This document not only serves as a reference guide for forest officials but also as a call to action for stakeholders involved in resin extraction in Uttarakhand. It is my sincere belief that the implementation of the measures outlined in this document will not only optimize revenue generation but also contribute to the sustainable management of Uttarakhand's forest resources.

I commend Ganesh Datt Joshi for his dedication and commitment to improving the resin extraction process in Uttarakhand. I am confident that this document will serve as a catalyst for positive change and foster greater efficiency and transparency in resin extraction operations across the state.

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ACKNOWLEDGEMENT

With great regards, I would like to express my gratitude to our Principal CASFOS Coimbatore, Shri V.Thirunavukarasu, IFS for triggering the interest and providing the necessary platform to come up with this publication.

I extend my sincere thanks to respected Course Director, SFS Batch 2022-24 (I), Shri Anisha Kalkoor, IFS for his guidance, persistent encouragement and valuable inputs throughout the compilation of this work.

My sincere gratitude to the esteemed faculty member- Dr. K. Anandh, IFS, Dr. V. S. Senthil, IFS, Dr. C. Vidhyasagar, IFS and Shri V Karthik, IFS for their technical guidance and the mentorship they have provided.

I extend my heartfelt gratitude to all those who have contributed to the fruition of this book, "Revenue Enhancement in Resin Extraction Process in Uttarakhand." Without their unwavering support and invaluable assistance, this endeavour would not have been possible.

I express my deepest appreciation to Forest Range Officer Sh. Yogesh Tiwari, who has been instrumental in providing assistance during the collection of data for this book. His expertise and dedication to the resin extraction process have been invaluable.

I am also indebted to Sh. Deep Chandra Pandey, Dy Ranger at the Resin Depot in Sultanpuri, Haldwani, and Sh. Mahendra Singh Rawat, Senior Assistant in the Resin

Section at Nainital Forest Division. Their cooperation and insights have greatly enriched the content of this book.

I extend my sincere thanks to all the members of the forest department of Nainital Forest Division who have generously shared their knowledge and experiences during my on-the-job training. Your support has been invaluable in shaping the content of this book.

I am profoundly grateful to Sh. Chandra Shekhar Joshi, DCO, Divisional Forest Officer, Nainital Forest Division, for providing me with the opportunity to work on this important matter. His guidance, support and encouragement have been a constant source of motivation.

I am especially grateful to Shri K. Muniasamy, PT&GI for his valuable time and inputs related to the layout and design of this publication.

Lastly, I would like to express my grateful thanks to my fellow Officer Trainees of SFS Batch 2022-24 (I), where special mention must be made of my colleague officer trainee (ACFs) of SFS Batch 2022-24 (I) , Sh. Janmjay Chand Ramola, Sh Gaurav Kumar Pant, Sh Ajay Lingwal and Dr. Diwakar Pant, for their assistance and encouragement throughout the compilation process.

- Ganesh Datt Joshi

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CHAPTER 1 : INTRODUCTION

The resin extraction process is very important to maintain the sustainability of the forest, revenue generation for the department/ van panchayats and land owners of the revenue land on which resin extraction work is undertaken and creation of employment for the local community. Effectiveness, transparency and fairness at each level of the chain and strict compliance to various rules and regulations in this regard would help in checking the illegal activities at various stages and would help in creation more revenue for the state. The importance of robust monitoring and enforcement mechanisms to curb such practices doesn't need emphasis. For effective control of such incidents regular inspection and verification at various level is mandatory. It would help in better health of the forest trees, higher quantity of resin extraction, lower losses due to leakage at various depots and realisation of the revenue at the earliest opportunity.

Resin tapping has been a traditional practice in the region, contributing significantly to the local economy. The literature review encompasses the historical significance of resin tapping in Uttarakhand and the evolution of resin management practices. It also explores the environmental impact of resin extraction and the need for sustainable and regulated processes. The Resin Tapping Rules of Uttarakhand, inherited from the erstwhile Uttar Pradesh, serve as a legal framework guiding the extraction and auctioning of resin.

Pinus roxburghii (Chir Pine) belonging to family Pinaceae, is native to the tropical forests of Uttarakhand which is being commercially tapped for oleoresin in India. Resin industry, which use oleoresin as a raw material is one of the foremost industry thriving on this product and has got an ever increasing importance in our national economy. *Resin extraction process is the major revenue generation activity in all the forest divisions of Hill area in Kumaon and Garhwal mandal.*

The pine species and the geographic location not only influences resin yield but also determines the resin composition. Resin is a complex mixture of turpentine (volatile fraction, mainly composed by mono and sesquiterpenes), and rosin (non-volatile fraction, mainly composed by diterpenes or resin acids). Resin differs from oleoresin in that it is comparatively fluid with a higher proportion of volatile and non-volatile terpenes.

Resin tapping is one of the most important activities of the Forest Department as Uttarakhand has substantial area under Chir pine which exudes resin. Resin extraction not only earns revenue for the State, it also provides employment to a large number of people in the hills. Some facts about resin production are listed below.

The activities of resin tapping, resin collection, transportation, and resin auction in the Forest Divisions of hill regions of Uttarakhand stands as a commendable model of sustainable forest management. The structured approach outlined in the Working Plan Document and Resin Tapping Rules of Uttarakhand ensures accountability, transparency, and fair economic returns. The success of this process is evident in the continued economic viability of resin extraction and the preservation of the region's biodiversity.

There is not much literature available in the public domain regarding resin extraction process. Following literature available within the department referred during compilation of this book:-

- (I) Working Plan Document for Nainital Forest Division for 2019-20 to 2028-29
- (ii) The U.P. Resin and other Forest Produce (Regulation of Trade) Act-1976 resin auction rules of UP or Uttarakhand
- (iii) The U.P. Resin and other Forest Produce (Regulation of Trade) Rules- 1976
- (iv) Forest & Environment Section-2 of Uttarakhand Sachiwalaya letter No. 756/1(2) FVV / 2003-9(2) dated 30 April 2003.
- (v) Resin Auction Notice of Nainital Forest Division dated 29-09-2023.
- (vi) Nainital Forest Division Work Order issued for 2022 for extraction and transportation of resin through Resin mates.

For data collection for compiling this book, dedicated visits are made to following places and discussion were held with the concerned officials :-

- (I) Resin Section at Nainital Forest Division Office at Nainital
- (ii) Reserve forest of Bhowali, North Gaula and Kosi ranges.
- (iii) Resin auctioning venues

- (iv) Check Posts at Bhowali and Ranibaugh under Nainital Forest Division.
- (v) Hanuman Garhi and Sultan Puri Resin Depots at Haldwani

The objectives of this book is to highlight the deviations observed in the resin extraction process. Quantify the amount of Resin or revenue loss due to these violations and to find out the exact revenue loss in these processes . Few recommendations are suggested to enhance the expected revenue generation.

CHAPTER 2 : SURVEY OF COUPES, IDENTIFYING / MARKING OF TREES AND ESTIMATION OF RESIN QUANTITY

At an interval of every five years, the permissible volumes of each compartment/sub-compartment selected for exploitation will be calculated. Generally this work will start from November and will be completed by 15th December. At the time of counting on exploitable trees, the serial number of the tree will be marked at room height level by flattening the outer thick peel and marking it at a place where it is not necessary to scratch it further to make a blaze. Compartment/sub-compartment wise records of enumeration will be kept in the range office in the prescribed form. The work of counting the blazes will be completed under the supervision of Forest Guard/Forest Inspector, Deputy Forest Ranger and the Forest Ranger Officer will regularly inspect it. In any case, the work of counting Resin Blazes should be completed by the end of December.

A summarised timeline for these activities is mentioned below:-

S.No.	Description of tasks	Work Completion period
1	Inspection of forests and selection of areas suitable for resin extraction.	By the end of July in the year preceding the collection year
2	Counting of Resin wound	Till the month of August in the year preceding the year of dissolution
3	Information about remains of equipment, empty tins, etc. to be sent by the Range Officer to the Divisional Forest Officer.	till 15 September
4	Divisional Forest Officer to send 'all in cost' to the Forest Conservator for approval	till 15 September
5	Selection of resin mates v resin extraction and transportation	till 30 September
6	Issuing work orders to resin mates.	till 31 st December
7	Coupe inspection by Resin Mates and workers	till 15 January
8	Pre-hammering (peeling the bark, making blaze and marking the center groove)	till 15 th February
9	Hammering (cutting the middle groove and inserting the leaf)	till the end of February

S.No.	Description of tasks	Work Completion period
10	Transportation of empty tins from Motor Road Depot to Jungle Depot	till the end of February
11	First peeling (making the first reel)	till 15 March
12	Resin extraction	April to 31 st October
13	Transportation of tins filled with tins from Jungle Depot to Motor road Depot.	This work will be done along with Resin collection. Completion of work till 30 th November
14	Transportation from Motor Road Depot to Rail Head Depot	Along with progress of work will go. Completed by 31 st January.

Identification and marking of trees are done as per working plan prescription. However, trees which are heavily tapped in previous plans, such trees are skipped for marking in the current year. In a compartment minimum 500 and maximum 5000 wounds can be made as per the area of the compartment. Pine trees whose diameter is 40 cm or more can be selected for collecting resin. Selection of trees for Resin collection in extremely cold areas, steep slopes and rocky areas should not be done. During the period of the generally, the target of resin in reserved forests is fixed at 4.00 quintal per 100 resin wounds.

CHAPTER 3 : FINALISING ALL IN COST, SELECTION OF RESIN MATES AND ALLOCATION OF COUPES

Resin registered will be done only through the currently prevalent Contractor (called Mates) method. According to the procedure prescribed by the Government Order No. 19772/14-2-505/78 dated 28.11.1978 (Appendix-9.4) of Forest Section-2 of Uttar Pradesh Government, the allocation of resin coupes will be done to efficient resin contractors (mates). Details of the action to be taken before allotment of contract are being given in the subsequent paragraphs.

All in cost:- Detailed 'All in cost' details for the next Resin crop are given below.

- (i) Expenditure per quintal on pre-scraping and threshing.
- (ii) Expenditure per quintal on transportation of empty tins from rail head depot to motor road depot.
- (iii) Transportation of empty tins from motor road depot to jungle depot
- (iv) Expenditure per quintal on Extraction of resin
- (v) Expenditure per quintal on transportation of resin filled tins to the motor road depot.

- (vi) Expenditure per quintal on purchase of various items like empty tins, pots, leaves, nails, chisels, hammers, basulas, ranga, nausadar etc.
- (vii) Expenditure per quintal on packing
- (viii) Expenditure per quintal on establishment
- (ix) Expenditure per quintal on construction of new depots, repair and maintenance of old depots.

In this way, all in cost should be prepared and it should be in the shortest possible time approved by the concerned forest conservator.

For Determination of Resin collection rate, following points will be kept in mind:-

1. Rates will be higher for coupes with adverse conditions (considering orientation, slope, altitude, sparseness of crop etc.).
2. Rates should be kept higher for inaccessible areas. For those areas where labour is easily available, the rate will be kept relatively low.
3. While determining the rate, special care will be taken that after working for eight months, the annual average income of the worker should not be less than the current local employment rates.

Allocation of coupes:-

1. 'All in cost' will be approved by the Conservator of forest.

2. After the 'all in cost' is approved, the list of resin mates will be made by a selection committee constituted by the Conservator of forest.

Exploitation and weeding work will be allocated.

3. The selection committee meeting must be held by the month of November.
4. Normally a mate will not be given more than one coupe. If a good and efficient mate is available, he can be given more than one coupe.

Supply of tins:- At present, old tins are cleaned and used for collecting resin. Use of porous, rusted and dirty tins is prohibited. Empty tins are kept in humid rooms to protect them from rust and breakage. The tins should be thoroughly inspected and passed before being brought to the warehouse. Sending more tins to the jungle depot than the inflow leads to more breakage in the tins. At the end of the extraction work, collecting the remaining tins back provides enough help in the safety and records of the tins. To achieve continuous resin supply, it is mandatory to execute resin extraction work in a time bound manner.

CHAPTER 4

RESIN EXTRACTION AT FIELD

Resin extraction is done by 'Rill' method. In rill method, 30 cm wide blazes will be made in the first year on the marked trees. In one Resin season, the height of Blaze will usually be 35 to 38 cm. Blazes will be built on top of this for the next four years. In the sixth year, like the blazes of the first year, new blazes will be made at a horizontal distance of 6 cm. In this way, four vertical blazes will be formed in 20 years. Due to the increase in the diameter of the tree in 20 years, in the 21st year, enough space will be created between the blaze of the first and the 16th year in which a new blaze can be formed and on which work can be done again for five years. In this way, in 25 years, the Resin extraction work will be completed by making a blaze around the tree. The total number of rills in the 8 months from March 1 to October 31 is 32.

5th Year	10th Year	15th Year	20th Year
4th Year	9th Year	14th Year	19th Year
3rd Year	8th Year	13th Year	18th Year
2nd Year	7th Year	12th Year	17th Year
1 st Year	6th Year	11th Year	16th Year

The rill method is the latest method of resin harvesting which has been recommended by the Forest Research Institute, Dehradun. At present, Resin harvesting is being done successfully using this method in various states like Uttarakhand, Jammu-Kashmir, Himachal Pradesh and Arunachal Pradesh. Using the rill method, it is possible to obtain relatively large amounts of sap by making only 2 to 3 mm deep wounds in the pine trunk. *Pinus roxburghii* trees with more than 40 cm diameter only are selected for resin extraction.

Research in this regard has proved that by using several chemical stimulants at the time of rill cutting, the production of Resin can be increased significantly without damaging the trees and without changing the properties of the Resin. Among the chemical stimulants, 20 percent mixture of sulphur and hydrochloric acid is a simple and acceptable stimulant for the collection of Resin by Rill method.

The maximum amount of Resin comes out in the first day of wound scraping, and thereafter every day there is a gradual decrease in the quantity released. When the viscosity of the acid is high, the inflow of Resin reduces. Effect of tree diameter on Resin production: Studies have found that trees with a diameter of 37.5 to 47.5 cm produce the most Resin.

Following factual points should be kept in mind for increasing resin production:-

- (I) The highest amount of Resin is in the roots. Less quantity than this in the column and minimum amount of Resin is near the branches.

- (ii) Large amount of Resin is secreted:- In hot climate rather than cold climate, in the hot direction rather than the cold direction, in dry and hot soil as compared to moist places, in open forest as compared to crowded forest, in loose and sandy soil as compared to hard and cold soil and on hilly or sloping land rather than flat land.
- (iii) Normal or moderate storage promotes increase in diameter of the bole and expansion of the canopy.

The targets for progress of resin production in a season (of 08 months) is specified as follows: -

S.No.	Months	Target
1	Starting from March to the end of April	5%
2	By the end of May	15%
3	By the end of June	40%
4	By the end of July	55%
5	By the end of August	70%
6	By the end of September	85%
7	By the end of October	100%

Various stages of Resin collection by Rill method:- The sequential description of the work to be done for Resin collection by this method is as follows:-

1. **Counting of trees:-** Pine trees whose diameter is 40 cm or more can be selected for collecting sap. Selection of trees for Resin collection in extremely cold areas, steep slopes and rocky areas should not be done.

2. The grass and weeds should be regularly cleared within a radius of 1.25 meters of the selected trees so that there is no damage in case of fire.
2. **Bark peeling:** - In the month of February, bark of 45 cm X 45 cm area is peeled evenly 15 cm above the ground level with a bark peeling tool (bark shaver). The peeled material should be even and smooth so that the blaze frame can be placed properly. Such a surface appears red in colour.
3. **Marking the blaze and groove:-** After peeling the bark, the blaze frame should be kept in a vertical position 15 cm above the ground surface and marks should be made all around with a marking gauge. The position of the middle groove should be marked with the help of a wooden board and marking gauge.
4. **Central groove cutting:-** By running the central groove cutter from top to bottom, a 4 mm deep and 7-9 mm wide central groove is made.
5. **Lip and Pot fixing:-**With the help of two nails (horseshoe nails), the leaf should be fixed to the tree in such a way that there is no empty space between the stem and the leaf, otherwise the cone will not pass through the leaf and fall into the ground. Exactly 2 cm below the middle of the lip, a 5 cm long nail should be driven at an upward angle so that the pot can be hung.
6. **Making rills :-** To make a rill, the collector should stand on one side of the blaze near the tree and hold the knife at the lowest point of the middle groove. After this the knife should be drawn along the blaze line on

the tree. Similar action should be taken on the other side of the central groove.

With the help of the guide fitted in the freshening knife, the second and subsequent freshening should be done at an interval of one week. Care should be taken that the guide of the freshening knife should run over the rill made earlier. In this way it can be ensured that the reels are correct and parallel to each other.

It should also be ensured that the rill neither goes beyond the limits of the blaze mark nor remains shorter than its limits. Placing the guide in the correct position in the pre-made rill will automatically ensure that the distance between two consecutive reels is equal.

The average width of the bark between two consecutive rills should be 5 mm and the average width of the rill should also be 5 to 6 mm. In the collection season the height of the blaze reaches 34 to 36 cm.

The depth of the rill (inside the wood) is 2 mm, which is sufficient to open the closed Resin vessels.

7. **Treatment of blaze with acid:-** The mixture of sulfuric acid and nitric acid as an inducing chemical does not help in the formation of Resin in any way in blaze treatment, but it only keeps the Resin vessels open so that the flow of Resin continues smoothly for a long time.

Acid treatment is done immediately after frenzying. The pot should be taken out before each freshening. For this, acid should be sprayed on the freshly cut rind by pressing the plastic spray bottle. While spraying acid, the

nozzle of the spray bottle should be moved slowly in the direction of the rill. Spraying can be done easily and effectively by keeping the spray bottle at an angle of 45 to the tree trunk and keeping the nozzle 3 to 5 cm away from the rill. The acid should come out from the bottle in the form of a spray (mist).

After all the acid has fallen down from the leaf, the pot should be hung with a nail. If it is not done, acid will get mixed in the Resin and due to this, there is a risk of quick spoilage of the pots, tins and spoilage of the Resin as well.

8. **Cleaning of Resin storage central groove:-** Resin collection work is done every week at the time of rill cutting. Before making the rill, the pot is removed and the collected resin is poured into a bucket and the stuck resin is scraped out with a wooden spoon. At the same time, the middle groove is also cleaned.

This is done, and the resin stuck to it are scraped off. Between April and July, the flow of resin is high and the pot can be filled with resin even before the week is over. In such a situation, the pots should be removed before resin flow out of the pot.

It can be collected, but the work of freshening (making rill) will be done only at an interval of one week. The collected resin is brought to the jungle depot by the collection workers.

Description of equipment required for resin collection by Rill method (for one RESIN collector)

Bark shaver
Blaze frame
Comb/Marking gauge
Central groove cutter
Scraper Knife
lip/leaf
Jamura
spray bottle
Freshening knife
Sharpening stone
Horse shoe nail (2 cm long)
nail (5 cm long)
Woden hammer
Canister
Measuring Cylinder (500 ml)
Measuring Cylinder (50 ml)
Beaker (1000 ml)
Funnel
Plastic can or glass vessel (10 litres)
Commercial Sulfuric Acid
commercial nitric acid

Features of Resin collection by Rill method:-

1. Only a 2 mm deep wound is made in the living skin and sapwood of pine trees, in which the possibility of damage to these trees is very less. Due to this, the damage to hardwood is reduced and as a result, damage to wood is avoided.

2. Less deep wounds take less time to heal due to which sap can be collected from trees in the second cycle. By doing this the sap storage life of the pine tree is increased.
3. In this, a mixture of 20 percent acid is used as a chemical catalyst, due to which the resin flows for a longer period and the collection season increases, as a result the production of resin increases and due to this, the resin collectors get sufficient amount in the year. In this method, no garbage gets mixed in the resin and the loss of turpentine is negligible.

Method of making acid : First, 100 percentage solutions of commercial nitric acid (HNO_3) and sulfuric acid (H_2SO_4) are prepared separately, then the mixture is prepared by mixing these two solutions. To make 20 percent solution of sulfuric acid, 213 ml of acid should be mixed slowly and carefully in 787 ml of water. In this way 1000 ml solution is made. Similarly, to make 20 percent solution of nitric acid, 370 ml of acid is mixed in 630 ml of water and this solution becomes 1000 ml. By mixing these two 20 percent solutions, a 20 percent mixture is formed. That is:-

213 ml (100%) sulfuric acid + 787 ml water = 20% solution of 1000 ml sulfuric acid

and 370 ml (100%) nitric acid + 630 ml water = 20% solution of 1000 ml nitric acid

CHAPTER 5

TRANSPORTATION OF RESIN

Keeping in view the increasing prices of resin and the irregularities in its transportation, it is necessary that within 2-3 days of issuing the Rawanna for transportation, Resin filled tins from Jungle Depot to the concerned Motor road depot should be transported. Informing the concerned Section Officer and Forest Range Officer is mandatory before transportation.

Before Transportation of tins filled with resin from Jungle Depot to Motor Road, it should be ensured by the Resin Moharrir / Resin Chowkidar that the Resin tins are properly closed. While weighing, the following entries should be marked on the tin with bitumen:-

Division Name	Nainital Forest Division
Coupe No.	Bhowali-7A
TIN number	223
Resin harvest year	2023
Type of lime (good Resin/ dirty Resin/black Resin)	Good Resin

Generally, it is seen that due to negligence on the part of Resin chowkidar, the total number and weight of tins are mentioned on a slip and the slip is given to the mule owner/labourer and the challan is issued at the motor road depot only, which is a wrong procedure.

Resin should not be kept collected in excessive quantity at the motor road depot . It should be transported from motor road depot to rail head depot at the earliest with proper transit pass/ rawanna. By filling the waybill in the form prescribed for this purpose in 4 copies, the first copy will be collected at first barrier of the range .Second and third copy should be with the truck and fourth copy should be on counterfile in the office. The concerned employees should go with the truck themselves, get it weighed and get one rawanna copy from the rail Head Depot and this information should be immediately given to the concerned Range Officer.

CHAPTER 6

STORAGE OF RESIN AT DEPOT

At resin depot the material is stacked/ stowed division wise and marked properly with lot numbers, generally of 170 tons each.



Proper fire fighting arrangements are made at the depot. Generally an underground water tank of more than 100000 litres is made and one electric as well as diesel driven pumps are installed to charge the firefighting lines in case of emergencies. The stock held at the depot and sold is updated in every 15 days.



Sand buckets and portable fire extinguishers are kept around the depot to deal with the eventualities.

Proper Accounting of the resin is kept in various registers maintained at Resin Depot. Receipt of security deposits post auction, issue of challan for payment of the cost of the resin by the contractors and issue of Rawanna for the sold resin are the major activities of the resin depot staff.

During the peak summers, water sprinkling over the resin tins is done on daily basis to control the temperature and avoid any possibilities of the fire. Watch towers are installed at the periphery of the resin depot and 24x7 watch keeping is done at these towers.



Resin Storage at Resin Depot, Rishikesh

During the Deepawali, special care is being taken by the depot staff and sensitisation of the communities staying near the depot is being done at regular intervals.



Resin Storage at Resin Depot , Sultan Puri (Nainital FD)

CHAPTER 7 : RESIN AUCTION

The divisional Forest Officer, under whose jurisdiction the resin depot lies, is authorised to conduct the auction of the resin as per pre-decided rates. To ensure transparency in allotment of resin to different agencies, resin policy has been formulated and issued on 30 April 2003.

Main features of the policy are:

- 25% of the resin will be sold by open auction on all India basis.
- 50% will be sold by open auction to units registered in Uttarakhand according to their processing capacity.
- Balance 25% will be sold by open auction amongst the units of Khadi-Gramodyog, Co-operatives, Kumaon Mandal Vikas Nigam and Garhwal Mandal Vikas Nigam according to their processing capacity.
- If some quantity of resin is left unsold as per the above arrangements it will also be sold by all India open auction.

Further, during auctioning of resin it is noticed that fresh lot of the resin fetches high price than old lots due to degradation of material quality. Following rates were fetched for resin during auction on 22-09-2023 (which was done for extraction upto 31 March of the year 2023) :-

Year	Rates fetched during auction
2022	Rs 6800
2021	Rs 6500
2020	Rs 6200
Leaked resin	on lower rates

Standard terms and conditions for Resin auction are issued to all the contractors taking part in the auction process.

Lot wise announcement for auction is made by an assistant with the DFO. The lot is allocated to a bidder quoting highest price. At the end of the auction process, details of sold resin in an auction is entered into a register maintained for that purpose and signed by all the successful bidders.

All the documents related to the resin auction are forwarded with the proposal to the Conservator / Chief Conservator of Forests for final approval.



**Table Auction of Resin
at Bhimtaal**

CHAPTER 8 : SHORTCOMINGS / DRAWBACKS IN THE PROCESS

Interactions were done with forest officials involved in the process, resin collectors, and auction participants to gather qualitative insights into the practical aspects of resin management. Additionally, field visits were undertaken to observe the on-ground implementation of the mentioned processes.

Interaction was done with office staff at the division office who is responsible for tendering and issuing of work orders for resin extraction and are responsible for conducting auctioning of the material stowed at the Resin Depots.

Data for last 4-5 years was collected from the Resin section of the division and from resin depot at Sultanpuri, Haldwani. Revenue collection under various types of land (reserved forest, van panchayat land and revenue land) was analysed. Area prescribed in working plan for resin extraction was also analysed.

During verification of the documents in resin files at Division Office, it was noticed that work order for resin extraction was issued in the month of Jun 2023, which was supposed to be issued by 31 Dec 2022. So, it would lead to cascading delays in each subsequent activities and finally reduce the production/ extraction at least by 25-30 % considering the extraction target of 40% by Jun end. Similar delays are also observed in other forest divisions, generally due to non-familiarisation of DFOs with resin extraction

activities. These trends are existing for previous years also. So to calculate the revenue enhancement a minimum value of 5% reduction in production targets is considered in the estimated calculations.

Weighing of all the resin extracted in a month to be completed by 20-27th day of the month at jungle depot and should be transported to the roadside depot within 15 days.

During the field visits it is clearly seen that number of wounds are generally more than 15% in the form of multiple wounds on a single tree or wounds on more number of trees than marked. Due to non- monitoring of this irregularity, there is double loss of revenue, one the Resin mate is not fined for these irregularity and second the extra resin extracted would be misused by the Resin mate and not given to the Govt.



Illegal Resin Wounds



**Illegally transported
resin seized**

During my attachment with the range, I have witnessed three cases of illegal transportation of resin trucks at check post based on the information given by the informers. The transporter has made one small compartment on front side of the truck and covered it with wooden planks and black polythene so that the resin tins are not seen easily while checking the vehicle.

Again there is leakage of resin at jungle depot, roadside depot and railhead/ main resin depot, which incurs a revenue loss to the state.

Further, at resin depot I have noticed that few lots whose auction was processed in year 2000-01, were still lying in the depot. The department has only received the security money for these lots and actual revenue till date was not realised due to some pending litigation in Hon. High Court of Uttarakhand.



Leakage of resin at Resin Depot

Open Stowage of tins

The stowage arrangement at Depot was open and exposure of resin tins to direct sunlight during peak summer and to rain during monsoon was unavoidable.

Further, during auctioning I have noticed that fresh lot of the resin fetches high price than old lots due to degradation of material quality. Following rates were fetched for resin during auction on 22-09-2023 (which was done for extraction upto 31 March of the year 2023) :-

Year	Rates fetched during auction
2022	Rs 6800
2021	Rs 6500
2020	Rs 6200
Leaked resin	lower rates



During my visit to the resin depot, I have noticed that during each year complete material is not auctioned and there is huge amount of material carried forward to next years. It incurs revenue loss in two ways; one the material fetches comparatively low price in the next year due to degradation in material quality, second the revenue supposed to be realised in a year gets delayed and gets realised after one year or two years or sometimes after three years. Further, due to poor storage facility and excess material at depot, the leaked material fetches very less price.

CHAPTER 9

HOW REVENUE CAN BE ENHANCED

Resin extraction process is a major revenue generating activity for the state. The Resin Extractor (Resin Mates) involved in this activity would like to earn lot of profit in this process, which would finally reduce the revenue for the state. Therefore, various provisions are given in the rules and regulation controlling resin extraction process.

If the officials of forest department strictly monitor each and every activity related to resin extraction, then a large sum of revenue can be gained in the form of penalty/ fines due to non-adherence to proper guidelines and regulations. Major provisions where fines can be imposed for various irregularities and carelessness are as follows:-

- (i) Fine for non-marking of tins as good and black resin before transportation @ Rs 70 per tin.
- (ii) Fine for making blaze on a non-marked tree or trees of diameter less than 40 cm- Rs 150 per wound. Generally, quantity of extracted resin from a tree is approximately 4 Kg (4.3) per wound and each Kg of resin fetches a price of approx. Rs 68/-. Thus for a loss of Rs 272 (68x4) only Rs 150 is being fined.
- (iii) Transportation of tins from jungle depot to roadside depot without marking- fine of Rs 10 per tin which has capacity of approx. 16 Kg and cost of such resin is around Rs 1120. Fine imposed in such cases very less and should be revised to make it more than the cost of resin.

- (iv) Transportation of tins should be completed by 31 Dec of the year up to roadside depot. Fine for extending up to 31 Jan of next year @ 1.0 per Qn and up to 15 Feb @ Rs 2.00 per Qn is to be imposed.
- (v) For not meeting the specified production/ extraction targets up to 31 Oct of the year @ Rs 2000 per Qn. It is to be noted here that each Qn of Resin during auction fetches a price of approx. Rs 6800/-. Thus, a Resin mate can take advantage of it by selling few Quintal of resin at black market at price higher than the auction cost and would be very happy to pay a fine of only Rs. 2000/-.
- (vi) Further, due to various reasons there is net loss of the resin quantity available for auctioning. Major reasons are as follows :-
 - (a) Delay in tendering : Tendering delays reduce the effective months for resin tapping.
 - (b) Illegal Activities: Illegal transportation of resin by the Resin Contractors
 - (c) Pilferage/ loss of resin at resin depots.
 - (d) Litigation Delays: Delayed or Non realisation of revenue due to pending litigation.
 - (e) Non-compliance to established rules and regulations.

By imposing fines and improving the short falls mentioned above, a large sum of revenue can be added to the revenue being fetched presently.

CHAPTER 10

HOW MUCH REVENUE CAN BE ENHANCED

The losses in the realised revenue are estimated to be significant and has been due to various factors as mentioned below:-

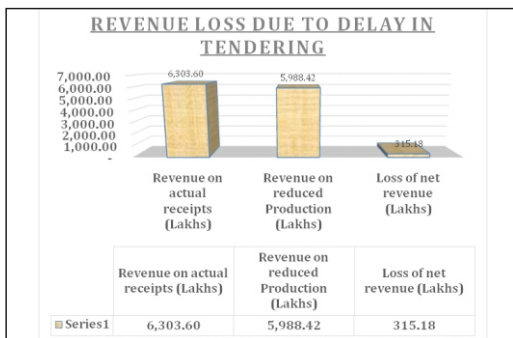
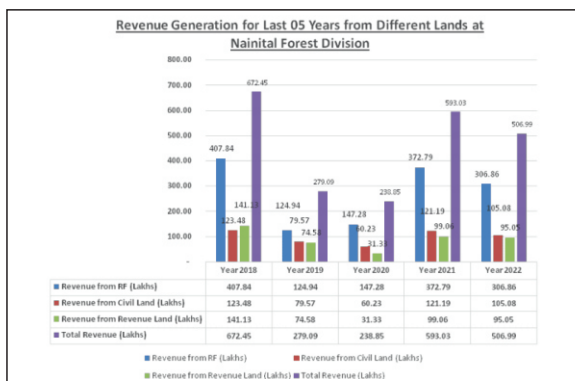
- (I) Loss due to wrong marking of trees (with deviation from Working Plan prescriptions) for resin extraction @ 1%, considering that revenue earned from such resin not given to the Government.
- (ii) Loss due to delay in tendering and issue of work order, which leads to less production/ extraction of revenue estimated @ 5% on an average.
- (iii) Loss due to non-monitoring of numbers of wounds/ extraction process during resin extraction @ 1% considering approx. 10-15 % excess wounds observed in few coupes during field visits.
- (iv) Loss due to delay in realisation of revenue in the current year @ 2%
- (v) Loss due to carrying forward of the material to next years and fetching less cost in forthcoming years @ 2.53%
- (vi) Loss due to illegal Trade, leakage at Motor Road depot, leakage at rail head depot, litigations etc @ 0.25%
- (vii) Loss of future revenue due to excess wounds 0.25%

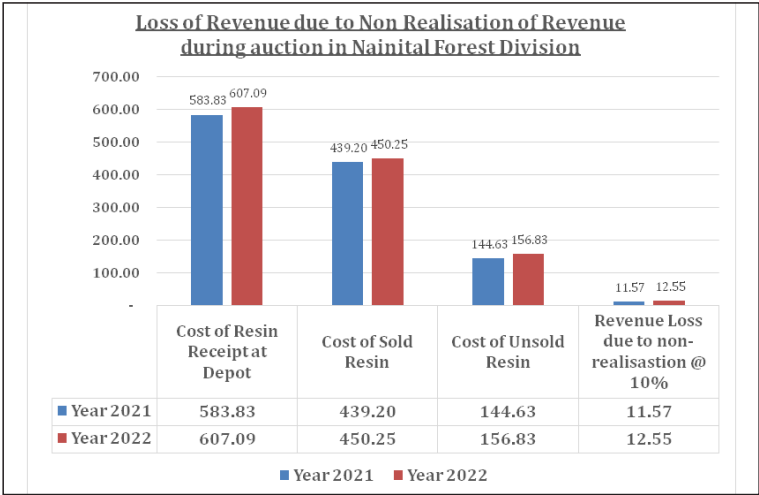
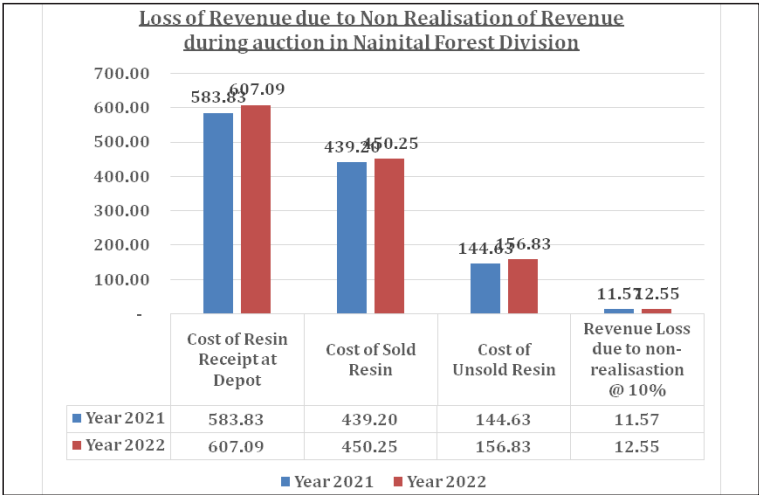
(viii) Loss of revenue due to non-participation of far away (all India) vendors in auctioning @ 1% as local bidders generally quote lower rates

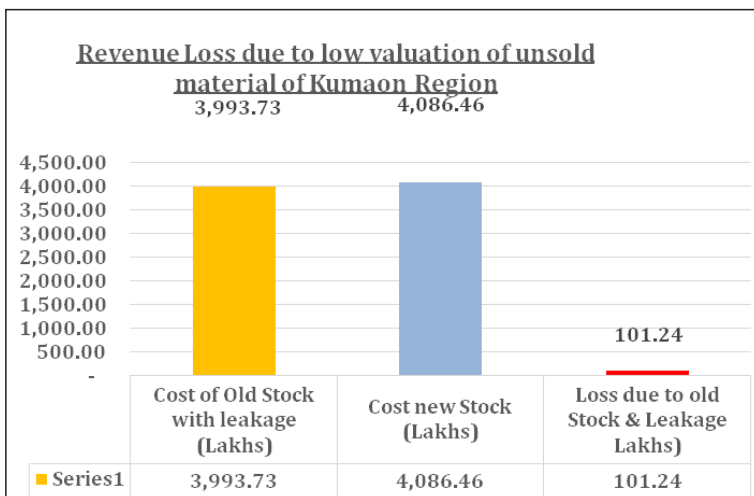
(ix) Overall loss comes out to be approximately 12.03 % of the overall revenue.

Resin extraction is carried out in three types of lands such as Reserve Forests (RF), Civil Land/ Van Panchayat Land and Revenue land. Royalty @ 90% of the selling amount is paid back to Van Panchayats and land owners of the revenue land. Revenue out of RF is credited in treasury.

Various charts showing these findings are presented below:-





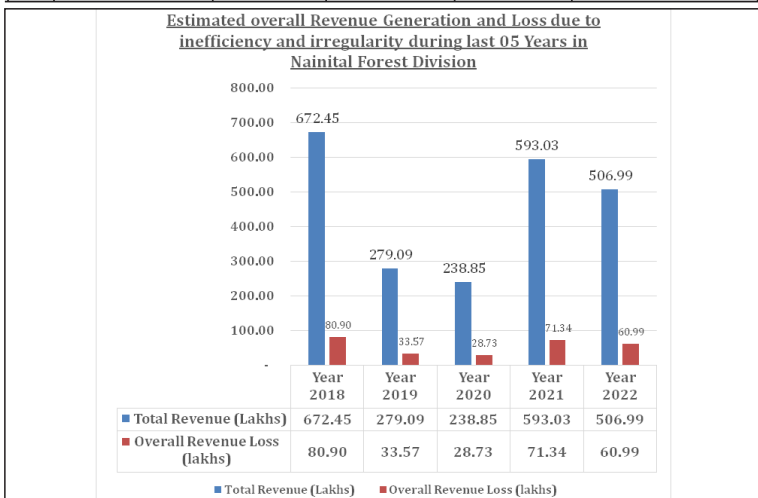


SUMMARY OF REVENUE LOSS DUE TO VARIOUS PROBLEMS IN THE ENTIRE REVENUE EXTRACTION / AUCTIONING PROCESS

S. No	Details	Loss in terms of % loss in a year (Lakhs)	Total expected Revenue (Lakhs)	Loss in terms of revenue	Remarks
1	Loss due to wrong marking of trees	1.00	6,304	758 trees below 40 cm	Making of wounds on excess trees / marking
2	Loss due to delay in tendering	5.00			Loss of production due to late issue of work order

S. No	Details	Loss in terms of % loss in a year (Lakhs)	Total expected Revenue (Lakhs)	Loss in terms of revenue	Remarks
3	Loss due to delay in realisation of revenue (C/F)	2.00			Loss of annual rate of return @ 10%
4	Loss due to low valuation of old stock during auctioning	2.53			Old material fetches less value in subsequent years
5	Illegal Trade, leakage at Roadhead depot, leakage at rail head depot, litigations etc	0.25			Three incidents of illegal resin transportation were noticed during Range attachment. Lot of leakage was observed during visits at Jungle Depot, Road side depot and Railhead Depot.
6	Loss of future revenue due to excess wounds,	0.25			Lot of excess wounds and larger blazes are observed

S. No	Details	Loss in terms of % loss in a year (Lakhs)	Total expected Revenue (Lakhs)	Loss in terms of revenue	Remarks
	more no of rills etc.				during Resin coupe inspections.
7	Loss due to non-participation of far- away vendors in auctioning	1.00			Due to higher bargaining by limited vendors and quoting lesser prices
	Total	12.03			



The losses shown above are calculated based on certain observation made in a single forest division as sample unit and finally it is extrapolated to the entire state. Certainly there is large scope in improvement of revenue under various categories as mentioned above.

CHAPTER 11

WAY AHEAD / RECOMMENDATIONS

It can be concluded that certainly there are deficiencies in these process at various level and different agencies are involved in this process. By addressing these issues revenue generation can certainly be increased by a significant margin, which would lead to more employment generation and would result in sustainable resin extraction. By addressing current challenges, the department can ensure sustainable forest management and contribute to the economic development of the region. By adopting streamlined methods at each stage, we can achieve a considerable amount of increase in revenue generation which can be utilised for creating alternative employment for unemployed youth in the region/ state, can be utilised for infrastructure development and capacity enhancement and even rewarding the hardworking field staff involved in this process and helping in revenue enhancement.

Following points are recommended/ suggested for implementation for enhancing the revenue generated in resin extraction process: -

- (a) Formal training of all DFOs on resin extraction process be conducted as a practice so that delay in understanding the process after posting can be avoided.
- (b) 100% marking of allocated coupes as per working plan prescriptions and submission of complete details to the Divisional Forest Officer so that tendering process may be started in time.

- (c) Issue of Tender for extraction and transportation upto roadside depot so that work can be started in the coupe from 01 March of the year. Online tendering can be initiated to make the system more transparent and faster.
- (d) Monitoring of wounding and extraction process rigorously through the recommended period of 08 months i.e March-Oct.
- (e) Rules be amended to impose rigorous fines in case of illegal wounds, illegal transportation and shortfalls in the productions. Presently specified rules are not strict.
- (f) Strict Enforcement of Regulations and compounding of cases in illegal trade/ transportation be avoided and confiscation of vehicles be implemented mandatorily to deter the gang of resin smugglers. Impose severe penalties for illegal activities, including transportation without authorization.
- (g) Ensure timely resolution of litigation to prevent fire hazards.
- (h) Transparency in Auctions: Encourage fair competition during auctions by discouraging collusion among contractors. More number of contractors from outside the state be encouraged and explored. A proper market survey of the material be presented before the auction starting process so that high rates can be fetched during auctioning. Promote the participation of contractors from distant locations for a more competitive bidding process.

- (i) Optimization of Resin Lots: Explore options for faster disposal of older resin lots through incentivized schemes.
- (j) Consider alternatives for the use of seized resin to prevent revenue loss.
- (k) Efforts should be made by the respective depot and auctioning authority to dispose the resin at the earliest opportunity and avoid long warehousing at depot. It will reduce risk of loss to revenue due to various factors such as leakage, fire incidents, thefts etc.
- (l) Fire fighting arrangement with latest technology be provided at each depot to meet the emergencies.
- (m) Overhead shades be provided in the depot, to keep the temperature of resin tins within limit during peak summer and also protection from exposure to rain.
- (n) Provide training to forest officials on modern resin extraction techniques.
- (o) Collaborate with local communities, NGOs, and other stakeholders for better forest management and sustainable resin extraction. A strong intelligence network be established to gather the information on illegal activities.
- (p) If sufficient staff is not available in forest department, the activities of resin extraction/ auctioning can be given to Uttarakhand Forest Corporation so that forest department can concentrate on forestry and wildlife cases and expertise of the Corporation in these activities can be liberalised effectively.

CHAPTER 12 : REFERENCES

- [1] Working Plan Document for Nainital Forest Division for 2019-20 to 2028-29
- [2] *The U.P. Resin and other Forest Produce (Regulation of Trade) Act*, 1976
- [3] *The U.P. Resin and other Forest Produce (Regulation of Trade) Rules*, 1976
- [4] Forest & Environment Section-2 of Uttarakhand Sachiwalaya letter No. 756/1(2) FVV / 2003-9(2) dated 30 April 2003.
- [5] Resin Auction Notice of Nainital Forest Division dated 29-09-2023.
- [6] Nainital Forest Division Work Order issued for 2022 for extraction and transportation of resin through resin mates.
- [7] Contents available at : <https://www.sciencedirect.com/science/article/pii/S0926669023008701>. Accessed on: 20/02/2024
- [8] <https://www.chemjournal.com/archives/?year=2020&vol=8&issue=1&ArticleId=8567&si=false>
- [9] <https://www.tandfonline.com/doi/full/10.1080/26395916.2021.1892827>

Annexure I :

***The U.P. Resin and other Forest
Produce (Regulation of Trade) Act, 1976
(U.P. Act No. 13 of 1976)***

Received the assent of the Governor on April 16, 1976, under Article 200 of the Constitution of India and was published in Part I (a) of the Legislative Supplement of the Uttar Pradesh Gazette, Extraordinary, dated April 19, 1976.

An Act to provide in the interest of the general public for the carrying on by the State of the trade of purchase and distribution of resin to the exclusion of others, and for the regulation of manufacture and preparation of various articles based on forest produce, and for matters connected therewith.

It is hereby enacted in the Twenty-seventh Year of the Republic of India as follows :

CHAPTER I

PRELIMINARY

1. Short title, extent and commencement. -

- (1) This Act may be called the Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Act, 1976.
- (2) It extends to the whole of Uttar Pradesh.
- (3) (a) Chapters I and III shall be deemed to have come into force on October 4, 1975.
(b) Chapter II-
 - (i) shall be deemed to have come into force on October 4, 1975 in Almora, Naini Tal, Pithoragarh, Chamoli, Garhwal, Tehri-Garhwal, Uttar Kashi, Dehra Dun, Bareilly and Saharanpur Districts; and
 - (ii) in the remaining areas of Uttar Pradesh, shall come into force on such date as the State Government may, by notification in the Gazette, appoint in that behalf, and different dates may be appointed in relation to different such areas.

CHAPTER II

REGULATION OF THE TRADE OF RESIN

2. Definitions. - In this Chapter, unless the context otherwise requires-

- (a) "*appointed day*", in relation to any area, means the day on which this Chapter comes into force in that area;
- (b) "*authorised officer*" means an Officer of the State Government authorised by it to purchase or sell resin on its behalf and to grant permits under Section 5;
- (c) "*prescribed*", means prescribed by the rules made under this Chapter;
- (d) "*resin*" means the secretion extracted by tapping from Chir or Kail trees;
- (e) "*resin depot*" means a place specified as such by the Conservator of Forest for the purchase, storage or sale of resin tapped in an area specified in relation to that depot;
- (f) "*resin products*" means derivatives obtained by processing of resin and includes resin, turpentine, hardened resin, and also includes paints and varnishes manufactured directly from resin;
- (g) "*tapper of resin*" means a person who taps resin;
- (h) "*unit*" means a unit constituted under Section 3;

- (I) words and expressions used but not defined in this Chapter and defined in the Indian Forest Act, 1927, as amended from time to time in its application to Uttar Pradesh, shall have the meanings assigned to them in that Act.

3. Constitution of units. - The State Government may, by notification in the Gazette divide the State into such numbers of units, as it may deem fit, and until varied by such notification, each forest circle (as for the time being delimited by general or special orders of the State Government) shall constitute a unit.

4. Restrictions on sale, purchase and transport of resin, etc. - On and after the appointed day-

- (a) no person shall tap resin or manufacture any resin product or export any resin or resin product unless he is registered under and in accordance with Section 10;
- (b) no person shall sell resin to any person other than the State Government or an authorised officer;
- (c) no person other than the State Government or an authorised officer shall purchase resin from any tapper of resin;
- (d) no person other than the State Government or an authorised officer shall transport resin except in the following cases-
 - (i) where he being a taper of resin transports it to the resin depot specified for the area where the resin is tapped; or

- (ii) where he transports it on behalf of the State Government or an authorised officer;
- (e) no person other than the State Government or an authorised officer shall transport resin products manufactured in a unit to any place outside that unit without a permit issued in that behalf by such authority, in such manner and subject to such terms and conditions as may be prescribed.

5. Permit for sale, transport, etc. -

- (1) Notwithstanding anything in Section 4, the State Government or an authorised officer may on such terms and conditions and in such manner as may be prescribed-
 - (a) permit any person, who had purchased any resin before the appointed day within an area to which this Chapter applied to transport and sell such resin to any person other than the State Government or an authorised officer and permit any person other than the State Government or an authorised officer to purchase and transport the same; or
 - (b) permit any person, who has purchased resin from the State Government or an authorised officer for manufacture of resin products to transport the same and to sell any resin which he has been unable to utilise in the manufacture of resin products; or
 - (c) permit any person, who has purchased any resin outside Uttar Pradesh to bring the same inside

the State either for manufacture of resin products within the State or for transporting them elsewhere outside Uttar Pradesh; or

- (d) permit any person, who has purchased any resin within Uttar Pradesh outside any area to which this Chapter applies to transport it to any area to which this Chapter applies for the manufacture of resin products.
- (2) A person to whom a permit is granted under sub section (1) shall be liable to payment of such fee as may be prescribed.

6. Constitution of an Advisory Committee. –

- (1) The State Government shall for each year constitute for each unit in which resin is tapped, an Advisory Committee which shall consist of not more than nine members nominated by the State Government :

Provided that one-third of such members shall be officers of the Forest Department and not more than one-third of such members shall be from amongst tappers of resin.

- (2) The Advisory Committee for each such unit shall advise the State Government in the matter of fixation from time to time of a fair and reasonable price at which resin offered for sale may be purchased by or on behalf of the State Government in that unit, and also on such other matters as may be referred to it by the State Government.
- (3) The business of the Committee shall be conducted in such manner as may be prescribed.

7. Fixation of price by the State Government. -

- (1) The State Government shall, having regard to following factors, fix the price at which resin shall be purchased by or for it in each unit during the year, namely :
 - (a) the price of resin, if any, fixed under this Chapter during the preceding three years in respect of the unit;
 - (b) the quality of the resin tapped in the unit;
 - (c) the cost of transport;
 - (d) the general rate of wages for labour prevalent in the unit;
 - (e) the cost of extraction of resin;
 - (f) the cost of packing of resin including the cost of container in which resin is delivered;
 - (g) any other factor which the State Government considers relevant.
- (2) The price so fixed shall be published in such manner as the State Government may direct, and shall not be altered during the year to which it relates.
- (3) The price so fixed shall be for net weight of resin excluding the weight of container in which resin is packed.
- (4) Where an Advisory Committee has been constituted under Section 6 it shall, wherever practicable, be consulted by the State Government before the fixation of price under sub-section (1).

8. State Government to purchase all resin offered for sale. -

- (1) The State Government shall be bound to purchase at the price fixed under Section 7 all resin offered for sale to or for it during the normal hours of business at a resin depot:

Provided that it shall be open to an authorised officer to refuse purchase of such resin as in his opinion is not fit for the purpose of manufacture of resin products.

- (2) Any person aggrieved by the authorised officer's refusal to purchase resin under the proviso to sub-section (1), may, within fifteen days from such refusal, and in the manner prescribed, complain to the Divisional Forest Officer or such other officer as may be empowered by the State Government in that behalf (hereinafter referred to as the competent officer).
- (3) On receipt of a complaint under sub-section (2), the competent officer shall hold a summary inquiry and pass such order within thirty days of the receipt of the complaint as he may deem fit, and in case he finds such refusal to be improper, he may direct the authorised officer to purchase the same.
- (4) Where the competent officer finds the refusal of the resin proper but in his opinion, the resin may be purchased at a lower price, he may direct the authorised officer to purchase the same at such lower price as he deems fit.
- (5) Notwithstanding anything in sub-section (1), where the State Government or an authorised officer has reason to believe that any resin offered for sale was

tapped from trees standing on any land which was vested in or belonged to the State Government or which was constituted as Reserved Forest or Protected Forest of Panchayati Forest, such resin may be appropriated without payment of price, and on payment only of such collection charges, if any, as the State Government or the authorised officer may determine.

- (6) The provisions of sub-sections (2) to (4) shall *mutatis mutandis* apply in relation to any action taken under sub-section (5).
- (7) Every order passed under this section shall be final.

9. Tapping of trees which are not being tapped. -

- (1) If State Government or any authorised officer finds that any Chir or Kail tree standing in a unit is not being tapped, the State Government or the authorised officer may by notice require the owner of such tree to commence tapping of the same or to cause its tapping commenced within such time as may be prescribed.
- (2) If after the service of the notice under sub-section (1), the owner of the tree fails to comply with such notice, the State Government or the authorised officer may, in the manner prescribed, cause the tree to be tapped for extraction of resin.
- (3) All resin extracted from a tree under sub-section (2), shall be sold in accordance with the provisions of the Chapter and the rules made thereunder and the price thereof shall, after deducting the expenses of tapping, be paid to the owner of such trees.

Explanation. - For the purposes of this section, the term 'owner' in relation to a Chir or Kail tree, includes the person in possession, management or control of such tree.

10. Registration of tappers of resin, etc. - Every tapper of resin, every manufacturer of resin product and every exporter of resin or resin products shall be entitled to registration on payment of such fee, to such authority and in such manner as may be prescribed.

11. Disposal of resin. - Resin purchased by the State Government shall be sold or otherwise disposed of in such manner as the State Government may by general or special order direct.

12. Delegation of powers. - The State Government may, by general or special order, delegate any of its powers or functions under this Chapter or the rules made thereunder to any officer not below the rank of an Assistant Conservator of Forests who shall exercise or perform the same, subject to such conditions or restrictions, if any, as the State Government may specify in the order.

13. Powers of entry, search, seizure, etc. - (1) Any police officer not below the rank of sub-inspector or any forest officer may, with a view to securing compliance with the provisions of this Chapter or the rules made thereunder or to satisfying himself that the said provisions have been complied with-

- (i) stop and search any person, vessel, vehicle or receptacle used or . intended to be used for the transport of resin or resin product;
- (ii) enter and search any place;

- (iii) seize resin or resin product in respect of which he suspects that any provisions of this Chapter or the rules made thereunder has been, is being or is about to be contravened along with the receptacle containing or carrying such resin.
- (2) The provisions of Section 100 of the Code of Criminal Procedure, 1973 (Act 2 of 1974), relating to search and seizure shall, so far as may be, apply to searches and seizures under this Section.

14. Penalty. - If any person contravenes any of the provisions of this Chapter or the rules made thereunder, he shall be deemed to have committed a forest offence, and the resin or resin product, if any, in respect of which such offence is committed shall in relation to the commission of such offence be deemed to be forest produce, and the provisions of Chapter IX of the Indian Forest Act, 1927 (Act XVI of 1927), as amended in its application to Uttar Pradesh (excepting Section 69 thereof), shall accordingly apply with necessary modifications.

15. Offences by companies. -

- (1) If the person committing an offence under this Chapter is a company, the company as well as every person in charge of and responsible to the company for the conduct of its business at the time of the commission of the offence shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly :

Provided that nothing contained in this sub-section shall render any such person liable to any punishment if he proves that the offence was committed without

his knowledge or that he exercised all due diligence to prevent the commission of such offence.

- (2) Notwithstanding anything contained in sub-section (1), where any offence under this Chapter has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or that the commission of the offence is attributable to any neglect on the part of any Managing Agent, Secretary, Treasurer, Director, Manager or other officer of the Company, such Managing Agent, Secretary, Treasurer, Director, Manager or other officer of the Company shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly :

Explanation. - For the purposes of this section-

- (a) "*company*" means any body corporate, and includes a firm or other association of individuals, and
- (b) "*director*" in relation to a firm, means a partner in the firm.

16. Cognizance of offences. - No court shall take cognizance of any offence punishable under this Chapter except on a report in writing of the facts constituting such offence made by any Forest Officer not below the rank of a Range Officer or by such other officer as may be empowered by general or special order of the State Government in that behalf.

17. Provisions of this Chapter to have over-riding effect. - The provisions of this Chapter shall have effect notwithstanding anything inconsistent therewith

contained in any other law or in any contract or other instrument.

18. Savings in respect of acts done in good faith. -

- (1) No suit, prosecution or other legal proceeding shall lie against any person for anything which is in good faith done or intended to be done in pursuance of the provisions of this Chapter or the rules made thereunder.
- (2) No suit or other legal proceeding shall lie against the State Government for any damage caused or likely to be caused or any injury suffered or likely to be suffered by virtue of the provisions of this Chapter or the rules made thereunder or by anything which is in good faith done or intended to be done in pursuance of this Chapter or the rules made thereunder.

19. Power to make rules. -

- (1) The State Government may, by notification in the Gazette, make rules for carrying out purposes of this Chapter.
- (2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely-
 - (a) the publication of the price list of the resin;
 - (b) the manner of holding inquiries under this Chapter;
 - (c) the authority by whom, the manner in which and the conditions subject to which permits may be

issued under Section 5 and the fees payable for such permits;

- (d) the disposal of the resin, the purchase of which was refused under Section 8;
 - (e) the manner of tapping the trees for resin under Section 9;
 - (f) the manner of registration under Section 10, the period within which Such registration shall be made, and the fees payable therefor;
 - (g) specifications of resin for purposes of determination of quality;
 - (h) any other matter which is to be or may be prescribed.
- (3) All rules made under this Chapter shall as soon as may be after they are made be laid before each House of the State Legislature, while it is in session, for a total period of not less than thirty days, comprised in its one session or two or more successive sessions, and shall unless some later date is appointed, take effect from the date of their publication in the Gazette, subject to such modification or annulments as the two Houses of the Legislature may during the said period agree to make, so however, that any such modification or annulment shall be without prejudice to the validity of anything previously done thereunder.
- (4) Not with standing anything in sub-section (3), any rules made within one year from the commencement of this Act may be made retrospectively to a date not earlier than such commencement.

20. Transitory provision. - Where at any time before the appointed day, any person had entered into any contract for the sale of resin expected to be tapped by him to any trader and obtained an advance from such trader towards the price of the resin expected to be delivered to the trader under such contract, then notwithstanding that by virtue of the provisions of Sections 4 and 17, such contract shall have become void on the appointed day, the said person and trader may make a joint application before the Divisional Forest Officer or an officer authorised by him in that behalf giving particulars of such advance, and thereupon the said officer, on being duly satisfied that the application has been voluntarily made by the said person, may direct the officer to pay on behalf of the said person to such trader a sum equivalent to the said advance (less the amount already repaid by the said person, to such trader) without any interest or compensation, out of the price due to the said person for resin sold under Section 8, and the liability of the State Government to the said person and of the said person to the trader shall to the extent of such payment stand discharged, and tire said person shall not be liable to pay any interest or compensation in respect of such advance.

CHAPTER III

REGULATION OF MANUFACTURE AND PREPARATION OF ARTICLES BASED ON FOREST PRODUCE

21. Amendment of Act XVI of 1927. - After Chapter VIII of the Indian Forest Act, 1927 as amended in its application to Uttar Pradesh, the following Chapter shall be inserted namely : "Chapter VIII-A

Regulation of manufacture and preparation of articles based on forest produce

51A. Power to regulate, Manufacture, etc. of articles based on forest produce. - The State Government may make rules-

- (a) to provide for the establishment and regulation by licences, permits or otherwise (and the payment of fees therefor) of saw mills and units including factories engaged in the manufacture or preparation of-
 - (i) kattha out Khair tree;
 - (ii) resin, turpentine and other products out of resin;
 - (iii) plywood and match out of timber;
 - (iv) such other preparations based on forest produce as the State Government may, by notification in the official Gazette, from time to time, specify;
- (b) to provide for the regulation by licences, permits or otherwise of the supply of raw materials relating to the preparations mentioned in clause

(a), the payment of fees therefor, the deposit of such sum or due to performance of the conditions of any such licence, permit or other document, the forfeiture of the sum so deposited or any part thereof for contravention of any such conditions, and the adjudication of such forfeiture by such authority as may by notification in the official Gazette be specified by the State Government.”

22. Repeal and Savings. -

- (1) The Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Ordinance, 1976 (U. P. Ordinance No. 10 of 1976) is hereby repealed.
- (2) Notwithstanding such repeal or the repeal of the Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Ordinance, 1975, (U. P. Ordinance No. 30 of 1975) by the said Ordinance of 1976, anything done or any action taken under the said Ordinance shall be deemed to have been done or taken under this Act, as if this Act was in force at all material times.

Annexure II : U.P. Resin and other Forest Produce (Regulation of Trade) Rules, 1976

Published vide Notification No. 4380/14-2-188-75, dated 22nd January, 1977, published in the Uttar Pradesh Gazette, Extraordinary, dated 1st February, 1977 (w.e.f. 16th April, 1976)

In exercise of the powers under Section 19 of the Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Act, 1976 (U.P. Act No. 13 of 1976), the Governor is pleased to make the following rules :

1. Short title and commencement.-

- (I) These rules may be called the Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Rules, 1976.
- (ii) These rules shall come into force with effect from April 16, 1976.

2. Definitions.- In these rules, unless the context otherwise requires-

- (i) "Act" means the Uttar Pradesh Resin and Other Forest Produce (Regulation of Trade) Act, 1976;
- (ii) "Divisional Forest Officer" means the Forest Officer incharge of a Forest Division;
- (iii) "Forest Export Chauki" means a chauki established under Section 41 of the Indian Forest Act, 1927;

- (iv) "*Form*" means a form appended to these rules;
- (v) "*Manufacturer of resin products*" includes a person owning factory for manufactures of resin products;
- (vi) "*Section*" means a section of the Act;
- (vii) All other words and expression used in the Act but not defined in these rules shall have the meaning assigned to them in Act.

3. Authorised, officer and competent officer [Sections 4, 8 and 9].-

- (1) The officers mentioned in the schedule appended to these rules shall be the authorised officers for the purpose noted against each of them.
- (2) The Assistant Conservator of Forest shall also be the competent officer for purpose of Section 8.

4. Restrictions on sale, purchase and transport of Resin [Section 4].-

- (1) Application for issue of permit under Clause (e) of Section 4 shall be made in Resin Form No. 1 and shall be submitted to the Divisional Forest Officer who shall after making such inquiries as he deems fit, issue permit in Resin Form No. 2:

Provided that where the Divisional Forest Officer has reasons to believe-

- (i) that the resin products manufactured by the applicant from the quantity of resin purchased from the State Government or its authorised

officer are in excess of what should have been manufactured from such quantity of resin; or

- (ii) that the resin procured by the applicant was from unauthorised sources, he may reject the application partially or in toto.
- (2) The resin products in respect of which the application for permit under sub-rule (1) has been rejected may, after an opportunity of being heard has been given to the applicant, be seized by the Divisional Forest Officer concerned.
- (3) Any person aggrieved by the order of the Divisional Forest Officer made under sub-rule (2) may prefer an appeal to the Conservator Forests of the unit concerned within thirty days from the date of the rejection order under sub-rule (1), and the order of the Conservator of Forest shall be final.

5. Section 4.- (1) On issue of a permit in Resin Form 2 by the Divisional Forest Officer, the permit holder shall obtain authenticated subsidiary permit forms (Resin Form 3) from the Range Officer within whose jurisdiction the place of manufacture of resin products is situate and shall be responsible to fill in and issue the subsidiary permit himself in a proper manner subject to the following conditions-

- (a) Each consignment of resin product during movement by any mode of transport by road, rail, water or air, shall be accompanied by a subsidiary permit.
- (b) Resin products shall be transported only by the route specified in the permit and shall be produced for checking at each forest export chauki within a unit.

- (c) Except with the permission in writing of the Range Officer, resin products shall be transported within a unit at any time after sunset and before sunrise.
- (d) All subsidiary permits after transport resin products or after expiry of the period mentioned therein, whichever is earlier, shall be returned within a fortnight to the nearest Range Forest Officer of the unit.

6. Permit for sale, transport etc. [Section 5].-

Permit for sale and/or transport of resin under sub-section (1) of Section 5 shall be of the following types-

S.No	Purpose of permit	Permit Form No.
(a)	For sale or purchase of resin stored from before the appointed day within an area to which Chapter II of the Act applies to or from any person other than the State Government or an authorised officer and to transport the same.	Resin Form 4
(b)	(I) For transport of resin purchased from the State Government or an authorised officer for manufacture of resin products.	Resin Form 5
	(ii) For transport and/or sale of resin unutilised in the manufacture of resin products out of resin purchased from the State Government or an authorised officer for manufacture of resin products.	Resin Form 5

S.No	Purpose of permit	Permit Form No.
(c)	For transport of resin purchased from outside Uttar Pradesh to a place within the State either for manufacture of resin products or to again transport the resin elsewhere outside Uttar Pradesh.	Resin Form 6
(d)	For transport of resin purchased for manufacture of resin products from any area within Uttar Pradesh but outside the areas to which Chapter II of the Act applies, to any area to which Chapter II of the Act applies.	Resin Form 7

7. (1) Every application for permit under Clauses (a) to (d) of Rule 6 shall be in Resin Forms 4-A, 5-A, 6 A and 7 -A as the case may be.
- (2) The authorised officer may, after making such enquiry as he deems necessary and for reason to be recorded, reject the application referred to in sub rule (1), wholly or partly.
- (3) Any person aggrieved by an order of rejection under sub-rule (2), may prefer an appeal to the Conservator of Forests of the unit concerned and the provisions of Rule 4 (3) shall *mutatis mutandis* apply to every such appeal.
8. (1) Where a permit has been issued in accordance with Rule 6 or Rule 7 and the permit holder wants to export the quantity specified in the permit under different consignments or in different conveyances, then the Range Officer/Depot Officer concerned shall issue necessary Rawannah for each such consignment or conveyance.

- (2) The provisions of Rule 5 shall *mutatis mutandis* apply to the Rawannah issued under sub-rule (1).

9. Procedure for conducting the business of the committee [Section 6].-

- (1) The State Government shall publish the names of the members of the Advisory Committees constituted under Section 6 in the *official Gazette*. For each such committee, there shall be a Chairman and a Convener.
- (2) Every meeting of the Committee, shall be presided over by the Chairman and in his absence by the Convener. If both Chairman and the Convener are absent, the members present shall elect one of the members present as Chairman and hold the meeting.
- (3) The Advisory Committee shall ordinarily hold its meeting at the headquarters of the emit for which it is constituted.
- (4) The Convener shall with the approval of the Chairman fix the date, time and place of the meeting of the Committee and intimate the same in writing to all the members of the Committee.
- (5) For members of the Advisory Committee shall constitute the quorum.
- (6) The minutes of the proceedings shall be reduced to writing and the same shall be approved by the person presiding over the meeting. Such approval shall be taken as final proof of the authenticity of the Committee's recommendation.

10. (1) The advise of the Advisory Committee shall be conveyed to the State Government on or before a date to be specified by the State Government in that behalf.
- (2) A copy of the minutes of the meeting shall invariably be sent along with the said advice.

11. Procedure of enquiry about rejected Resin.-

- (1) On receipt of a complaint under sub-section (2) of Section 8 the Divisional Forest Officer or the Assistant Conservator of Forest concerned shall as soon as possible intimate to the complainant the place, date and time fixed for holding the enquiry.
- (2) On the date fixed or any subsequent date to which the inquiry may be adjourned the officer referred to in sub-rule (1) shall, after hearing the complainant or his duly authorised representative, and after making such further enquiry as he may deem necessary pass necessary orders in accordance with sub-sections (3) and (4) of Section 8.
- (3) Where any resin offered for sale has been refused under the proviso to Section 8 (1), and the officer referred to in sub-rule (1) finds-
 - (a) that the refusal to purchase tire resin was proper; and
 - (b) that the quality of resin is such that it is unfit for the purposes of manufacturing resin products, then he shall cause such resin to be sold by public auction as soon as possible.
- (4) The officers referred to in sub-rule (1) shall give due publicity before the auction mentioned in sub-rule (3).

- (5) The sale-proceeds recovered from the auction shall be paid to the complainant after deducting the expenses of sale which shall, in no case, exceed twenty per cent, of the sale-proceeds.

12. Tapping of untapped trees [Section 9].-

- (1) Where the owner of any, Chir or Kail tree fails to commence its tapping by the end of March in any year, then the authorised officer shall serve a notice requiring the owner to commence tapping or to cause its tapping commenced within the period of fifteen days from the service of such notice.
- (2) Where the owner of the Chir or Kail tree fails to comply with the notice referred to in sub-rule (1) the authorised officer may cause the tree to be tapped for a period not exceeding five years, for extraction of resin through its own agencies in accordance with the Resin Tapping Rules for the time being in force in the reserved forested of the State Government.
- (3) All resin extracted under Section 9(2) shall be disposed of in accordance with the general or special order of the State Government issued under Section 11.

13. Registration of Tappers of Resin, etc. [Section 10].-

- (1) Tappers of resin shall be of two types viz. (a) Government tappers, and (b) Private tappers.
- (2) Government tapper means a person who is authorised in writing by the Divisional Forest Officer to tap trees standing in the Reserve forest, Protected

Forests or Panchayat Forests within his forest division for extraction of resin and includes a person authorised to tap resin under the Rule 12 (2).

- (3) Private tapper shall either be the owner of the trees other than the State Government who gets them tapped through labourers engaged by him for extraction of resin or one authorised in writing by the owner of the trees other than the State Government to get them tapped through labourers. Labourers engaged in tapping work shall not be considered as tappers for purposes of these rules.
14. A Government tapper shall be deemed to have been registered under Section 10, if he submits his own name, parentage and address, and also the names, parentage and addresses of each of the labourers engaged by him for purposes of extraction of resin from the trees, to the Range Officer in whose forest range he has been authorised to tap trees.
15. (1) Private tapper shall submit an application in duplicate for registration in Resin Form 8 to the Range Officer within whose jurisdiction the trees required to be tapped for resin are situate. The Range Officer, after due verification shall forward one copy of the application within 30 days of its receipt to the Divisional Forest Officer who, after making such enquiry as he deems necessary, may issue a certificate in Resin Form 9 or reject the application after recording reasons therefor.
- (2) Every application under the sub-rule (1) shall be accompanied with the fee specified in Rule 18.

(3) Certificate of registration of a private tapper shall be subject to the following conditions-

- (I) The certificate of registration shall be valid for one calendar year unless it is cancelled or modified earlier by the Divisional Forest Officer for reasons to be recorded by him in writing or the holder ceases to be the owner of the trees in respect of which the certificate of registration has been granted.
 - (ii) If a certificate is lost or mutilated a certified copy of the same can be obtained from the office of the Divisional Forest Officer on payment of Re. 1 for each such copy.
 - (iii) The aforesaid certificate shall be produced by the holder or his authorised representative at the resin depot while offering resin for sale.
 - (iv) Every private tapper shall furnish by the 15th January following the year for which the certificate of registration was granted, an account in writing of total quantity of resin in quintals or number of 20 litre tins tapped and collected and disposed of by him during the year of registration.
16. (1) Every application for registration as manufacturer of resin product shall be in Resin Form 10.
- (2) Every application referred to in sub-rule (1) shall be accompanied with the fee specified in Rule 18 and shall be made to the Divisional Forest Officer within whose jurisdiction resin products are to be manufactured or resin or resin products are stored or the place from which the resin or resin products are to be exported.

- (3) The Divisional Forest Officer may, after making such enquiry as he deems necessary, issue a certificate of registration in Resin Form 11 or reject the application after recording reasons therefor.
 - (4) Every certificate of registration issued under sub-rule (3) shall be subject to the conditions specified in rule 15 (3) except that a fee of rupees five shall be payable for a certified copy of the certificate concerned in case of loss or mutilation.
 - (5) Where a manufacturer of resin products has committed breach of any of the conditions of registration, or has contravened the provisions of these rules, or has been guilty of any offence punishable under Section 14, the Divisional Forest Officer may after affording an opportunity to show cause, cancel the certificate of registration.
17. Every permit, subsidiary permit or *rawannah* issued under Rule 8 shall be liable to be cancelled by the officer issuing the same, if such officer has reasons to believe that it has been misused by the holder thereof.
 18. The rate of fee payable under the Act or these rules shall be as follows :

(a)	On application for permit under Section 4 (e)	25 paise per qtl. of resin product.
(b)	On application for permit under Section 5 (1) (a)	Nil
(c)	On application for permit under Rule 6 (b) (i) pertaining to Section 5 (1) (b)	Nil

(d)	On application for permit under Rule 5 (1) (ii) pertaining to Section 5 (1) (b).	Rs. 5 per qtl. of resin.
(e)	On application for permit under Section 5 (1) (c)	Re. 1 per qtl. of resin.
(f)	On application for permit under Section 5 (1) (d)	Re. 1 per qtl. of resin.
(g)	On application for registration of tapper of resin under Section 10.	Rs. 5 per annum.
(h)	On application for registration of a manufacturer of resin product under Section 10.	Rs. 25 per annum.

19. The amount of fee specified in Rule 18 may be deposited either in cash in the office of the Divisional Forest Officer, or may be deposited in Treasury by means of a challan under the relevant head.
20. Notwithstanding anything in the above rules, the State Government may exempt any class of resin product or resin from the provisions of the rules or fees levied thereunder.

The Schedule [See Rule 3]

	Purpose for which the officers are being authorised	Who shall be the authorised officer
	(1)	(2)
1.	For the purposes of Cl. (b), (c) and (d) of Section 4.	Range Officer within whose jurisdiction, a resin depot is situate.

	Purpose for which the officers are being authorised	Who shall be the authorised officer
	(1)	(2)
2.	For the purposes of Cl. (e) of Section 4.	Divisional Forest Officer within whose jurisdiction the place where the resin products are manufactured is situate.
3.	For the purposes of Rule 6 (a), (b) (ii) and (d) pertaining to Section 5.	Divisional Forest Officer within whose jurisdiction the resin is, for the time being stored.
4.	For the purposes of Rule 6 (b) (1) pertaining to Section 5.	Range Officer/Depot Officer in whose jurisdiction the resin is for the time being stored.
5.	For the purposes of Cl. (c) of Section 5.	Divisional Forest Officer through whose jurisdiction, the resin shall pass through for the first time in Uttar Pradesh.
6.	For the purposes of the proviso to Section 8 (1)	Range Officer under whose control the resin depot, where the resin is offered for sale comes.
7.	For the purposes of sub-section (5) of Section 8.	Range Officer within whose jurisdiction the resin depot concerned is situate.
8.	For the purposes of Section 9.	Divisional Forest Officer within whose jurisdiction the trees required to be tapped for resin are situate.



Ganesh Datt Joshi is a Graduate (B Tech) in ECE and has MBA degree in Operations Management.

He is an ex-servicemen, who has served in Indian Navy as Junior Commissioned Officer w.e.f 02 August 2000 to 28 Feb 2018 and worked as Section head of Radars and Navigational Equipments. He has worked as senior most JCO of Electrical department onboard warships for 7-8 years and along with his core technical work, he was responsible for human resource management of the department. He has also worked as Assistant Electrical Officer Onboard various warships of Indian Navy and handled material/ spare management work of the department. He is formally trained in leadership and management skills before handling the supervisory and management duties.

He has also worked in Indian Space Research organization (ISRO) w.e.f 04 April 2019 to 12th April 2022 as Technical Officer and worked as section-in-charges of weather rocket launcher Rohini-300 (RH-300) and Rohini-200 (RH-200), while posted at Thumba Equatorial Rocket Launching Station (TERLS) in Vikram Sarabhai Space Centre at Trivandrum. He has launched around twenty four RH-200 rockets from TERLS and was also associated with launching activities of various PSLV and GSLV missions at Satish Dhawan Space Centre, the primary spaceport of the Indian Space Research Organisation, located in Sriharikota, Andhra Pradesh.

He has joined Uttarakhand Provincial Forest Services on 13th April 2022. Having more than 20 years of diverse experience in various central Government Organizations with a very good sportsmanship spirit and positive attitude, he devoted towards environmental betterment, conservation of bio-diversity and ecological development for the overall growth of Uttarakhand Forest Department.