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### RESEARCH ARTICLE

#### RED SANDERS INVISIBLE ACTIVITIES IN CHITTOOR DISTRICT: A CASE STUDY.

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#### Abstract

**Introduction:-** Red Sanders is an important species exclusive to India, Chittoor district in Andhra Pradesh is a natural hub of Red Sanders growth and various activities. It is one of the highest reported items of invisible trade in the daily news papers. The attraction in the foreign markets and the legal restrictions in the country make it a highly coveted item in the invisible International market. This paper discusses the above issue in relation to status and operations of RS activities in Chittoor district, highlighting the role of the Government in protection and development of RS.

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#### INTRODUCTION

Red Sanders (RS) are found only in south India, especially in Andhra Pradesh and in the borders of Andhra Pradesh adjacent to the states of Telangana, Tamil Nadu and Karnataka. Red Sanders is an endemic species of Rayalaseema region consisting of Kadapa, Kurnool and Chittoor districts and a part of Nellore District [1].

It is also known as Red Sandalwood and 'Lal Chandan' or 'Rakta Chandan' in Hindi. Red Sanders is a species of *Pterocarpus* native to India[2]. This species is in high demand for its characteristics wavy grains and other commercial values, particularly in foreign markets. Due to these reasons Red Sanders is subjected to smuggling. This factor is responsible for degradation of the Red Sanders bearing areas [3].

Kadapa and Chittoor district have mostly the hilly terrain containing the major habitation of Red Sanders. RS is one main and lucrative market for smugglers, as a high price is paid for this wood in other countries. The underground market and the export of Red Sandalwood within the country is growing and there are a number of arrests of smugglers every year, of those trying to smuggle this wood to other countries [3].

##### Chittoor District:-

Chittoor district is situated between 12-37" to 14-8" of Northern Latitude and 78-33" to 79-55" of Eastern longitude. The districts is bounded - on the North by Kadapa district, in North-West by Ananthapuram district, in the North-East by Nellore district, in the West by Karnataka State and in the South by Tamilnadu State [1].

##### Importance And Utility Of Red Sanders:-

RS is found useful in many applications in the world. The prominent are the areas of furniture, health, beauty and some industrial areas.

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### 1. Historical ethos and furniture

Red Sanders is prominently utilized in making furniture and handicrafts in China and musical instruments in Japan. The wood has been historically valued in China, particularly during the Ming and Qing periods, referred to in Chinese as zitan and spelt tzu-t'an by earlier western authors such as Gustav Ecke, who introduced classical Chinese furniture to the west [5]. It has been one of the most prized woods for millennia. King Solomon was given a tribute of logs of Almug (Red Sanders) by the Queen of Sheba. In Sanskrit valgu means very beautiful. Due to its slow growth and rarity, furniture made from zitan is difficult to find and can be expensive. Between the 17th and 19th centuries in China the rarity of this wood led to the reservation of zitan furniture for the Qing dynasty imperial household. Raktha Chandan, the Indian word for Red Sandalwood which is Tzu-t'an, are linked by etymology. The word 'tan' in Chinese is a perfect homonym of "tan", meaning cinnabar, vermilion and the cognition is suggested by the interchange of 'chan' for 'oriflamme', the vermilion ensign of the ancients. Chinese traders have been familiar with Chandan. Tzu-t'an then was the ancient Chinese interpretation for the Indian word chandan for red sandalwood.

### 2. Medicine & health

Red Sandalwood Powder has been used in Ayurvedic medicine as an antiseptic, as a wound healing agent and for anti-acne treatment [8].

A decoction of the fruit is used as an astringent tonic in chronic dysentery. An infusion of the wood is used in the control of diabetes [10]. The wood of Red Sanders is considered astringent, tonic and diaphoretic [4]. It is useful in bilious affections and skin diseases.

The wood is bitter in taste with a flavour, which is anthelmintic, aphrodisiac, and alexiteric useful in treating vomiting, thirst and eye diseases [4]. It cures diseases of the blood vata and kapha, mental aberrations and ulcers [11]. The lignan isolated from the heartwood is known to inhibit tumour necrosis, factor alpha production and T-cell proliferation. The heart wood contains isoflavone glucosides and two anti-tumour lignans, viz., savinin and calocerdrin [10]. RS might increase the loss of body water through the urine (diuretic effect). It might also have drying effects that may help reduce diarrhoea and break up mucus to make it easier to cough up [9]. A paste of the wood is used to give cooling effect, applied externally for inflammation and head-ache [10].

### 3. Beauty

Red sandalwood has many uses for hair, feet, skin and a variety of ailments. It helps to promote a clean and clear skin tone, and maintain a good complexion [13].

Red Sandalwood Powder can be made into a paste with honey and water and used directly on the face. It can also be combined with ashwagandha and cosmetic clays or mud for a detoxifying facial. Red Sandalwood Powder is used in soap to yield a dark maroon to purple colour. About one teaspoon of Red Sandalwood Powder per pound of soap is recommended.

Red Sandalwood powder combined with turmeric and water is made in to a paste. As a night time treatment, the paste can be applied on pimples. A small piece of camphor can be added to the formula for a cooling affect. Pimples fade away within a few days. Combining coconut oil, almond oil and sandalwood powder makes a great toner. The combination can be applied to all of the exposed parts on face. The toner keeps the skin tone balanced. This combination can also remove an unwanted suntan. Red Sandalwood can be used for massage, reflexology and cosmetics. The cooling effect of red sandalwood calms the skin. If skin suffers from uncomfortable irritated symptoms, sandalwood oil can be applied to sooth. To make domestic red sandalwood oil, red sandalwood powder can be added to favourite oil and allowed to settle overnight. Sandalwood powder and green tea mask can be added to get rid of wrinkles and sun induced aging. One table spoon of powder and enough green tea water can be added to make a paste. It tightens the pores and the natural anti-oxidants help improve the signs of ageing [13].

### iv. World Demand And Supply Trends

Exports of red sandalwood from India to Europe commenced in the seventeenth century, primarily for textile dyeing but there was some demand also for the timber. Around 1880, exports averaged 3,000 tons per annum with the UK as the major importer. By 1900, exports and usage of red sanders as a textile dye had effectively ceased owing to the competition from synthetics.

In the 1930s, Japan commenced to import Indian red sandalwood for the manufacture of the traditional "shamisen" musical instrument and this market remains important even today at a level of several hundred tons per annum. Demand by Japan for " wavy grain" quality timber resulted in significant illegal and destructive exploitation of the wild resource in the 1950s and 1960s and controls were imposed on trading[13]. In Europe, red sandalwood extract has a long history of use as a red colorant for fish processing, e.g., in pickled herrings. More recently, interest has been shown by the food industry to expand the range of applications. In the European Community, RS extract is presently classified as a spice extract and thorough toxicological testing may be demanded by the regulatory authorities before reclassification to food colorant status with an enumber [7].

Exports of red sandal powder from India averaged 50 tons annually between 1988-1993. The major importers have been Japan, China (Taiwan province) and Western Europe.

### Red Sander Distribution In Chittoor District

Chittoor district has about 294 thousand hectares of forest area. Of this about 77 thousand hectares bear RS. A major portion that is 58 thousand hectares of the bearing area is under protected area category and rest is outside the protected area.

**Table 1:-**Distribution of Red Sanders bearing areas in Chittoor, Thirupati Circle

Sl.No	Name of the Division	Total Forest Area	R.S. bearing Area	Red Sanders bearing area	
				In Protected Area	Outside Protected Area
1	WLM Tirupati	68,738	58000	58000	NIL
2	WL Chittoor East	225,000	19500	NIL	19,500
<b>Total</b>		<b>293,738</b>	<b>77,500</b>	<b>58,000</b>	<b>19,500</b>

Source: NDF Report, ICFRE, Coimbatore

### Andhra Pradesh Forest Department:-

The state of Andhra Pradesh consisting of 13 districts, contains eight forest Circles. Each Circle has 4 to 7 Divisions and each Division contains 3 to 6 wild Ranges. Chittoor district has two Divisions, the west and East. The west comes under Ananthapur Circle and the east comes under Tirupati Circle.

Chittoor District has 12 forest depots, of this 10 are range depots and two divisional depots, one each located in the west and eastern Divisions in Bhakarapet and Tirupati area respectively. There are three Range depots in the western Division and seven in the eastern region. The quantity of Red Sanders stored and contained in all the depots of Chittoor district is depicted in the table number 2.

### RS stock:-

**Table 2:-** Red Sanders stock available in Red Sander Godowns in different ranges of Chittoor District in 2012-2013  
(Quantity in Tons)

DEPOTS	DIVISION DEPOS (I)	RANGE DEPOS (II)	MATERIAL SOLD NOT LIFTED (III)	I+II+III
I.Bhakarapet –Depot	300.086		267.091	567.177
1. SVNP, Tirupathi		54.412		54.412
2. SVNP, Blapalli		34.266		34.266
3. SVNP,Chamala		168.725		168.725
Sub-Total	<b>300.086</b>	<b>257.403</b>	<b>267.091</b>	<b>824.581</b>
II. Tirupathi	623.695		841.318	1465.013
1. Chittoor East		19.565		19.565
2. Karvetinagar		9.598		9.598
3. Piler		13.928		13.928
4.Satyavedu		7.423		7.423
5.Srikalahasthi		3.039		3.039
6.Puttur		1.827		1.827

7.Tirupathi		75.229		75.229
<b>Sub Total</b>	<b>623.695</b>	<b>130.609</b>	<b>841.318</b>	<b>130.609</b>
<b>Grand Total</b>	<b>923.781</b>	<b>388.012</b>	<b>1108.409</b>	<b>2420.203</b>

Source: WLM Circle, Tirupati

The district has about 2,420 tons of RS in 12 depots. Of this about 1,108 Tons of RS wood material was sold and it was not lifted by the purchasers. The two Divisional depots contain a major collection of 924 tons while the 10 range depots have 388 tons of RS wood.

#### Red sanders cases booked:-

**Table-3:-** Booking Of Red Sanders Cases For The Period From 2003-04 To 2012-13 In Andhra Pradesh

YEAR	No. of Cases	Quantity of Red Sanders seized (in M.Ts)	Value in Rs. Lakh	No. of vehicles seized	No. of persons arrested
2003-04	384	649.406	285.738	111	233
2004-05	185	238.100	104.764	89	228
2005-06	316	431.221	189.737	127	224
2006-07	397	476.766	209.777	199	290
2007-08	298	421.669	185.534	186	268
2008-09	202	180.471	79.407	68	109
2009-10	191	153.636	67.599	87	236
2010-11	385	286.879	126.227	194	533
2011-12	652	574.980	252.991	409	1,364
2012-13 (upto 30.11.2013)	555	565.286	254.379	416	1,591
<b>TOTAL(Combined Andhra Pradesh)</b>	<b>3,743</b>	<b>4,182.846</b>	<b>1846.102</b>	<b>1,933</b>	<b>5,142</b>
2014	1,464	8433.08		1,006	3,659
2015	757	446.53		473	3,284
2016	537	313.87		368	2,057
<b>TOTAL(AP)</b>	<b>2,758</b>	<b>9,193.48</b>		<b>1,847</b>	<b>9,000</b>

Source: Andhra Pradesh Forest Department

There are efforts by the State Government to curb smuggling. The number of cases booked over the years had been rising. Data is provided from the year 2003-04 to 2012-13 for the combined state of Andhra Pradesh including Telangana. For the years 2014, 2015 and 2016 the data is for the newly demarcated State of AP.

The number of cases booked is on the rise from 384 in 2003-04 to a peak of 1,464 in the year 2014. The quantity of RS seized had been fluctuating over the period. The highest reported seizure in 2014 was more than the total seizer's of the all the years. This is a remarkable observation.

The efforts of a newly divided State contributed for rigorously in a large amount of seizers and bookings. The number of vehicles seized ranges from a minimum of 68 to 1,006 in the year 2014. Similar is the situation in the number of person arrested peaking to 3,659 in the year 2014. A reduction in the bookings accounted in the years 2015 and 2016 is a trend to be reconsidered in many angles. Does it reflect a reduction in the intensity of smuggling quantum has to be assessed.

Booking of RS cases in Chittoor district reported for the years 2014, 15 and 2016 is available.. There is predominance of the District. Of the total quantity of 9,193 metric tons seized in Andhra Pradesh, in the three years, Chittoor district accounts for 8,461 metric ton, coming to 92% of the seizures.

**Table 4:-** Booking Of Red Sanders Cases For The Period From 2014 To 2016 In Chittoor District

YEAR	No. of Cases	Quantity of Red Sanders Seized (in M.Ts)	No. of vehicles seized	No. of persons arrested
2014	687	7958.68	529	1,883
2015	394	247.86	274	1,829
2016	386	254.45	241	1,370
<b>Total</b>	<b>1,467</b> <b>(53%)</b>	<b>8,460.99</b> <b>(92%)</b>	<b>1,044</b> <b>(56%)</b>	<b>5,082</b> <b>(56%)</b>

**Source:** AP state government (numbers in %ge refer to share of Chittoor district in AP)

#### Causes For Smuggling:-

Red Sanders is a very slow growing tree reaching harvestable size even in natural forests only after 25 – 40 years of rotation.

There is demand only for red coloured heart wood with wavy grain. Trees develop red coloured heart wood and wavy grain only under the harsh rigorous conditions of soil and weather in natural forest. Trees grown in artificial plantations may not develop red coloured heart wood with wavy grain. They may develop white sap wood that does not have market.

The wood has value only in export market for making musical instruments like Shamison, furniture, wooden cabinet etc.

Farmers go for mixed cultivation of Red Sanders in irrigated lands. They have to wait for very long periods with uncertainty of expected huge income. If the farmer goes for plantation along the periphery of or in un-irrigated lands, RS survives in a similar way as it is in the forests. The uncertainty is not a big issue since it becomes a smaller part of total farming.

In India there is no domestic demand for Red sanders tree. The local demand for the wood as today is only for making turnery items like toys in India. Red Sandalwood craft is quite popular in China. The wood costs Rs. 3 – 5 lakh per ton in India, whereas in China the cost is Rs 30 lakh to Rs 100 lakh per ton [14].

The hardship and uncertainty in cultivation of RS, the attraction of extremely good RS in the wild, very lucrative export market and the lawfully restricted market; make RS a very dear item. It is one of the highest reported items involved in smuggling in the country & especially in south India as reported in the daily newspapers [14].

#### Invisible Trade Process:-

The covert trade & smuggling activities process of red sanders can be classified in to five stages [6].

**Stage 1:-** Certain traders/middlemen on behalf of the traders stationed mostly at Chennai contact some middlemen in places like Tirupati, Chittoor, Rajampet, Nellore, Kadapa etc., and pay them advances to organize cutting of wood from the Forests of Andhra Pradesh.

**Stage 2:-** The Middlemen contact the locals and pay them advances to enter the Forest, for cutting Red Sanders trees and bringing the timber logs from the Forests. The locals are paid by weight and the rate varies anywhere from Rs. 50/- to Rs. 300/- per Kg based on the market demand. At present the fellers are engaged from Tamilnadu State. Due to intensification of protected measures, they are deploying fellers in a large number to carry out the smuggling operation within a short period of a day.

**Stage 3:-** The Middleman arranges for storage of the Red Sanders wood in secluded places and periodically shift the stock to avoid detection by the Forest Department staff and the Police. In most of the cases the logs are moved out from the forest areas within hours after felling.

**Stage 4:-** The middleman then organizes transport of Red Sanders logs normally concealed (under some agricultural produce, husk, dung, vegetables etc.,) and transport to Chennai or other places close to ports by road. During transportation, stolen vehicles with false registration number plates are used. The driver of the vehicle, who is

usually hired from local market, has no knowledge about the contraband or about the owner of the material. Before the wood reaches its final destination several drivers are changed.

**Stage 5:-** The Red Sanders material either in log form or in converted form is transported to various destinations within the country or outside the country in containers by misdeclaration or hidden with other material.

Sometimes the smugglers procure small quantities of Red Sanders wood legally from private patta lands from A.P. and subsequently substitute bulk quantity illegally from various groups involved in regular smuggling of this wood from A.P. forests. Smuggling groups have accomplices with other groups who are under the garb of export-import business, get permission for factory/home stuffing under Central Excise supervision of goods like blended black tea, beauty cream, chillies, salt bags, marble slabs etc. After stuffing, the sealed containers are moved to the port. En-route to the Port the stuffed export goods are replaced with contraband Red Sanders. The smugglers reportedly remove the doors hinges or use forged seals to accomplish this task of smuggling of RS wood which is reportedly taking place through Chennai, Calcutta, Tuticorin, Cochin and Kandla i.e. through all major ports of the country.

Recently, the smuggling of wood has also been reported through Myanmar border. In order to change the identity and origin of the Red Sanders wood while in transport, the Red Sanders wood is also being transported to Nepal clandestinely and then exported through Calcutta port in guise of different wood originated in Nepal, where Red Sanders is not grown.

#### **Government Interventions:-**

The Forest Department of AP has many interventions to regulate and protect Red Sanders. The important interventions are highlighted [1, 13]:

1. **Base camps:-** Base camps were established in vulnerable forest areas, where Forest front line staff and some protection watchers stay continuously in the forest to prevent felling of Red Sanders trees. Each base camp constitutes one forest subordinate and 4 to 6 tribals. Presently there are 29 base camps in the Circle. After setting up of the base camps, there is a significant improvement in prevention of felling of Red Sanders trees.
2. **Strike Force and Mobile parties:-** Strike force parties have been constituted at six places, two the each in Chittoor East Division, Tirupati WLM Division and Rajampet Division, for patrolling the routes to control the transport of contraband Red Sanders wood.
3. **Strengthening check posts:-** Action has been initiated to strengthen the existing check posts by placing ex-servicemen/Tribal watchers. Simultaneously new check posts are being put in some places in order to check illicit transport of Red Sanders. At present, 27 check posts are functioning in the Circle viz., five in Tirupati WLM, ten in Chittoor East and twelve in Rajampet WL areas.
4. **Forest Stations:** Unused buildings/quarters of the Forest Department have been repaired and forest stations were setup in these buildings. These forest stations serve multiple activities as nodal points for all kinds of security operations. Forest stations are functioning at 16 places, the people feel presence of the Department and there is a tremendous improvement in information network regarding Red Sanders smuggling. They are camping points for forest station officials and protection staff, has centre for information gathering on smuggling activities, as investigating cell & finally as centre for material reception storage and supply.
5. **Armed Parties:** Six armed parties from the Police Department have been deputed to assist the forest divisions. The armed parties have been placed at four points, viz Chittoor East, Rajampet, WLM Tirupati and Flying Squad Division Piler. Two Armed Parties in most vulnerable Red Sanders areas of Chamala valley were further strengthened by increasing the personnel to 25 and deployed the at strategic locations to have a round the clock watch and ward.
6. **Boat Squad:** A Boat squad is in operation under the control of Forest Range Officer of Rajampet WL division in Somasila back waters. This is helpful in protection of forests of four Divisions. This Boat Party is instrumental in booking 28 cases, with seizures of about 49.58 M.Ts. of Red Sanders, 10 boats and arresting of 40 persons from April, 2008 to till November, 2012. It is reported that smuggling operations in Somasila back waters have come to a standstill after launching of this Boat squad.

7. **Publicity measures:** Publicity measures have been initiated from February, 2008 in order to prevent the incidence of Red Sanders smuggling and forest fires. The measures taken up are:
1. Wall writings.
  2. Publicity vans with Audio Visual materials
  3. Dandora (Tom-Tom) in villages
  4. Leaflets
  5. Pasting posters and stickers at prominent places
  6. Publicity boards.
- For publicity vans, at rate of one for each Division is functioning in the Circle

#### **Other Initiatives:-**

In the recent years there are many initiatives taken by for curbing the Red Sanders smuggling activities:

1. The information network was strengthened by expanding and intensifying it.
2. **Coordinating with Police Department:-** Coordination meetings were conducted with the Superintendents of Police, Chittoor District and Tirupati Urban and also Deputy Inspector General, Ananthapur Range to take necessary steps to prevent the Red Sanders smuggling and for arresting the kingpins in the smuggling racket.
3. **Sharing of information with Directorate of Revenue Intelligence (DRI):-** The smuggling activities are discussed with the DRI authorities in Chennai, during the Multi- Disciplinary meeting in Chennai.
4. **Coordinating with Tamilnadu Forest Department:-** Coordination meetings are conducted with the Forest Department of Tamilnadu state and discussed to take necessary steps to prevent the Red Sanders smuggling and for arresting the concerned in Tamilnadu involved in the smuggling racket.
5. **Combing operations:-** Combing/ search operations are carried regularly by forest and police officials to curb clandestine operations and to drive away smugglers who are inside the forest area. During this process Red Sanders logs are also seized.
6. **Naakabandi:-** Naakabandi is conducted under the aegis of Addl.Pr. Chief Conservator of Forest with the supervision of Divisional Forest Officers.
7. **Control Room:-** The control room is in operation in Wildlife Management Division, Tirupati for gathering information about Red Sander, hunting and Forest fires.

#### **Conclusion:-**

Red Sanders have a good demand in foreign countries. It is used in medicines, handicrafts and making furniture. To restrain smuggling a collaborative legal mechanism was designed. In spite of that smuggling goes unrestrained and might be growing at an increasing rate. There should be opportunity to liberalize the regulations, so that domestic utilization of Red Sanders is facilitated by creating entrepreneurial activities; there by increasing the economic activity and on the other side utilizing Red Sanders at sustainable level. Farm management practices should have an important slot in the sustainable process.

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