

# VANA PREMI



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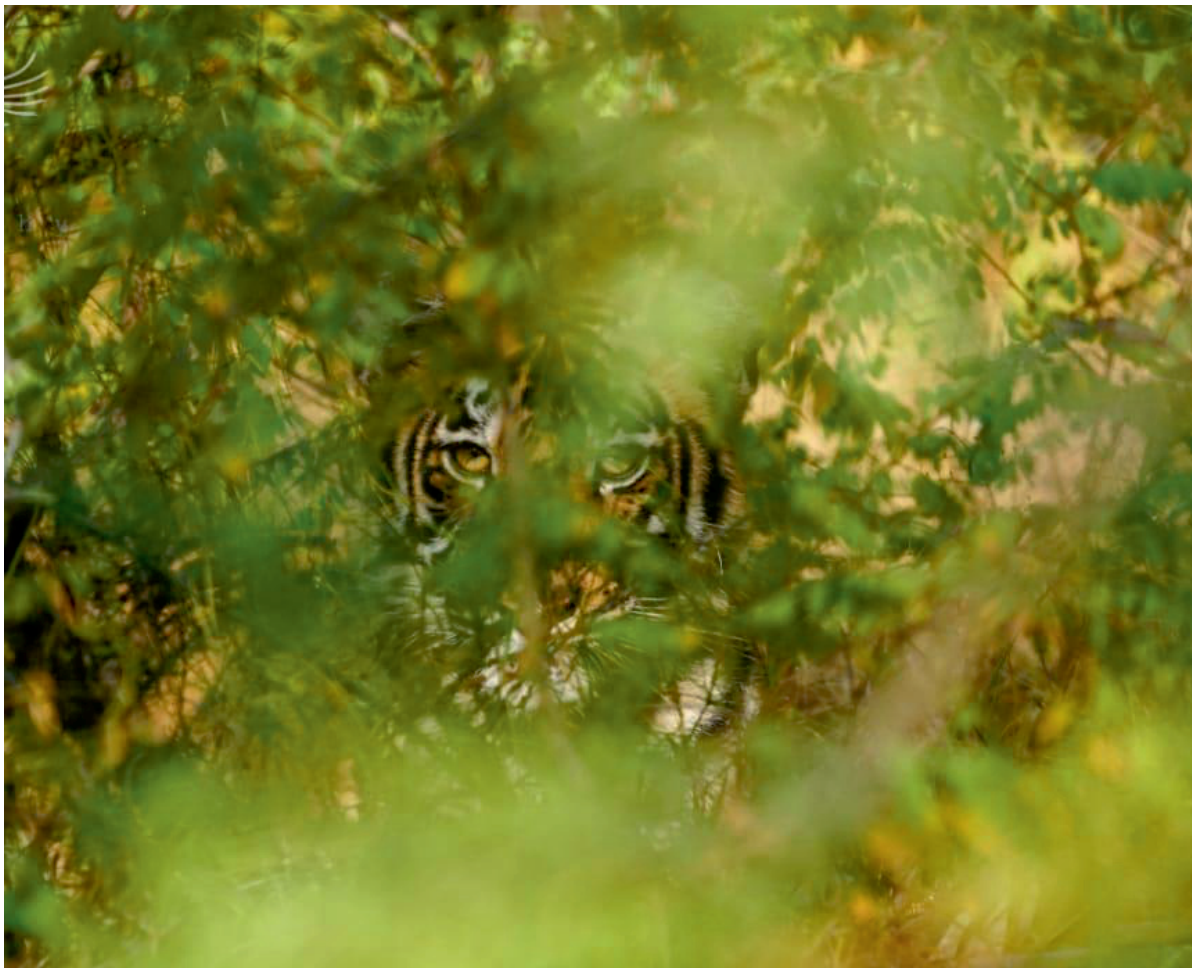


Photo by Sri Indram Nageshwar Rao, Founder President of Orugallu Wildlife Society.

**“I am watching you” said the tiger to human beings.**

JOURNAL OF THE ASSOCIATION OF RETIRED FOREST OFFICERS, TELANGANA & ANDHRA PRADESH  
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- Large grower of about 26,809.00 Ha. of Eucalyptus clonal / seed origin plantations. Bamboo also grown as an important crop over 6,405.00 Ha.
- The TSFDC has also taken up the challenging task of Eco-Tourism development in the State. Already made open to public – Hyderabad Botanical Garden, Pala Pitta Cycling Park near Hi-Tech City, Madhapur, which has received the ISO 9001:2015 certification on 16-10-2019. Effective SMC measures for recharging pond water and improving surface water taken up in association with Smaran NGO. Mahavir Nischal Van Eco-Tourism Centre, Vanasthalipuram, and Mrugavani National Park at Chilkur are attracting increasing number of visitors.
- TSFDC is also developing Urban Parks in Lagadi Malakpet RF Cluster, Thumukunta RF & Gowdelli PC Kalan & PC Khurd Cluster. Sankalp Taru NGO is collaborating with TSFDC in improving greenery at Gowdelli Park.
- TSFDC has also taken up consultancy work for NTPC and RFCL and successfully raised multiple Row avenue plantation along Rajiv Rahadari highway in peddapally Dist.
- Dhanvanthari herbal garden is revived with support from Deloitte and Technical support of environment forest solutions.

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## Editorial

**India—A Land of Unity in Diversity:** India is a vast country, mixture of various cultures that includes umpteen variations in food, clothing, language, music and religious beliefs. This colourful spread has been shaped by the long history and unique geography of this land. Though cut off from the world by three oceans and the highest chain of mountains, this peninsula has been invaded time and again through the almost inaccessible mountain passes. Being a diverse civilization, India is a land of myriad tongues with over 1650 spoken languages and dialects. Despite of different cultures, religions and languages, people of India live together in a spurt of love and brotherhood. The immense unity in diversity makes India an example of cultural fraternity. The diversity of India's languages can be understood by the fact that the Indian currency has 15 languages, besides Hindi and English, printed on it, which is not found anywhere else throughout the globe, and most sign boards are written in English, Hindi and in various state local languages.

India is one of the most religiously diverse nations of the world with each individual free to follow his own religion and beliefs. Each and every region of the country from Jammu & Kashmir to Kanyakumari portrays different customs and traditions. Since ancient time, the people of India have been living together and respecting all religions and cultures. In short, India is “the epitome of the world”. The vast population is composed of people having diverse creeds, customs and colours.

Clothes have always been fashioned by necessity. While loose, light clothes are worn in the hot and humid southern India, the cold northern regions like Kashmir, has its inhabitants wearing woollen clothes almost round the year. The desert areas of Rajasthan

and Gujarat have people wearing colourful clothes. In contrast, people of the lush green eastern regions are known for their preference for lighter colours.

Besides a host of stitched clothing India is perhaps the only country where unstitched clothes like the sari, lungi, dhoti and turban remain popular items, with only exception of Saudi Arabia. Wearing or putting on unstitched cloth is also seen in some of the neighbouring countries which I believe were once a part of India. In Mecca of Saudi Arabia during Haj and Umrah males put on unstitched white cloths, which is a must and known as Ihram.

The landscape which includes dry deserts in Rajasthan, snowy mountains in Himalayas, fertile plains and evergreen forests in the rest of the country, hosts a unique ecosystem which is rich in great variety of flora and fauna. The lofty Himalayas are an imposing contrast to the low, flat plains spread at its feet. And the rugged Deccan area is a far cry from the hot marshy areas of the Sundarbans delta.

Indian cuisine is so very diverse and versatile, that it is practically impossible to know and taste all the dishes prepared in the country. If the northern people are predominantly wheat eaters, the rest of India are avid rice eaters. Whilst seafood is an essential part of the coastal meal, there are numerous people who do not eat anything but vegetables and fruits. The meals cooked, depend upon the available raw materials, cooking traditions and local spices. Cooking oil used to cook food varies from north to south and east to west.

India is also known for different types of spices found here which were exported by the earliest of traders throughout the globe. The variety of spices available in the different regions of India to name a few are Tulsi – Basil, Tej Patta - Bay Leaf, Kali Mirch



- Black Pepper, Hing – Asafoetida, Kala Namak  
 - Black Salt, Elaichi – Cardamom, Ajwain - Caram seeds or Celery seeds, Dalchini – Cinnamon, Laung – Cloves, Dhania – Coriander, Kadi Patta - Curry Leaves, Jeera or Zeera - Caraway seeds, Amchur - Dry mango powder, Saunf – Fennel, Adrak Powder - Ginger powder, Amla Powder - Gooseberry , Lahsun Powder - Garlic Powder, Javitri – Mace, Joy phal- Nutmeg, Sarson - Mustard seeds, Pudina – Mint, Haldi – Turmeric, Imli – Tamarid, Til - Sesame seeds, Gulkhand - Rose Petal conserve, Sendha Namak - Rock Salt, Anar dana - Pomegranate seeds, Kesar – Saffron and many more. Each spice is also known for its curative property.

Sweet dishes prepared from milk, sugar, Jaggery and coconut are commonly found in all regions, in their local variations. If Maharashtra and Gujarat are known for its Shrikhand, Punjab is famous for its Halwa. Bengal of course is world famous for its variety of milk-based sweets like Rass gullas.

Years of foreign rule have not been able to wipe out the festivals that are a prominent part of our culture. Major festivals are celebrated all over the country with equal fervour, but there are thousands of other festivals that are locally celebrated with great enthusiasm. India is very famous for a greater number of holidays for observation of these festivals when compared to any other country

If the cities of India portray the modern India with technological hubs in Bangalore, Hyderabad, Delhi, Calcutta, Mumbai, to name a few, the remote areas still preserve a rich and varied tribal population in many Indian states. To name a few, Hill reddiees, Nayakpodes, Gonds, Bhils, Santhal, Khasi, Garo, Angami and Munda Tribes.

Throughout the year Indian New Year's Days are celebrated in different regions of our country. Observance is determined by whether the lunar calendar is being followed or the solar calendar.

We know that Gregorian New Year starts on first January every year, but readers may know that in our country, various Indian new years are also celebrated in different months of the Gregorian calendar. In the month of March New year is celebrated in Uttar Pradesh, Bihar, Madhya Pradesh, Jammu, Jharkhand and Chhattisgarh which is known as Holi . In Arunachal Pradesh it is known as Losar and celebrated in February. Ugadi falls in March/April which is celebrated as New Year's Day in the States of Andhra Pradesh, Telangana Karnataka, Maharashtra, Konkani (Goa). In Punjab it is called as Baisakhi and in Manipur it is known as Sajibu Cheiraoba. In Assam it is known as Bohag Bihu It is observed in these regions on the first day of the calendar month of Chaitra. It is called Gudi Padwa in Maharashtra and Goa. The name Yugadi or Ugadi is derived from the Sanskrit words yuga means age, and ādi means beginning: «the beginning of a new age» or beginning of a new year. Ugadi falls on the first day of the bright half of the Indian month of Chaitra. This generally falls in late March or early April of the Gregorian calendar.

The people of Karnataka use the term Yugadi and the people of Andhra Pradesh and Telangana use the term Ugadi for this new year festival. It is celebrated as new year almost at the same time in Kashmir and known as Novreh. Sindhis observe new year day in March/April and call it as Cheti Chand. Parsis celebrate their new year in March which is known as Nouroz, meaning new day. In Odisha it is celebrated in April and known as Pana Sankranti. In Bihar it is known as Jude Sheetal celebrated in April. In west Bengal it is known as Pehli Baisakhi and celebrated again in April.

On Ugadi a dish known as "Pacchadi" is prepared which is festive dish symbolically reminds the people that the following year – as all of life – will consist of not just sweet experiences, but a combination of sweet, sour, salty, and bitter episodes. Just as the

different substances are bound together, one is reminded that no event or episode is wholly good or bad. Even in the midst of bitter experiences, there are sweet moments. One is also reminded that the experience of taste is transitory and ephemeral; so too, is life, and one has to learn to put pain and pleasure in proper temporal perspective.

In Kutch area of Gujarat New Year is celebrated in the month of June/July and known as Ashadi Bij. In the rest of Gujarat and Rajasthan it is celebrated in the month of October/November as Bestu Baras. Chingam month (August – September), also known as Chinga Masam, is the first month in the traditional Malayalam calendar followed in Kerala. Chingam month begins on August 17. The first day of Chingam month marks the beginning of the New Year according to the Malayalam calendar and is locally referred as Andu Pirappu. The month ends on September 16. Onam, Sri Krishna Jayanti and Ganesh Chaturthi are observed in this month. Numerous marriages are also held in this auspicious month in Kerala.

Tamil people celebrate Puthandu, also called Puthuvarusham, as the traditional “Tamil New Year”. This is the month of Chittirai, the first month of the Tamil solar calendar, and Puthandu typically falls on 14 April. In Ladakh New Year is celebrated in December and known as Galdan Namchot.

Islamic New Year is celebrated throughout the globe, including in India on the first day of the month of Moharram of the Arabic calendar. This year it will be falling on 10th of August.

The readers might be surprised to see the large number of India's New Year days which are celebrated in our Country, but this is a fact. In short, the variations of India's cultural diversity are strung together with a colourful string of peace and harmony. It is a matter of pride that this vast diversity of India never mars its unity. India, is indeed, an embodiment of ‘unity in diversity’. We Indians have every reason to feel proud to be Indians.

Vana Premi wishes that let all Indians remain united & together as we are, and work for the progress and development of our great country in all fields. **QMK**

*Save wetlands because wetlands help control floods.*

☆☆☆

*The wetlands are responsible for a very diverse ecosystem and the ecosystem will be spoiled if the wetlands ceased to exist.*

☆☆☆

*Wetlands can be described as an important bridge between the lands and the water and hence is important to both life terrestrial life and aquatic life.*

## **We Are Running Out Of Ground Water In India**

**By**

**UMA SHANKER SINGH, DSc**

India is suffering from the worst water crisis in its history and millions of lives and livelihoods are under threat. Currently, 600 million Indians face high to extreme water stress and about two lakh people die every year due to inadequate access to safe water. The crisis is only going to get worse. By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual ~6% loss in the country's GDP. As per the report of National Commission for Integrated Water Resource Development of Ministry of Water Resources, the water requirement by 2050 in high use scenario is likely to be a milder 1,180 BCM, whereas the present-day availability is 695 BCM. The total availability of water possible in country is still lower than this projected demand, at 1,137 BCM. Thus, there is an imminent need to deepen our understanding of our water resources and usage and put in place interventions that make our water use efficient and sustainable. Groundwater, which has been steadily depleting for years, makes up 40% of the country's water supply. But other sources are also running dry -- almost two-thirds of India's reservoirs are running below normal water levels, the country's Central Water Commission said in June. But many fear it won't be enough. According to a UN human rights report, the world is fast approaching "climate apartheid" where only the wealthy can afford basic resources in the face of fatal droughts, famine and heat waves. In some places in India, disaster has already arrived. The four reservoirs that supply Chennai, India's sixth-largest city are nearly dry. Hundreds of thousands of residents wait in line each day to fill their pots at government water tankers, and critical services like hospitals and schools are struggling. People are forced to wash utensils in the same dirty water,

saving a few bottles of clean water to cook food. As per the Central Water Commission, 85.3 % of the total water consumed in India was for agriculture in 2000, and the figure is likely to decrease to 83.3 % by 2025. One of the prime reasons for this unregulated use of groundwater is the commercialisation of crops. The government pays the highest subsidies and rate for three of the most water-intensive crops sugarcane, rice and wheat. It is high time for the government to educate farmers about employing cropping patterns as per the availability of water. Rice and wheat, two of India's most important food crops, are the most water-intensive. According to a report by water aid, producing a kilogram of rice requires an average of 2,800 litres of water, while a kilogram of wheat requires 1,654 litres of water, as per a recent report by Water Aid India. Another report on groundwater resources of Punjab by the Central Ground Water Board and the state's Water Resources and Environment Directorate has found that there is over-exploitation of groundwater to meet the agricultural requirements in the state. Out of 138 blocks, 109 blocks are "over-exploited", two blocks are "critical", five are "semi-critical" and only 22 falls in the safe category. Therefore, I fail to understand that despite rice, wheat and sugarcane being intensely water-consumptive crops why central and state government are not formulating policies to change crops? This is also ironical that states with critically low groundwater reserves were responsible for 41%, or about 38.6 million tonnes of India's domestic cereal trade. This worked out to nearly 39% of India's total groundwater being used up in producing and trading cereal among States. According to a study which appeared in the peer-reviewed Environmental Research Letters, a further 21% (19.6 Mt) of domestically produced cereals



were exported from six States with 'semi critical' to 'critical' groundwater status equivalent to 32% of groundwater. Trade patterns varied between PDS (Public Distribution System) and non-PDS cereals. The majority (58%; 58.0 Mt) of interstate cereal trade occurred through the PDS. The total volume of embedded water traded through PDS rice and wheat amounted to 54.3 cubic km of green water (Green water is the water transpired by the plant that comes from rain water stored in soil) and 36.7 km<sup>3</sup> of blue water (Fresh surface and groundwater, in other words, the water in freshwater lakes, rivers and aquifers). As the main PDS contributors, the States exporting the most water through the PDS were Punjab (20.9 km<sup>3</sup>), Andhra Pradesh (12.6 km<sup>3</sup>) and Madhya Pradesh (9.9 km<sup>3</sup>). In addition, 35.8 Mt of non-PDS cereals were traded between States, corresponding to 45.1 km<sup>3</sup> of green water and 17.3 km<sup>3</sup> of blue water. 'Green' and 'blue waters' are also referred to the volume of precipitation water that is consumed during crop production, either from evapotranspiration, transpiration, or incorporated into the final crop product.

**CONSUMPTION OF FRESH WATER IN BUILDING CONSTRUCTION IN INDIA:** - Building construction is a highly resource intensive process, concerning use of materials, land, energy and water. Since buildings are required to fulfil our primary need for shelter, consumption of these resources is simply unavoidable. However, with shrinking stock of natural resources and degrading eco-system services, the consumption process has to be wise, judicious and non-wasteful but this is never looked into. The growth rate of building construction is exceedingly ambitious in India and government also sees this as a part of employment generation. A recent report titled "India Building Construction Industry Data Book Series - Market Size & Forecast (2015 - 2024)" says that the building construction industry in India is expected to record a Compound Annual Growth Rate (CAGR) of 15% to reach INR 29,782.2 billion

by 2024. The residential construction industry in value terms increased at a CAGR of 11.1% during 2015-2019. The commercial building construction market in value terms is expected to record a CAGR of 16.1% over the forecast period. There have been many studies on the consumption of fresh water in a building construction in India and this has been found to be in the range of about 27 Kilolitres/Sq. m of total built-up area. In other words, water consumed for the construction of the entire building translates into 8562021.56 KI of water, equivalent to a cube of about 205 metre side and the amount of water needed by nearly 34 families with five members each for one whole year at 138 litres per capita per day.

**THE FUTURE ROAD MAP:** - Rain fall has been erratic. Almost 40% of the population is still dependent on the "rain god", or the South-West monsoon as it is known today. About 46% of India's net sown area (land on which cultivation is done at least once a year) is irrigated. The balance 54% is un-irrigated and hence dependent on water that rains down from the clouds, mostly in the four monsoon months. Therefore, let us understand and accept that water is a grave problem. We have also to understand that 12 % of India's population is already living the 'Day Zero' scenario, thanks to excessive groundwater pumping, an inefficient and wasteful water management system and years of deficient rains. This also indicates that there is a clear disconnect between water, society and economy. Currently, we are interested in laying large networks, constructing huge storage dams, fetching water from 150 kilometres and above, which involves a huge carbon footprint. We are valuing land more than water, neglecting our local water bodies, which have either gone dry or encroached. Also, in many Indian cities, water is not properly distributed. Some areas of mega cities like Delhi and Mumbai are privileged to get more than the standard municipal water

Contd.. on page No.33

# India State Of Forest Cover Report 2019-Tree Cover Improvement Due To Horticulture & Agroforestry

By  
B.K. Singh

Forest Survey of India (FSI) has been publishing report on the status of forest cover and tree cover for all the states and union territories every two years. The latest report (India State of Forest Cover Report ISFR 2019) is released on 31st December 2019 by Minister for Environment and Forests & Climate Change Prakash Javadekar.

Forest cover includes all patches of land of more than 1 hectare and tree canopy density of more than 10%. The assessment is done through mapping exercise using remote sensing technique and ground truthing. Consequent to this exercise nationwide forest cover is shown on 1: 50,000 scale maps in three canopy density classes' namely very dense forests (VDF) with canopy density more than 70%, moderately dense forests (MDF) with canopy density 40 to 70% and open forests (OP) with canopy density 10 to 40%. Tree cover which includes all patches of trees less than one hectare is also assessed using remote sensing-based stratification and observations in the sample plots of the strata.

The forest cover of the country is 7,12,249 sq. km and tree cover is 95,027 sq. km, totalling up to 8,07,276 sq. km, which is 24.56% of its geographical area. Compared to the previous assessment i.e. ISFR 2017, there is increase of 3,976 sq. km (.56%) in forest cover and 1,212 sq. km (1.29%) in tree cover. Total increase in two years is 5,188 sq. km, which is .65%.

Karnataka has increased its cover by 1025 sq. km, Andhra Pradesh by 990 sq. km, Kerala by 823 sq. km, Jammu & Kashmir by 371 sq. km and Himachal Pradesh by 334 sq. km. These are the top five states contributing to the increase in national

cover. However, what is disturbing is that the 'forest cover' in recorded forest areas (RFA) / Green Wash (GW) areas (FSI terminology for notified forests) has suffered a loss of 330 sq. km in the country. The report also concludes that hill districts have registered an increase in the cover, whereas RFA is lowered in tribal districts. While mangroves have registered an increase, north eastern region of the country have lost the forest cover.

Mangroves have complex root system which is efficient in dissipating sea wave energy and protecting coastal area from tsunami, storm surge and soil erosion. Their protective role is widely recognized, especially after devastating tsunami in 2004. Except Gujarat, Maharashtra and Odisha, no other coastal state has added mangroves as we compare ISFR 2017. In fact, Tamil Nadu, West Bengal and Andaman & Nicobar Islands have lost mangrove tree cover. The area under mangroves in Karnataka is stagnant.

Karnataka has been planting mangrove species in coastal belt regularly, the department must investigate why mangrove plantations are not adding to the forest cover. It can be inferred that mangroves are being destroyed at the same pace it is being planted.

District wise forest cover in Karnataka is shown in table 11.13.4 in Volume II of ISFR 2019. Addition in forest & tree cover compared to the 2017 report is limited to Tumkuru, Mandya, Dakshin Kannada, Udupi and districts around Bengaluru. These are the areas where plantation crops and agro forestry is practiced at larger scale. The department must take coordinates from FSI and find out the agencies

responsible for planting forestry and horticultural crops, which has added to the forest cover in aforesaid districts and reflected in ISFR 2019.

The same table has also indicated that there is no significant addition in forest cover in Western Ghats belt. The cover has come down in districts like Shivamogga, Dharwad, Haveri and Gadag. This is also corroborated by the matrix in table 11.13.5. This table shows that 1 sq. km VDF has degraded and has been put in MDF category. 306 sq. km MDF and 1209 sq. km OF have moved to Non forest category. Fortunately, 2540 sq. km Non forests have now become forested and as a result 909 sq. km is moved to MDF and 1631 sq. km to OF. Thus, Karnataka has lost forest cover in 1515 Sq. km recorded forest areas (RFA) and gained 2540 sq. km in Agro Forestry, resulting in a net gain of 1025 sq. km. While I must appreciate the social forestry efforts of the state in promoting agro forestry, I must caution the department for losing 1515 sq. km forests, which is in their direct control, in two years' time. They must relook their plantation and protection strategies. Whole country has lost 330 sq. km of recorded forests; Karnataka alone has lost 1515 sq. km indicating that many other states have gained in RFA.

Scrub forests have remained stagnant, when ISFR 2017 is compared. The department takes up annual planting in degraded forest areas and therefore scrub forests must move to OF and MDF category. No change in extent of Scrub forests implies that plantations are partially successful and equal extents of MDF and OF are degraded in the same period. The department should re-visit their plantation program as well as protection measures.

Loss of notified forests in tribal districts across the country has been a matter of concern for more than a decade now. To claim titles tribal and other traditional forest dwellers clear tree growth in forest lands. This

action has political patronage. Even when the claims are rejected, it would be difficult to grow biodiversity rich natural forests. When the area is left fallow, invasive species like, lantana, parthenium etc take over and Forest department, at the best may succeed in growing monoculture of three four species which is no compensation to biodiversity rich forests that existed earlier. Loss of forest cover in Shivamogga and Haveri district is a direct consequence of communities clearing tree growth to enable them to claim titles.

National Statistical Office (NSO) of Union Ministry of Statistics and Program Implementation has recently released a report based on the land use and land change data generated by National Remote Sensing Centre, under National Resources Census Project. The report compares 2011-12 data with that of 2015-16 data and concludes that the forest cover has gone down from 7,25,543 sq. km to 7,17,629 sq. km, a loss of 1.09% in 5 years and the built-up area has increased from 1,18,998 sq. km to 1,21,848 sq. km, an increase of 2.39% in the same period. As against this, FSI report of 2015 indicates the increase of 0.5% forest cover in two years.

NRSC while generating data from Satellite imageries considers land with tree canopy of more than 10% and minimum area of .5 ha; FSI also follows same canopy density and more than 1 ha for forest cover and less than 1 ha for tree cover. NSO report excludes predominant land uses like agriculture and monoculture.

Dipak Sarmah Former Principal Chief Conservator of Forests, Karnataka has decoded 2019 report of FSI in his latest book, 'Agro-forestry in Karnataka, A Golden Opportunity for Green Growth'. During the periods covered by 2015, 2017, 2019 reports, large extent of non-forest areas are promoted to forest cover classes in Karnataka. 914 sq. km, 5174 sq. km, and 2540 sq. km are shown to be promoted in



three reports respectively. In the same periods, fairly large extents of forest cover classes are demoted to non-forest areas, confirming deforestation. The three reports decoded in the book suggests in the same order that 650 sq. km, 2771 sq. km and 1515 sq. km forests are lost in Karnataka. The transition of big chunk of non-forest areas to forest cover has enabled Karnataka to register net increase of 289 sq km, 1101 sq. km and 1025 sq. km respectively. Sarmah's interpretation concludes that some areas have successful social forestry plantations but largely forest cover in non-forest areas include horticulture plantations, agro-forestry plantations and natural forests on revenue lands.

"Promotion of a very large extent of non – forest area to the category of forest cover is a positive indication of increasing tree cover in areas outside the traditional forests, although some areas with successful Social Forestry plantations raised by Forest Department may also fall in the category. By and large, the non – forest areas with forest cover include horticultural plantations and agroforestry plantations, besides natural forest in non –forest (revenue) land." These are the observations of Dipak Sarmah in the book.

In ISFR 2015, 2017 and 2019, the forest cover within recorded forest area (RFA) and forest cover outside RFA are available, which can be used for computing 'Trees outside forest' (TOF) for respective periods and is shown in the Table-1 below;

These figures indicate that in recent years the forest cover inside RFA has remained more or less stationary, whereas TOF outside RFA has increased at fairly fast rate i.e., it has registered an increase of approximately 1500 sq km in two years. If this increasing trend is any indication it is likely that TOF would surpass forest cover inside RFA in subsequent assessment of Forest Survey of India. It is an indication of positive impact of agro forestry, farm forestry and horticultural plantations on the tree cover of the state.

Owing to anthropogenic pressure the forest cover is undergoing a dynamic change. We have to focus on forest cover change matrix brought out in a table in ISFR 2019, which is reproduced as under;

If the figures published in ISFR 2017 are compared with that of ISFR 2019, it is seen that 1 sq. km very dense forests are lost in two years. Moderately dense forest (MDF) in 20,444 sq. km area has been reduced to 20,138 sq. km, but addition of 909 sq. km area in non-forest category on account of agro forestry and horticulture crops has taken MDF area to 21,048 sq. km., resulting in a positive change of 604 sq km. Other forest (OF) in 12,604 sq. km is also reduced to 11,398 sq. km and 1,631 sq. km is made up in non-forest category, resulting in net increase of 422 sq.km of this class. As regards forest area is concerned, we have lost 1 sq. km very dense forest, 306 sq. km moderately dense forest and 1,206 sq. km other forest, totalling up to 1,513 sq. km in two years. This is matter of concern and the department

TABLE-1

| Year of ISFR | Forest Cover (sq. km) | Forest Cover inside RFA (sq. km) | Forest Cover outside RFA (sq. km) | Tree Cover (sq. km) | Trees outside forest (TOF) (sq. km) |
|--------------|-----------------------|----------------------------------|-----------------------------------|---------------------|-------------------------------------|
| 2015         | 36,421                | 22,854                           | 13,567                            | 5,552               | 19,119                              |
| 2017         | 37,550                | 22,384                           | 15,166                            | 5,713               | 20,979                              |
| 2019         | 38,575                | 22,471                           | 16,104                            | 6,257               | 22,361                              |

TABLE-2

| Class                                          | Very Dense Forest (VDF) (Sq. km) | Moderately Dense (MDF) Forest (Sq. km) | Open Forest (OF) (Sq. km) | Scrub (Sq. km) | Non-Forest (NF) (Sq. km) | Area under each class as existed in ISFR 2017 |
|------------------------------------------------|----------------------------------|----------------------------------------|---------------------------|----------------|--------------------------|-----------------------------------------------|
| VDF(Sq. km)                                    | 4,501                            | 1                                      | 0                         | 0              | 0                        | 4,502                                         |
| MDF(Sq. km)                                    | 0                                | 20,138                                 | 0                         | 0              | 306                      | 20,444                                        |
| OF (Sq. km)                                    | 0                                | 0                                      | 11,398                    | 0              | 1,209                    | 12,604                                        |
| Scrub(Sq.km)                                   | 0                                | 0                                      | 0                         | 4,484          | 0                        | 4,484                                         |
| NF (Sq. km)                                    | 0                                | 909                                    | 1,631                     | 0              | 1,47,217                 | 1,49,757                                      |
| Area under each class as recorded in ISFR 2019 | 4,501                            | 21,048                                 | 13,026                    | 4,484          | 1,48,732                 | 1,91,791                                      |
| Net change in area (sq. km)                    | -1                               | 604                                    | 422                       | 0              | -1,025                   |                                               |

should pull up their socks to prevent such losses, particularly when large scale artificial regenerations are being taken up on these lands. The State has incurred huge loss of 1513 sq. km, while remaining part of the country has suffered a loss of only 330 sq. km.

The above table further suggests that 909 sq. km non forests are moved to moderately dense and 1631 sq km to open forest class as a result of agro forestry and horticulture plantations and effort of State in achieving this success has to be appreciated. But there are no reasons for celebration in Karnataka Forest department as increase in forest cover is due to horticulture crops like Areca nut, coconut trees, shade trees in coffee estates and agro forestry on private lands.

I came across news in a section of media that

NSO and FSI reports contradict each other. This is completely incorrect as authors have not decoded FSI report correctly. PM in the key note address of UN ECOSOC has said that the country has committed to reforest 26-million-hectare degraded forest lands by 2030. Forest departments have huge challenge of not only to hold on to present status, but also to increase cover while restocking degraded forest lands.

The headline that Karnataka has topped in adding maximum forest and tree cover, among the states in this country, is not the complete truth. We have lost 1515 sq. km of recorded forest areas, which should be a matter of serious concern and introspection for the department.

B K Singh, Former Principal Chief Conservator of Forests (Head of Forest Force) Karnataka.

## **Re-organization of two Forest Divisions in a Circle by transfer of a Range from one Division to another**

**By  
Paresh Kumar Sharma**

Brief history of this re-organization goes like this. That up to 1964, entire Karim Nagar was one composite Forest Division. This Division was not only covering the Karim Nagar district, but also a part of Warangal district (Parkal Taluk). However, a part of Karim Nagar district (Sircilla) was not part of Karim Nagar Division, but a part of Nizamabad District also formed a part of this Division. It happened so, as the boundaries of Forest Divisions were not co-terminus with the boundary of Revenue District as Forest Divisions had been constituted keeping in view the contiguity of Forest Blocks in the past.

In 1965, Karim Nagar Forest Division was bifurcated into two Forest Divisions, viz., Karim Nagar West (KW) & Karim Nagar East (KE) Divisions. At that time Karim Nagar West did not have Sircilla & part of Kodmial and Raikal Ranges. Karim Nagar East Division had eastern part of Karim Nagar District and the present Bhopalpalli North Range, a part of Warangal district.

The Divisional Forest Officers had to report to 3 Collectors. This was happening in many others Forest Divisions. This had led to problem of coordination with the District administration. In the aftermath of Telangana agitation of late sixties on reaching an accord with the leaders of Telangana Leaders, popularly known as Six Point Formula (SPF) or Local Cadre Rules. In 1976 the Government decided to make Forest Divisions co-terminus with the Revenue districts in pursuance of the Six Point Formula. This led to a major reorganization of the forest department in 1977. As a consequence, Sircilla Range became part of KW Division along with some other Sections/Beats from Kamareddy and Nizamabad Forest

Divisions. Hence, the geographical area of KW Division had gone up by 15428 Ha. Whereas KE Division lost Bhopalpalli North Range with substantial dense forest area of about 35,000 Ha. to Warangal North Division. Though geographical area wise KW Division was much larger than KE Division; forest cover wise KE Division was bigger with forest area of 78.46% of its total geographical area, whereas KW Division had only 7.22% of forest cover of its total geographical area. However, the total forest area of both KW and KE Divisions were almost equal.

There were 5 Ranges in KW Division and 4 in KE Division. Manthani Range situated in the northeastern part of KW Division, was the bordering Range to KE Division. It did not have much of forest cover. But it was commercially important being the Industrial hub with the presence of NTPC at Ramgundam and Kesoram Cement Factory at Basant Nagar. An important section of South-Central Railway passed through this Range. It was the central point of business activity due to locational advantage. There were 42 Saw Mills in this Range, out of about 240 saw mills in the entire KW Division. There were no Saw Mills in KE Division; good in a way!

Smugglers used to bring the illicitly felled timber from Nirmal, Jannaram, Adilabad, Mancherial Forest Divisions of Adilabad District and KE Forest Division and sometimes from Warangal North Division to the Saw Mills of Manthani Range for conversion to sizes. This had led to a nexus between the Smugglers, and saw mill owners. This nexus could not be broken due to the connivance of the few concerned staff. They used to object to and prevent conduct of raids on Saw Mills etc. by the Officers of affected Divisions

citing jurisdictional issue. Besides the less frequent visits of DFO KW in the absence of forestry activity in this Range, indirectly helped the smugglers and Saw Mills. Due to this the DFO could not have effective supervision and control over the staff and Saw Mills in Manthani Range. Few Subordinate Forest Officers and staff of this Range used to take advantage of this situation. Many of them were happy to extend support to these saw millers, obviously for consideration, and create problems for other Divisions. The worst affected was the KE Division because of its physical proximity to Manthani Range.

On the other hand, the DFO KE had to pass through the Manthani Range every time he had to go to KE Division, but had no authority to take any action over the culprits in Manthani Range as it was outside his jurisdiction. The smugglers used to operate in the nights and used fast moving vehicles to bring the illicitly felled timber logs to Saw Mills in Manthani Range. Connivance of some of the staff in KE Division also could not be ruled out in helping the smugglers transport the illicit timber. Once the smuggled timber used to reach in the jurisdiction of Manthani Range/ KW Division; it was believed to be in safer hands due to connivance & support of local staff.

This problem could have been curtailed to a large extent provided the Manthani Range had been tagged on to KE Division at the time of reorganization of the Forest Department in 1977. It would have ensured the protection of forests in Karim Nagar and Adilabad districts and proper administration of the forests in KE Division, besides closer supervision on the Saw Mills in Manthani Range and enforcement of discipline among the staff. The then DFO KE had submitted a proposal for transfer of Manthani Range to KE Division in 1978, citing the above reasons to CF Warangal, but no action was taken on this and the proposed reorganization did not materialize.

In 1983, I had joined as DFO KE Division. After studying this issue in depth and holding extensive

discussion with officers and staff of KE Division as well as with DFO KW and with their consent, again submitted a proposal for the transfer of Manthani Range from KW to KE Division in July 1985 to the CF Warangal. He was reminded frequently by the DFO KE. However, no favorable orders were received. Between late 1985 to early 1989, there was no progress at all. Later on, I learnt that the CF Warangal had not even submitted the proposals to the PCCF.

The problem of non-transfer of Manthani Range from KW to KE was attributed to the Six-Point Formula or Local Cadre Rules (Presidential Orders). According to which the transfer of persons from one Division to another Division was not permissible. This problem could also have been addressed in 1984-85 when a new scheme, "Wireless Net Work Scheme for the Protection of Forests of Warangal Circle & Kothagudem Division of Khammam Circle" was sanctioned by the Government where nine (9) posts of Foresters and sixteen (16) posts for Forest Guards were sanctioned for KW Div. The staff of Manthani Range could easily have been adjusted in KW Division against these posts; thereby paving way for smooth transfer of Manthani Range from KW Division to KE Division. But Alas! it did not happen, as orders for this intra Circle re-organization of Divisions were not issued.

Again, in 1989, CF Warangal, who incidentally was the DFO KE in 1977-78, revived the proposal and actively pursued the matter with the PCCF. However, the PCCF had constituted a departmental Committee, "The Committee on the Re-organization of the APFD" to examine the reorganization of whole APFD. It was presumed in the PCCF's office that this Committee would also consider the Manthani issue and submit its recommendations as well. Though no specific orders to this effect were issued or mention was made in the Terms of Reference to this effect. But the file dealing with the Manthani transfer was closed



in 1991 at the PCCF's office level. In January 1992, the Committee submitted its report, but unfortunately there was no deliberation on the issue of transfer of Manthani Range from KW to KE Division; hence the issue remained unsettled.

I was posted as Conservator of Forests Warangal (FAC) in the last week of February 1994 on ad-hoc basis and regular CF Warangal in the last week of March 1994. I was in the knowhow of the issue involving Manthani Range. Hence, I once again revived the proposal of reorganization of the KW & KE Divisions by transfer of the Manthani Range from KW to KE Division and submitted the proposal for expeditious consideration and approval by the PCCF to the PCCF giving full & detailed justification. As per the APFD Code the PCCF was the competent authority to order such reorganization.

I went to the office of the PCCF, met him and explained the need for this re-organization in the interest of protection of forests. As the PCCFs in past had agreed in principle for this re-organization, the incumbent PCCF Sri AH Moosvi, IFS, had no hesitation in accepting this proposal. He also advised to take care of the existing Officers and staff of KW Division in Manthani Range so that there was no violation of the SPF. Having said so, within days he issued the Orders for reorganization of the KW & KE Divisions by way of transfer of Manthani Range from KW to KE Division.

The PCCF had sent his Order for Publication in the AP State Gazette, as per the APFD Code provisions. However, copies of the Gazette Notification were not received in the PCCF's Office even after a month of sending the requisition to the Commissioner of Printing, an IPS Officer of DIG Rank. It was later learnt that certain vested interests had influenced the Printing Press officials not to dispatch the copies of the Gazette in which the Reorganization of the KW & KE Divisions had been notified, though they

could not prevent its publication. The reasons for this opposition to the reorganization were very well known to all in the forest department.

I personally met the Commissioner and obtained the copies of the Gazette Notification in the first week of September 1994. I was shocked to learn that Gazette Notification had been printed on 23.06.94 itself, but its dispatch had been delayed due to pressure from vested interests. Without losing time, I met the Collector personally and explained the background and importance of this re-organization. As printing in the Govt. Printing Press was going to take lot of time, the Collector advised to get the Gazette notification printed in a private printing press. I was provided the Gazette number and I quickly arranged its publication in the Karim Nagar District Gazette on 7th of September 1994.

I convened a meeting of the DFOs of the Circle on 8th of September 1994 and made the DFOs KW and KE Divisions to hand over & take over Manthani Range respectively on paper with maps. This way a long overdue issue of this reorganization was settled. Anticipating protest from the Officers & field and ministerial staff the transfer on paper had to be arranged this way.

After this I convened meeting with the local body of TNGO's Union and explained in detail the purpose of this exercise. Similarly, I convened a meeting with the local Units of FRO's and Junior Forest Officer's Associations and explained the need and modalities of this reorganization. I told them that there will not be any violation of SPF and that seniority of none of the staff would be adversely affected. I told them that in the recent past when the new Scheme of Wireless Protection was sanctioned, the KW Division got much larger number of posts compared to KE Division; and thereby much larger avenues for promotion. Hence there was no net loss to the Division. Had Manthani Range been transferred to KE Division in 1977 itself;

this question would not have arisen! And, above all I emphasized that the entire exercise has been done to improve the protection of forests, which was our primary responsibility. This pacified all. And, the issues were resolved amicably paving the way for smooth transfer of Range and posts of Manthani Range from KW to KE Division.

Some of the staff of Manthani Range were repatriated back to KW Division, to the extent of availability of vacancies in KW Division. Rest of the willing staff of Manthani Range, pertaining to KW Division were kept on "deemed deputation" in KE Division, keeping their lien and seniority in KW Division. It was also decided that as and when vacancies arose in KW Division, these members of the staff would also be repatriated to the KW Division, which was their parent Division. This way, overcoming all the obstacles, reorganization of KW & KE Divisions could be achieved; though with a delay of 16 years. However, all is well that ends well. "Der ayad, durust ayad"!!

This historic reorganization by way of the transfer of Manthani Range from KW to KE Division, bore the fruits quickly, which was evident from the following facts:

1. Frequency of visits by DFO KE in Manthani Range increased tremendously, leading to better monitoring and supervision over the activities of staff as well as better vigilance on smuggling routes and saw mills.
2. Within three months of transfer of Manthani Range to KE Division, offence cases were booked against 7 saw mills for illicit storage and cutting of Teak timber. Illicit material was seized and their licenses were canceled following the due process. Whereas, in contrast, not a single case had been booked nor saw mill license cancelled by the staff of KW Division from 1991

till the transfer of Manthani Range to KE Division.

3. A big scandal of forgery of Transit Permits and other Government property (Rubber stamps of Officers, check posts etc.) was unearthed spread over Adilabad and Karim Nagar districts. In this case, 28 forged Transit Permits were detected initially through which approximately 290 cubic meters of illegal Teak timber was transacted, worth about Rupees 60 lakhs (this was the result of one year of check; God only knows how much loss such transactions might have caused in the past!).
4. Because of the transfer and unearthing of scandal, a thorough checking of government printed transit permit was taken up throughout the state and instances of theft of Transit Permit books from Nirmal Division of Adilabad Circle and KW Division came to light.
5. Because of the above actions, the smuggling of timber had almost been completely stopped; as it had become almost impossible to obtain illicit timber from the smugglers or Saw Millers. As a result, the genuine buyers took part in the auctions. This had cascading effect in the rates at which Teak Timber was sold in the auctions in the Govt. Timber Depots. The average cost of Teak timber has gone up tremendously, almost trebled, in the auctions at the Govt. Timber Depots.

This reorganization would not have been possible but for the historical memory and persuasion on the part of some of the Officers at DFO and CF and support of the district administration, Commissioner of Printing press and the PCCF in the overall interest of the protection of forests. (The author is an IFS Officer of 1980 Batch and a retired PCCF & HoFF of Telangana State. He can be reached at [pareshvyas22@gmail.com](mailto:pareshvyas22@gmail.com) and +91 6300030519.)

**Green Quiz Championship - February 2021****Quiz Master: Dr. K. Tirupataiah**

|                                                                                                                                                                                                   |                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Which is the largest Ramsar Wetland in India?<br>-----                                                                                                                                         | 2. Which Indian State has the maximum number of Wetlands in India? -----                                                                                                                        |
| 3. Which is the First Ramsar site in India? -----<br>-----                                                                                                                                        | 4. Developed by Indigenous Australians, this musical wind instrument is considered as the oldest in the world. What was the original wood used to make this instrument? -----                   |
| 5. In the native language of Japanese what does Nihon mean? -----,                                                                                                                                | 6. After Independence, India issued a postal stamp in Nov 1947 for use for international mail. What was the picture on the stamp? -----                                                         |
| 7. British wanted to have control over this product and break monopoly of China. They brought seeds from China and chose Assam to cultivate it. What did British bring from China? -----<br>----- | 8. A Muslim Saint Baba Budan while returning from pilgrimage to Mecca, brought seven seeds of this crop hidden in his beard and planted in Mysur. What did he bring? -----<br>-----             |
| 9. Pongal is a harvest festival dedicated to which God? -----                                                                                                                                     | 10. Singapore night Safari mimics, every day, a celestial phenomenon that occurs only 12/13 times a year. What phenomenon? -----                                                                |
| 11. This animal was introduced in Hawaii, Caribbean islands from South East Asia to control another animal there. Which are these two animals that are mentioned in Panchatantra? -----<br>-----  | 12. Sargasso Sea has only water on all sides and doesn't have any land boundaries. What surrounds the Sargasso Sea? -----<br>-----                                                              |
| 13. Which Lake, at one time the fourth largest in the World, became a Desert now? -----<br>-----                                                                                                  | 14. Antipodes are points on the surface of Earth that are diametrically opposite to each other. But if you tunnel through this antipode, you still end up in itself. Which point is this? ----- |
| 15. Hanami is a festival celebrated in Japan under which trees? -----                                                                                                                             |                                                                                                                                                                                                 |

For answers, please see page No.33

## In her End was her Beginning!

By

Dr B Raghotham Rao Desai

**FIRST, THE BEGINNING:** It opened in Kashmir, though its mountains were sublimely indifferent to human life and death — untouched by human sorrows, immune to human joy, their beauty and stillness existed far above the plains of human toil and struggle. No wonder that those whose ancestry belongs to it, long for Kashmir — “Gar firdaus bar-rue zamin ast, hami asto, hami asto, hami ast” (If there is a heaven on Earth, here it is, here it is, here it is - Emperor Jahangir) — and thirst for its mountains and their untroubled snows!

Raj Kaul, a forebear of the Nehru's left his lofty, Edenic home in the Himalayas around 1716 for Delhi and became a member of the court of Mughal Emperor Md. Farrukhsiyar (s/o Azim-ush-shan, grandson of Aurangzeb) who granted him a house situated on a canal (Nahar) in the city, and his descendants thus came to be known as Kaul-Nehrus which in time got shortened to Nehru. From the beginning, the family was allied to power. Raj Kaul's great-grandson became the first Indian Vakil or lawyer of the East India Company in Delhi, whereas his son Ganga Dar was a police officer in the city when the Mutiny broke out in 1857, in the upheaval of which he fled to Agra with his family where he died four years later and three months after his death his wife gave birth to a posthumous son who was named Motilal. He was raised by his elder brother Nand Lal, and Motilal like his brother, trained as a lawyer & moved with his family to Allahabad after his brother's death, to pursue what quickly became a brilliant legal career.

Motilal Nehru, being an astute and successful lawyer, prospered both professionally and personally and soon became one of the wealthiest & most socially prominent citizens in the town. Fortune

also smiled on him when his first child Jawaharlal was born in 1889. A decade later, he moved with his family to a huge house and named his mansion “Anand Bhawan”, a manorial estate on English lines and of English proportions — with spacious gardens, an orchard, a tennis court, riding ring and an indoor swimming pool. Shortly after moving in, electricity and running water too had been installed — the first in the town. A couple of years after, he imported a car from Europe when he made a trip, and it was the only one in all of U.P., driven by an English chauffeur!

A year later, Jawaharlal was sent to England to stay there for the next seven years to complete his education at Harrow, Cambridge & London and called to the bar, before returning to his parents and entering the legal profession without demur. Though he put up something of a struggle but agreed to marry the woman his father chose for him and the marriage with Kamala Kaul took place pompously at Delhi in early February, 1916. Indira Priyadarshini Nehru was born on 19th of November, 1917 at Anand Bhawan.

Now, towards the End: The strength of a woman is not measured by the impact that all her hardships in life have had on her, but is measured by the extent of her refusal to allow those hardships to dictate her, and who she becomes! The innate qualities of endurance, empathy, creativity, tolerance, dignity, gentleness, kindness and integrity among others, that naturally come to women make for their womanhood — these qualities having stood the test of time and won for them the recognition they rightly deserve in the contemporary world — there being no doubting that their strength comes from their womanhood, and trying to be a man is a waste of a woman! The foregoing words succinctly encapsulate



the strength of being a woman — all accomplished women being those who had grasped the strength of womanhood and the victory of Indira Gandhi as the third Prime Minister of the largest democracy in the world such as India (till then considered as having the only qualification of being the child of a great statesman & freedom fighter) was yet another defining moment in the latter half of sixties of the century gone by, and is a testament to this great truth. She had apparently grasped the strength of her womanhood and was quick to rise from strength to strength, never once deliberating on the prejudices attached to her lineage — rather being quick to grasp all that she could make of herself, giving her a glimpse of what she could achieve, notwithstanding her circumstances of growing up without any proper grooming or any university degree!

Let us now straightaway come to the events of 30th and 31st of October, 1984. Indira Gandhi discussed the possibility of assassination with son Rajiv and daughter-in-law Sonia as a fallout to operation Blue Star (during the first week of June, 1984) she ordered and wrote out instructions for her funeral. Despite an enhanced and enlarged security team, she remained extremely vulnerable. There was an indication of what was to follow when she requested President Zail Singh to be her emissary and visit the Golden Temple on 9th June 1984 (3 days after the operation Blue Star) when a warning shot was fired at him which missed the target narrowly but his security was injured. When the full extent of the carnage and desecration wreaked on Golden Temple became known, it was obvious that ultimate revenge would be taken — and on whom. The intelligence plan to protect her however, designed only to prevent an attack from the outside — no one perceived that an attempt could be made from inside the Prime Minister's house — even after she countermanded the order banning Sikh bodyguards, no one guessed there was an enemy within. Perhaps she had an intuition to mention in a document she

wrote during autumn that year that if she died a violent death, she knew the violence would be in the thought and the action of the assassin, not in her dying. She had the premonition that the end of her life was near and she had guessed it would probably be violent for her assassination had long been an occupational hazard and towards the end of October in 1994 she felt like an inevitability — she had even instructed her son Rajiv to scatter her ashes over the Himalayas — the idea being an offshoot from the times she fell in love with the mountains, their beauty and precipices and the panoramic vistas they disclosed as she visited the Alps during her student-tenure at Geneva as a child, when her mother was receiving treatment for tuberculosis in a sanatorium there. And she envisaged an end, significantly for herself, when she heard the story of Joan of Arc's death at the stake, from her father on their visit to France during her school's vacation there. She was so obsessed with such thoughts & fed up (after younger son Sanjay's death in an accident earlier) that when she was interviewed by the representative of the Encyclopaedia Britannica for a biographical essay, she categorically stated to the last question that she did not want to be remembered for anything!

Towards a period in the middle of 1984, Indira Gandhi appears to have not only lost her political judgment but also any vestiges of her old uncanny sense of timing and decisiveness — despite outward appearances, in truth, she was losing her grip.

Returning late that night on 30th of October, 1984 after a whirlwind election tour from Odisha, she spoke with her secretary who felt she looked unusually tired and worried — she also confessed she was exhausted and told to cancel all but the most pressing of the next day's appointments. Next morning, she was up by sunrise and dressed as usual and reviewed the day's schedule for Wednesday 31st October. After breakfast, she submitted to the attentions of two make-up artists for the Ustinov-television-interview

at her office. As she emerged and walked down the garden path that connected her home with Akbar Road office, at the far end her bodyguard Beant Singh was seen standing at the wicket gate, a great bear of a man — a Sikh from Punjab who has been one of her security-guards since she had returned to Office in 1980. Not far away from him was a young new constable Satwant Singh who had not yet seen her at close range. As she approached the gate, she acknowledged her bodyguards with a namaste. In response, Beant pulled out his revolver and pointed it directly at her, to which she said “What are you doing?”

At the same moment Beant fired his gun and a Buller hit her in the abdomen, she raised her right arm and hand to protect her face. Beant fired four more shots at point-blank range which entered her armpit, chest and waist. Five feet away stood Satwant, holding an automatic Sten gun, immobilised with fear until Beant shouted at him to shoot. The young man responded automatically and pumped twenty-five bullets into the Prime Minister's body. She spun round like a top from the impact, before falling in a crumpled heap on the path. Only the Sub-inspector Dayal who was in the rear reacted quickly by rushing forward but before reaching her he was hit in the thigh & leg and himself mowed down by Satwant who was still emptying his Sten gun.

Indira Gandhi's other companions formed a frozen tableau behind her body, narrowly missing the second volley of bullets, stood rooted to the spot, staring at her in horror. Then slowly coming out of their trance, crept forward and crouched over her. Her personal servant rushed back to her house to get the physician-on-duty while another security man came running from the Akbar road office next door. Both Beant and Satwant dropped their guns and Beant

said in Punjabi “I have done what I had to do. Now you do what you have to do”. At this, the constable who was holding a black umbrella to shield her from the sun lunged forward and tackled Beant, bringing him to the ground, while commandos surged out of the nearby guardroom and overpowered Satwant.

The physician-on-duty who came running and made attempts to give her mouth-to-mouth resuscitation. Her limp-form was carried from the path to a waiting car which sped off to the three-miles-away AIIMS which had a supply of her blood-type (O Rh negative) and also her medical records. An endotracheal tube was pushed down her mouth and windpipe to pump oxygen into her lungs, and two intravenous lines inserted to start blood transfusions. An electrocardiogram showed faint traces of a heartbeat and the medical team of a dozen of the hospital's top doctors who work working on her tried to massage her heart. But they could find no pulse and Indira Gandhi's eyes were dilated, indicating brain damage. Though it was clear that she was already lost, she was moved up to the OT where a team of surgeons tried to perform a miracle during a four-hour operation. What they found though was that the bullets had ruptured her liver, perforated her small & large intestines, penetrated one lung, shattered bones and vertebrae, and severed her spinal cord — only her heart was left intact. Five hours after being gunned down by men entrusted with protecting her life, Indira Gandhi was pronounced dead.

After the smouldering funeral fire at Shantivana (on the banks of the Jamuna) finally cooled, the ashes were traditionally gathered into heavy brass urns. Thirteen days later, they were flown to Kashmir and were scattered over the Himalayas by her son as was willed by her. In her end, so to say, was her beginning!

*Save the wetlands and then we can think about saving the entire earth.*

## **Nagarjunasagar Srisailem Tiger Reserve-AP**

**BY**

**V. SANTHASEELA BABU**

Nagarjunasagar Srisailem Tiger Reserve is located in the southern portion of Eastern Ghats of Andhra Pradesh in Nallamalai. This Tiger Reserve has the credit of possessing a variety of Floral and Faunal species. The topography consists of hilly terrain with plateaus, ridges, gorges and deep Valleys supporting tropical mixed dry deciduous forests with an under growth of bamboo and grass. According to the Tiger census conducted during the year 1979, it was estimated that there are about 40 Tigers in this area.

The Nagarjunasagar Srisailem Wildlife Sanctuary was declared in 1978. Before 1978, the management was not focused on wildlife. After declaration as Wildlife Sanctuary the management started focusing on Wildlife and Biodiversity. The Jungle conservancy department of British Regime took the administration of forests in 1862. The Forest Act was enacted in 1882 and reservation of Forest Blocks was started in 1883. During 1905-1948, main plans were formulated, the first being M.A. Rahim Plan in 1931. Some attempts were made for Wildlife Management by regulation of hunting. Facilities were created for sportsmen by issue of licenses. Shooting blocks were worked on a cycle of 4 Years. Department improved salt licks and water holes also. Sports men were encouraged to kill cattle lifters and man-eaters. After Independence, for the rehabilitation and resettlement of submerged villages in Nagarjuna Sagar Reservoir large tracts of forests were disreserved for habitation and cultivation. Srisailem Project increased the road network from Hyderabad to Dornala and so on. Up to 1972 forests were worked under contract system. In 1988, a historic decision was taken to ban all timber coupes except for supplies to temple and local needs.

Before we enter the Tiger Reserve, it is quite appropriate to know about the aboriginal tribes living in these Nallamala forests. The Nallamalai Hills spread over in the districts of Kurnool, Prakasham, Guntur (State of Andhra Pradesh), Mahaboobnagar and Nalgonda (State of Telangana) constitute the traditional habitat of Chenchus, the food gathering and hunting tribe of Andhra Pradesh. The population of Chenchus was 49,232 as per 2001 census. The total literacy rate among them is 32.28 out of which male literacy rate is 40.87 and female is 23.45 as per 2001 census. Their mother tongue is Telugu. The chenchu tribe is divided into a number of exogamous clans which are prefixed to their names. Some of the clans found among Chenchus are Mandli, Chigurla, Udathala, Tokala, Mekala, Bhumani, Katraju, Arthi, Dasari etc. Family is nuclear. A very few joint families are also found. Chenchu tribe is patriarchal and patrilineal. Monogamy is the most prevalent form of marriage. Polygamy is also practiced but it is rare. Marriage by negotiation, by elopement and by mutual consent are found to be methods of acquiring mates. Cross-cousin marriages are the most preferred. Marriage by service and by exchange are also practiced. Levirate or marrying one's own elder brother's widow seems to have been practiced in the past but now-a days it is on the wane. In addition to the payment of bride price, the groom or his parents have to bear the expenditure for the marriage.

They collect varieties of roots, tubers, wild fruits, edible leaves etc., and consume them. They are non-vegetarians but abstain from eating beef. The traditional house of a chenchu is a small conical or oblong hut with wattle walls and thatched roof. Goats, sheep, buffaloes and cows are the domestic animals and there may be plough bullocks with cultivating

families. Chenchus are adept in honey collection from honey combs perched on the mountain cliffs and caves. They also collect minor forest produce items like gum, tamarind, myrobalans, nuxvomica, honey wax, mohuwa flowers, chironji, soap nuts, broom-sticks etc., and sell them to Girijan Co-operative Corporation. The measures of social control are practiced among chenchus through a council of elders of the village and is headed by a man called a Peddamanishi. Chenchus generally state that Peddamanishi is always succeeded in office by his eldest son but they also admit that this rule is by no means always followed and that any sensible man may become Peddamanishi even if there is a son to the deceased holder. The disputes among Chenchus are generally settled by the traditional council. They worship and believe in many deities and spirits both malevolent and benevolent and follow all Hindu festivals. Their religious pantheon includes Mysamma, Rakta Veradu, Onti Veeradu, Peddamma, Lingamaiah, Mallanna, Narasimhaswamy, Pothuraju, Nagamaiah Sunkulamma, Manthanalamma, Ankamma etc.

The landscape of the Tiger Reserve contains lofty hills and cavernous valleys, perennial rivers, exciting winding roads that have thick forested topography on one side and deep and gigantic valleys on the other, different hues to mark the seasons, inhabiting this mesmerizing forested landscape is the most charismatic cat of the world –the Tiger. This is Nagarjunasagar Srisailem Tiger Reserve which is a true wild paradise. Nagarjunasagar Srisailem Tiger Reserve is the largest Tiger Reserve of India. It spreads over an area of 3,727.82 Sq.Km. It consists of a core area of 1,250.48 Sq.Km., a buffer area of 1283 Sq.Km as follows

Inviolable/Critical Tiger Habitat Zone-1(Notified) is 1,250.48 sq.km. Gundla Brahmeswaram as extended core to NSTR is 1,193.68 forming a total Inviolable area of 2,444.14 sq.km. Peripheral Zone

(within the sanctuary) is 552.87 sq.km and the Buffer Zone NSTR (Outside the Sanctuary within the R.F) is 730.49 sq.km. forming a total Buffer area of 1,283.36 sq.km. The area of the sanctuary where the total Inviolable area and the Buffer area put together is 3,727.82 sq.km.

**Floral Diversity:** The forests are mostly Southern Tropical Dry Deciduous Miscellaneous type 5A/C3 (Champion & Seth 1968) and they are further sub-divisible into Teak, Miscellaneous, Nallamaddi (*Terminalia tomentosa*), Yepi (*Hardwickia binata*) and Anogeissus types depending on the preponderance of species. The Nagarjunasagar Srisailem Tiger Reserve lies astride the river Krishna in the biotic provinces of zone (6) of the Deccan peninsula 6E.

The average rainfall for the entire Nallamalai is about 740mm. The forests of Nallamalai are confined to 6480 sq. km, of which, 5937 Sq.Kms is under the Tiger Reserve, out of which Nagarjunasagar Srisailem Tiger Reserve, Andhra Pradesh is having an area of 3727 Sq.Km. In Nallamalai under the broad classification of the tropical vegetation, three types of forests, viz. Dry Deciduous, Moist Deciduous, and Scrub occur with their subtypes and several micro-climatic niches wherein fidelity plants come up. Based on the classification of forests by Champion and Seth (1968), the following types have been designated for the Nallamalai:

- Southern Dry Mixed Deciduous forests,
- South Indian Moist Deciduous forests,
- Slightly Moist Teak forests,
- Tropical Riparian Fringing forests,
- Tropical Dry Evergreen forests and
- Scrub —further differentiating this into Euphorbia type, Acacia type, etc.

Intermixed with Dry Deciduous forests are the edaphic climaxes like Boswellia type, Calamus forests, *Phoenix humilis* var. pedunculata type, almost pure



formation of *Terminalia coriacea* type etc., It has been estimated that there are 1400 taxa spread over 109 families. Amongst those the following four have been found newly viz., *Andrographis nallamalayana* Ellis, *Euphorbia linearifolia* Roth var *Nallamalayana* Ellis, *Crotalaria madurensis* Wt. var. *kurnoolica* Ellis & Swaminathan and *Rostellularia vahili*, (Roth) Nees var. *rupicola* Ellis. The Nagarjunasagar Srisailem Tiger Reserve is having about 353 species in 88 families that are found to have medicinal properties. Grass potential in Nallamala is very good and occurs in 90% of the catchment area. Dense grass occurs in 30% of the area and scattered occurrence in 20%. But pure grasslands are scanty in this Reserve. Mostly one can find the woodland savannas. About 66 taxa of grasses are found to exist. The old trees commonly found are *Ficus*, *Terminalias*, *Hardwickia*, *Bombax*, *Tamarindus*, *Syzgium*, *Pterocarpus*, *Albizia*, *Diospyros*, *Grewia*, *Gardenia*, *Mohawa*, *Cassias*, *Buchanania*, *Neem*, *Feronia*, and *Sizygium* etc., species.

**Faunal Diversity:** Over 80 species of Mammals, 303 species of Birds, 54 species of Reptiles, 20 Amphibians, 55 Fishes, 101 species of Butterflies, 57 species of Moths, 45 species of Coleopteran, 30 species of Odonata and numerous other forms of insects are found in Nagarjunasagar Srisailem Tiger Reserve. The faunal composition represents the Deccan Peninsular zone of Bio geographic classification of India. The diversity of geomorphology and vegetation give rise to 29 multitude of habitats and ecological niches that support rich wildlife. Most of the Nagarjunasagar Srisailem Tiger Reserve is covered with open forest vegetation and forms an ideal habitat for wild animals. The topography of the sanctuary enables occurrence of varied micro & macro habitats to shelter variety of animals. The moist upper plateaus, river Krishna with lofty hill slopes on either sides numerous hill streams, valleys and deep gorges, rock shelters, wood lands,

bamboo forests contribute to the existence of a variety of wildlife species. Under the Zoo-Geographic classification, this area comes under Indo-Malayan region (Cis-Gangetic sub-region) - native to the true Indian fauna like the Nilgai, Black buck and Four horned Antelope etc.

The steep vertical scarps are home to numerous Raptors like Honey Buzzard, Black Eagle and Hawks. These forests have only the Grey Jungle Fowl. Among the other birds represented are Grey Hornbill, Malabar whistling Thrush and Paradise fly Catcher etc. The presence of numerous streams, dense foliage, wild flowers, woodland edges and damp patches attract numerous colourful butterflies including large Oak blue, Black Rajah, Great Egg fly, Blue Pancy etc.

### **Nagarjunasagar Srisailem Tiger Reserve has the following important species of wild animals:**

Tiger (*Panthera tigris*), Common Leopard (*Panthera pardus*), Grey jungle fowl: (*Gallus sonnerati*), Pea fowls (*Pavo cristatus*), Chinkara or Indian Gazelle (*Gazella bennettii*), Sambar (*Cervus unicolor*), Black Buck (*Antelope cervicapra*), Four-Horned Antelope or Chowsingha (*Tetracerus quadricornis*), Nilgai or Blue Bull (*Boselaphus tragocamelus*), Indian Wild boar or Wild Pig (*Sus cristatus*), Sloth Bear (*Melursus ursinus*), Bonnet Macaque (*Macaca radiata*), Indian Hare or Black Napped Hare (*Lepus nigricollis*), Indian Giant Squirrel (*Ratufa indica*), Indian Porcupine (*Hystrix indica*), Common Mongoose (*Herpestes edwardsi*), Jackal (*Canis aureus*), Indian Fox (*Vulpes bengalensis*), Dhole or Indian Wild Dog (*Cuon alpinus*), Jungle Cat (*Felis chaus*), Leopard Cat (*Prionailurus bengalensis*), Fishing Cat or Large Tiger Cat (*Prionailurus viverrine*), Chital or Spotted Deer: (*Axis axis*), Common Langur or Hanuman Monkey (*Semnopithecus entellus*) etc.

**Ecotourism:** The landscapes of Nallamalai is unique

with Deep Valleys, Gorges, River, Grass lands and Forests and a best place for promoting conservation education to general public, pilgrims and students. There is a Bio Park in Srisailem with different models of Life forms including Dinosaurs. To elicit local support for wildlife and to impart conservation education to the visitors, Eco-tourism programmes involving local communities have been initiated in Nagarjunasagar Srisailem Tiger Reserve in three locations i.e.; Bailurty, Thummalabailu and Pacherla. Eco-tourism programmes like Jungle safari, Jungle camp, Nature trails, Trekking, Bird and Butterfly watching, Archery and Heritage walk are aimed to sensitize the visitors on nature conservations and to empower the local communities improving their livelihoods.

Further details can be had by visiting the website: [www.nallamalajunglecamps.com](http://www.nallamalajunglecamps.com)

#### **Environmental Education Centre:**

Environmental Education Centre located at Sundipenta has been established for creating awareness about conservation to the students, pilgrims and other visitors about different aspects of wildlife and conservation. The centre is equipped with sophisticated audio-visual hall, interactive and interpretative facilities to educate and enthuse the visitors and enhance the conservation awareness among them.

**Ecological Knowledge Park:** Ecological Knowledge Park located at Sundipenta is meant for imparting the knowledge of evolutionary processes and ecological processes to visitors, especially students from colleges and schools. The models of different animal groups in the Evolution and interpretation of their eras depict the entire process of evolution from the big bang of universe to modern age of mammals. The different stages of evolutionary processes from origin of life in ocean to dynasty of dinosaurs to rule of land by mammals are arranged in sequences to explain in a nutshell

the gist of Evolutionary and Ecological aspects. The Ecological Knowledge Park, first of its kind in a Tiger Reserve in India, has been developed with eco-friendly materials, keeping in mind the concept of least disturbances in forests.

**Challenges Faced:** Pristine wilderness of this Tiger Reserve is under severe threat, mainly because of habitat destruction, Illegal human activities like encroachment, poaching and cattle grazing. These endanger the long-term survival of the forests and its wild denizens. Similarly, there is immense pressure from large number of villages in the neighbourhood and their high level of dependency on the Tiger habitat. Rapid developmental activities are jeopardising the very survival of wild flora and fauna of the region. The northern part of Nallamala hills is greatly been affected by human induced pressures. Crop damage by wild animals and cattle lifting by predators are the main reason of conflict between the reserve and the people. Though compensation is paid to villagers, still there are chances of retaliatory actions. Death and injuries to human beings is not uncommon. Attacks on human by wild animals are mostly, not intentional, though accident happens and sometime people get injured by sloth bears and leopards. Fishing activity is a main concern in the back waters of the multipurpose dams which are constructed across the River Krishna at Srisailem and Nagarjunasagar forming large reservoirs within the boundaries of the Tiger Reserve. Nagarjunasagar Srisailem Tiger Reserve being a centre for resource for various stakeholder departments, especially hydro- electric and Integrated Tribal Development Agency (ITDA), migrated fishing community, and other excessive resource users, there is every possibility for conflicts between the conservation interests, individual interests/the non-compatible developments.

Contd.. on page No.29

## We produce black - But our views are Green



Cultivation near Reclaimed Dump



Settling pond / Summer storage tank



Eco-Friendly Park



Award in recognition of eco-friendly measures

- Pollution control and Soil Conservation Measures.
- About 5.50 crore saplings were planted in Singareni spread over area.
- Artificial forest covers to OC Dumps.
- Avenue plantation in colonies and roads.
- Eco-friendly parks developed in colonies.
- Sand manufactured from OB.
- STP/ ETP at all Colonies / Establishments.
- Efforts of Singareni were rewarded by State and National level awards.



Colonies surrounded by greenery



Reclaimed OB Dump



# THE SINGARENI COLLIERIES COMPANY LIMITED

(A Government Company)





**Jungle Cat in Nagarjunasagar Srisailam Tiger Reserve**



**Tiger with two Cubs in Nagarjunasagar Srisailam Tiger Reserve**



**Leopard Cat in Nagarjunasagar Srisaillam Tiger Reserve**



**Mouse Deer in Nagarjunasagar Srisaillam Tiger Reserve**





# GreenAP Mobile App

- ◆ With a vision to increase green spaces and to improve the quality of life of the people, **Andhra Pradesh** Government has come up with a unique initiative with the support of APG&BC in launching **GreenAP** mobile application.
- ◆ This app helps in bridging the gap between consumers and the vast vendor eco-system across the country who are dealing with green products and services.
- ◆ Consumers will now have access to vendors to procure plants of various kinds including indoor, exotic, lawns, roof top gardens, vertical gardens, etc.
- ◆ With this mobile app they will have access to the products like pot vendors, aquariums, landscape designers and many more.

## Salient Features



Vendor Directory



News



Enquiries



Forums



Events

Consumers can select vendors who are closer to their city or town for any purchase by browsing through the hundreds of profiles available in the **GreenAP** mobile app. Consumers can access vendors via WhatsApp, SMS or Phone.



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For more information, please contact our help line number: **+91 7997650835**

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**Publicity and Extension:** For creating awareness among the public, politicians and media, publicity is given priority by signage boards, brochures, workshops, village meets, nature camps for students. There are 2 Environmental Education Centres (EEC) at Sundipenta and Rollapadu, for providing environmental education and awareness among public, students and staff. Regular trainings, seminars and workshops are conducted for skill upgradation of field staff and officers. Trainings are conducted periodically for the skill upgradation of Field staff at Beat, Range, Division, Circle and State level. In this regard the support of various organizations has been taken and it will be continued in future also. The frontline staff and protection watchers have been trained in use and fixing of camera traps, MsTRIPES, PDAs, GPS, Range Finders, Hand compass and in protection aspects also.

**Protection Measures taken up in the Tiger Reserve:** Some of the protection measures to conserve the reserve are as follows:

- Strengthening and Effective Management of Tiger Reserve
- Relocation of impact villages from 'Critical Tiger Habitats' (CTH) within ten years and settlement of rights. Rehabilitation package to the forest dwellers in the critical Tiger habitat will be as per the NTCA guidelines.
- Protection measures against anti-poaching activities and deployment of anti-poaching squad at strategic locations.
- Constitution of land and river patrolling parties.
- Check posts at different entry points for monitoring vehicular traffic.
- Intelligence networking, communication and effective coordination to curb wildlife crime.
- Formation of Eco-development Committees (EDC's) involving villagers to protect forests and ensuring people participation in Wildlife Conservation through Eco-Research and Monitoring.

- Estimation of Tiger densities using modern census techniques.
- Setting up Environment Education Centres to raise awareness among public.
- Conservation of habitats of wild and endangered Species.
- Strengthening of protection and monitoring related infrastructure within the Tiger Reserve
- Addressing man-animal conflict issues in a prompt way.
- Human Resource Development and capacity building.
- Promotion of conservation awareness and education.
- Enhancing financial allocation for ensuring sustainable fund flow.
- Integration of Management annual Action Plan with other, sectoral programme.
- Consolidating and strengthening of 'Source Populations' of the Tiger and managing 'source-sink' dynamics by restoring habitat connectivity to facilitate dispersing Tigers to repopulate the areas by way of co-existence agenda in buffer, mainstreaming wildlife concerns and fostering corridor conservation.
- Use of latest technologies like e-eye, drones (unmanned arial vehicle) and use of sniffer dogs for monitoring and protection of the Tiger Reserve.

Approach: Nagarjunasagar Srisailem Tiger Reserve, Srisailem can be approached by the following ways: -

Nearest Railway stations:- Markapur: 75 KMs from Srisailem, Hyderabad: 210 KMs from Srisailem.

By Road:- Kurnool to Srisailem: 180 KMs, Guntur to Srisailem: 220 KMs, Hyderabad to Srisailem: 216 KMs.

By Air:- Nearest Airport at Hyderabad :216 KMs from Srisailem. (Source: Internet and NSTR website).

## Carbon Sequestration, Natural Ecology and Green Economy – Way to Sustainability

By  
Madhukar Swambhu

Normally when people talk about water body rejuvenation these are some aspects that people don't even touch because, all the waterbody treatment technologies are basically working towards physical cleaning of the water. You can rather call them as a water treatment Technology than a rejuvenation because, whenever you rejuvenate the natural ecology of the wetland, it is natural that the carbon sequestration will happen.

**Economy of Ecology – Carbon Credits:** By and large, across the globe, environmental restoration work is considered to be an expense. That's merely lack of knowledge, not just about nature, but also about man-made world our own created economy and market.

Like many people wouldn't be aware of some exchanges like, Carbon Trade Exchange (CTX, <https://ctxglobal.com/>), or EU's Emissions Trading System (ETS) – The world's largest carbon market, or the Western Climate Initiative and the Regional Greenhouse Gas Initiative – The two regional carbon markets in North America, or National CDM Authority (<http://ncdmaindia.gov.in/>) in India that regularly organises Carbon Bazar for buying and selling Carbon credits.

Reuters reported in January, 2020, that "Global carbon trading turnover at record \$214 billion, in 2019".

Just to give you a glimpse of only the Indian market, let's talk about National Clean Energy & Environment Fund (NCEEF), which was created in the year 2011, based on the "Polluter Pays" principle. You can take it as a pollution cess, which is paid by the polluter,

so that the same could be utilised for developing technologies for carbon sequestration or renewable energy resources. The amount of fund collected by them in FY2019–20 happens to be upwards of a whopping Rs.25,000 Crores. That's the size of the addressable market for the agencies and companies working in the Carbon sequestration and sink sectors.

So, let's now explore the opportunity further on how to tap this huge potential market. But before we explore that, we need to get a brief background of how this market got created and how can we solve this to generate revenue.

### **Disturbing Ecologies – created an opportunity:**

On this planet the biggest and the most sustaining human invention is the concept of Waste, in last 400 years.

Otherwise in nature, except for human beings, no other organism or any other life form, has never ever generated anything called waste. Because waste of one organism is useful for another and that is why the cycle goes on. This is the key to sustainability. In nature, the natural cycle exists. Anything that is created, is reared for some time and is finally returned to where it came from, and then regenerated. This cycle is the reason behind the consistent changes and sustainability of this planet for last billions of years. Every natural phenomenon is cyclic.

You see we know about so many cycles in nature – there's a Water cycle that is taught in elementary school, there's a nitrogen cycle taught in middle school, there's a carbon & phosphorus cycle that bothers most of the environmentalists in today's

world. Similarly, there's a food chain in the Jungle that is a Terrestrial chain, likewise in the aquatic Ecology too consistent food chain within the water too. These chains or cycles are necessary to be maintained to keep the nature sustainable, but we break the chain through our process of waste creation.

But we human beings, in all our economic activities, do generate Carbon. Burning hydrocarbons for energy requirements, fuel requirements – all that is generating or emitting greenhouse gases in the air, which in turn is disturbing the air ecology. When we talk about our normal standard living or any economic activity, we do a lot of wastage of water. Though we categorize it into domestic sewage and industrial effluent but the bottom line is, we are mixing a lot of chemicals into the water, which disturb the water quality, when it goes back into a natural waterbody. These chemical toxins create the situation known as eutrophication of Water, which means the decay of the Waterbody has started.

Coming on to the farming, we are adding a lot of chemicals or a lot of microbiology (that we often refer to as “organic farming”) in whatever we're doing in the name of agriculture. Basically, we are playing with microbiology, in implanting biologically active invasive species into the soil Ecology, where it does not belong. The very fact that we are introducing them artificially through anthropogenic activity confirms that it is not their natural habitat, that is only why the artificial introduction or human intervention is required otherwise, had it had been their natural habitat, we could have boosted them there and then itself. Instead of introducing them artificially.

**The Native Ecology:** While we might have a different nomenclature for Soil, Water and Air Ecology as terrestrial, Aqua and Avian, but nature doesn't differentiate, nature doesn't dissect. Nature is holistic. Nature has a single ecology or ecosystem that consists of the five key elements of life, which

are – Soil, Water, Fire, Cosmic Energy and Air. All manifestations of nature travel between these five elements before returning to their origin.

Cosmic Energy is coming in from outside of the planet in form of the sunlight, Fire element is the life efforts – the human knowledge, the human activities, or whatever we call as anthropogenic activities, Soil, Water and Air are clearly visible anyways to be identified.

Whatever we understand is primarily just focused towards a small portion of the entire ecological cycle, like if you talk about carbon sequestration its nothing but balancing the excess of Green House Gases (GHG) in the air. Look at the beautiful system that nature has created, all animals are Carbon dioxide generators or emitters, while all plants are sequestrations agents absorbing carbon dioxides and releasing the oxygen. Plants enable the respiration in animals and animals enable photosynthesis in plants, therefore this symbiotic relationship exists and both help each other flourish. But is that complete? No way! Carbon is the food for soil, plants absorb it and release it in the soil. Like plants fix carbon, there are microbes in soil that fix nitrogen, which is needed by plants for their growth. The barter exchange happens between plant roots and microbes for exchanging carbon with nitrogen, serving each other's purpose. The journey of Carbon finally ends in Soil only, where it originated. But this is still not complete picture. Because 72% of the Earth surface is Water, beneath which is also soil surface, wherein Carbon is needed, deep below the oceans, the Waterbodies, lakes, ponds and rivers. More than 50% of the Carbon sequestration happens through the Waterbodies.

So, you see, everything that nature has created has got its purpose and that is non-transferable. Like a Human cannot be replaced by Tiger or Elephant and vice versa, Human Beings have got



their role in the ecosystem and so have others, from microbes till Blue Whales. All beings are just a kind of manifestation of nature, like a tiger, like a deer, like an elephant, and even a bee also is one of the manifestations. So, everything is irreplaceable everything is non-transferable. No single role can be passed on to another organism and everything is also linked in a symbiotic relationship. When we say we say “Vasudhaiv Kutumbakam”, we referred to this natural ecosystem only where all is linked across the planet even in absence of any physical or visible link.

**The Carbon Wastage:** As explained above, there was a natural carbon cycle being administered through the processes of animal respiration, plant photosynthesis and carbon exchange with nitrogen-fixing bacteria.

But then, we started our economic activities, post Industrial Revolution by burning the hydrocarbons whether it was for fuel or energy or electricity, whether it was through diesel, petrol, gasoline, coal, ethane or methane, when we burnt them, we were emitting extra carbon & GHG into the Air. This needed extra fixation process too.

Although nature had the plan-B too, and that was through Waterbodies, but we chocked it here as well. Because industrial revolution wasn't the only revolution we wanted, we planned many other revolutions – a green revolution, a white revolution, and invented many other ways and means to interfere with native ecology through deforestation, desertification, mining and what not in the name of development and growth.

All this destructive development started just about 400 years back, a time when we did not know the concept of renewable sources of energy, when we still did not know that the energy could be generated by other natural sources too, without disturbing the ecology. Energy was required for Industrial Revolution and it was easily available in form of the

fossil fuel and as a resultant, the greenhouse gases collection in the atmosphere gone up beyond the natural carbon cycle.

### **Nature's Plan-B – Resuscitation of Aqua-Ecology:**

As we now know that apart from plants, the nature's process of carbon sinking of carbon sequestration one was the waterbodies too, the Ecological Rejuvenation of the Waterbodies could result in enabling the plan-B of nature. As per various researchers and their finding, a Waterbody does much higher amount of Carbon sequestration compared to the same size of a green belt, be it a jungle or farm or a forest. The digital repository of Iowa State University carries a retrospective theses and dissertations document compiled in 1960 on measurement of carbon fixation by waterbodies that refers to almost a century of researches done on the subject. (Visit - <https://lib.dr.iastate.edu> for more on this research)

Every water body was naturally designed to do air pollution mitigation apart from carbon sequestration and a carbon sink. Whatever kind of wastewater was coming into the water body was also supposed to be fixed by the water body itself that was the natural system.

Whether it was standing water body or flowing water body, nature designed them to perform all these actions.

The top surface of the waterbody is negatively charged so whatever freely floating solid particle were there in the air, were all designed to get attracted to the top surface of the water body because they were all positively charged. Be it a result of a typhoon or tempest or a volcanic eruption. And it is supposed to get consumer the Aqua Ecology in the aquatic food chain

Coming on to the carbon sequestration of the greenhouse gases emitted, all that was getting absorbed by the waterbodies that is why on the

planet we have over 72% of the planet covered by water. It is just to strike a balance between the amount of carbon being generated and the amount of carbon being fixed. The amount of oxygen which is supposed to be there in the air, more than 50% of it is emitted by the waterbodies. That was the way nature had designed it.

A Waterbody is naturally for Carbon sequestration, reduction of carbon from the atmosphere, perform photosynthesis and make the air cleaner, fresh and oxygenated. That's how they were naturally designed.

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Continuation from page No.8

norm of 150 litres per capita per day (lpcd) while other areas get 40-50 lpcd. Looking at the current situation, there is a need for a paradigm shift. We urgently require a transition from this 'supply-and-supply-more water' provision to measures which lead towards improving water use efficiency, reducing leakages, recharging/restoring local water bodies as

well as applying for higher tariffs and ownership by various stakeholders. A recovery-based closed loop system is the need of the hour. It is time to go back and start using our traditional practice of rainwater harvesting catching water where it falls. Presently, India captures only eight per cent of its annual rainfall, among the lowest in the world.

### Answers of February Quize.

|                           |                   |                        |                    |
|---------------------------|-------------------|------------------------|--------------------|
| 1. Sunderbans             | 2. Uttar Pradesh  | 3. Chilika             | 4. Eucalyptus      |
| 5. The Land of Rising Sun | 6. Douglas DC-4   | 7. Tea                 | 8. Coffee Arabica  |
| 9. Sun                    | 10. Full Moon     | 11. Mongoose and Snake | 12. Atlantic Ocean |
| 13. The Aral Lake         | 14. Pacific Ocean | 15. Cherry Blossom     |                    |

*A large number of birds and fish and other small creatures live in harmony in the wetlands and so these wetlands are very important to us.*

☆☆☆

*Save the wetlands as the future of the Earth depends on it*

## News and Notes

### **Forest Rane Officer attacked by Tiger, escapes narrowly:-**

A forest range officer, T. Sasikumar, was attacked by a tiger at Kolavally in Wayanad district and sustained injuries on Sunday noon. The bite injury on his left shoulder has resulted in a fracture. Sasikumar has been admitted to the DM WIMS Medical College, Meppadi.

The incident occurred at a coffee plantation in Seetha Mount where Sasikumar and his team were searching for the feline following reports of its sightings in human settlements.

Sasikumar narrowly escaped being mauled as the tiger fled from the spot upon the locals raising an alarm. His condition is said to be stable now.

The big cat has been creating panic waves among locals by foraging into human habitats recently. It has been sighted several times and allegedly killed two pet dogs in the last three days. The forest staff has installed two cages in the region to capture the tiger, apart from creating awareness among the locals about the do's and don'ts.

In August, Sasikumar narrowly missed another tiger attack at Velikolli, making this the second such incident in five months. The ranger officer and the forest watcher were trying to drive back the feline from human dwellings when it attacked them. However, the duo managed a narrow escape then.

### **Wild leopard gels up with people on Kullu road:-**

Kullu (Himachal Pradesh), Jan 15 (ANI): In what could be termed as an unbelievable incident, a leopard was seen roaming around on a road filled with people in Himachal Pradesh's Kullu. The wild cat was seen gelling up with people on the Banjar-Kullu road in Tirthan valley. One of the persons was even seen petting the carefree leopard. People

present there were just glancing at the wild cat with both awe and fear.

### **Climate Change May Contribute to a Greater Risk of Stunted Growth in Children:-**

Climate change may contribute more to greater child malnutrition and poor diet than traditional causes such as c, according to research published on Thursday. Although childhood malnutrition has decreased globally over the past several decades, undernourishment has increased since 2015, in part due to warming temperatures and extreme weather.

The United Nations says 144 million children under five were affected by stunting in 2019 as a result of chronic malnutrition, with a further 47 million suffering from wasting caused by low nutrient intake. Experts fear that the decline in essential nutrients in an increasing number of regions will challenge humanity's ability to properly feed 10 billion people by mid-century.

A team of researchers led by the University of Vermont examined diet diversity among more than 100,000 under-fives in 19 low-income countries across Asia, Africa and South America. They then combined this with 30 years of temperature and precipitation data.

They found that higher temperatures were associated with significant reductions in the quality of diet in five of the six regions studied. Writing in the journal Environmental Research Letters, the team warned that climate change could undo the great progress made by the world in child development. "Certainly, future climate changes have been predicted to affect malnutrition, but it surprised us that higher temperatures are already showing an impact," said lead author Meredith Niles, assistant professor of Nutrition and Food Services at Vermont. 'Profound impact'

The study looked specifically at diet diversity a UN metric that measures diet variety and micronutrient intake.

Micronutrients such as iron, folic acid and zinc, as well as vitamins A and D, are critical for physical and mental development in children. Rising carbon pollution has been shown to reduce the levels of these essential micronutrients in many crop staples, including wheat, rice and legumes.

On average, children in the study had eaten ingredients from 3.2 food groups out of a possible 10 including meat and fish, cereals and dark, leafy greens in the previous 24 hours. In contrast, children in China were found to have eaten from more than double the number of food groups 6.8 on average.

The study found that warming temperatures and erratic weather patterns could have “profound short- and long-term impacts on child diet diversity”. Higher temperatures can directly impact the yield of globally important staple crops and reduce livestock productivity, both impacting child nutrient intake.

In addition, women who are pregnant during hot spells often deliver babies with lower-than-average birth rates, putting them at additional risk of stunting. The authors called on governments to incorporate climate change into their plans for improving diets for the most vulnerable children. “That is something we find again and again in this global research,” said co-author Taylor Ricketts, director of the University of Vermont’s Gund Institute for Environment. “Continued environmental degradation has the potential to undermine the impressive global health gains of the last 50 years.”

**Parliament canteen food subsidy ends; prices to go up:-** New Delhi, Jan 19 (PTI) Food served in Parliament canteens for Members of Parliament’s and others will become costlier as a subsidy given for it has been stopped, Lok Sabha Speaker Om Birla said on Tuesday.

While Birla did not specify the financial implications of the move, sources said the Lok Sabha Secretariat can annually save more than Rs 8 crore with the subsidy coming to an end.

Talking to reporters about preparations for the next Parliament session, beginning January 29, Birla also said the Parliament canteens will now be run by ITDC in place of Northern Railways.

Birla said all Members of Parliament will be requested to undergo the COVID-19 test before the start of the Budget session.

While Rajya Sabha will sit from 9 am to 2 pm, Lok Sabha will function in the second half from 4-8 pm. The Question Hour will be allowed during the session for an already fixed time of one hour.

He said all arrangements have also been made for RTPCR COVID-19 tests of MPs near their residence.

In Parliament premises, the RTPCR tests will be conducted on January 27-28, while arrangements have also been made for these tests of families and staff members of MPs.

Birla said the vaccination drive policy finalised by the Centre and states will apply to parliamentarians as well. PTI

Climate change may change rainfall patterns in south India, intensify floods: - New Delhi, Jan 19 (PTI) Future climate change will cause an uneven shifting of the tropical rain belt -- a narrow band of heavy precipitation near the Earth’s equator -- leading to increased flooding in parts of India, a new study warns.

The study, published in the journal Nature Climate Change, examined computer simulations from 27 state-of-the-art climate models, and measured the tropical rain belt’s response to a future scenario in which greenhouse gas emissions continue to rise through the end of the current century.



According to the research, a northward shift of the tropical rain belt over the eastern Africa and the Indian Ocean could result in 'intensified flooding in southern India,' and may impact global biodiversity and food security by 2100.

The scientists, including those from the University of California (UC) Irvine in the US, said this 'sweeping shift' of the rain belt was disguised in previous studies that provided a global average of the influence of climate change.

However, they said climate change caused the atmosphere to heat up by different amounts over Asia and the North Atlantic Ocean.

The current study highlighted the drastic alterations to come over future decades in India by isolating the response in the Eastern and Western Hemisphere zones.

'In Asia, projected reductions in aerosol emissions, glacier melting in the Himalayas and loss of snow cover in northern areas brought on by climate change will cause the atmosphere to heat up faster than in other regions,' said study co-author James Randerson from UC Irvine.

'We know that the rain belt shifts toward this heating, and that its northward movement in the Eastern Hemisphere is consistent with these expected impacts of climate change,' Randerson said.

According to the scientists, the study combined the engineering approach of system's thinking with data analytics and climate science to reveal subtle manifestations of global warming on regional rainfall extremes.

'The complexity of the Earth system is daunting, with dependencies and feedback loops across many processes and scales,' said Efi Foufoula-Georgiou, another co-author of the study from UCI. PTI.

**SC directs NGT panel for river monitoring to submit recommendations on improving Yamuna**

**water quality:** New Delhi [India], January 19 (ANI): The Supreme Court has directed the National Green Tribunal (NGT)-appointed committee for river monitoring to submit before it a copy of its report regarding recommendations made for the improvement of the quality of the Yamuna river water.

A Bench headed by Chief Justice of India SA Bobde said along with the report, the NGT-appointed committee should also apprise it of the extent to which its recommendations have been implemented.

The Bench posted the matter for hearing after two weeks and added the NGT-appointed committee as a party in the case initiated by the top court on its own on the "remediation of polluted rivers"

During the hearing, senior advocate Meenakshi Arora, who was appointed as amicus curiae to assist the top court in the case, said former Chief Secretary of Delhi and an expert member of NGT was part of a committee formed by NGT in 2018 to look at the pollution in Yamuna river.

She submitted that the NGT has appointed a river monitoring committee for the Yamuna river and requested the court to call for a report from the committee.

The top court also asked the Haryana government to file its response on a petition filed by the Delhi Jal Board seeking directions for the Haryana government for ceasing the discharge of untreated effluents resulting in a rise of ammonia levels in river water.

The Bench asked the Haryana government to file its reply in two weeks.

During the hearing, Arora said the water quality level as on January 18 was excellent and ammonia levels were in control. She added that Haryana has said they are in the process of upgrading certain Sewage Treatment Plants (STPs) and CETPs.

Senior advocates Syam Divan appearing for Haryana government contended that the petition filed by Delhi Jal Board was not maintainable and there are many facts that need to be disputed.

Divan said no one wants pollution and the whole notion being projected that it is due to Haryana's acts is wrong.

On the last hearing, Arora had told the court that Yamuna river water is the source of supplying drinking water to major areas in Delhi and therefore, the rising ammonia levels in the river water are harmful and deadly for the citizens of Delhi while adding that ammonia, when mixed with chlorine, will cause cancer and we cannot let the citizens die.

The apex court last week took suo moto cognizance of the issue of "remediation of polluted rivers" observing that one of the major causes of water pollution was the discharge of non-treated/ partially treated municipal waste and effluents of various States and cities.

Today, the Bench also sought response from Rajasthan and Madhya Pradesh in suo motu case.

Last week the Bench issued notice to the State of Uttarakhand, Himachal Pradesh, Haryana, Delhi and Uttar Pradesh along with the Ministry of Environment, Forest and Climate Change, Ministry of Housing and Urban Affairs and Central Board of Pollution Control.

The Bench took the suo moto cognizance on the issue of pollution of water resources and the deterioration in quality of freshwater as being an issue of greater importance affecting the general public and living beings including marine life.

"Deterioration of quality of freshwater has a direct correlation with the quality of public health. It is an acknowledged fact that pollution of water supplies by sewage effluents has been and still is a major cause of a variety of diseases and discomforts," the Bench had stated in its order.

The Bench, on the major causes of water pollution in the cities, had observed that "surface water resources such as rivers, ponds and lakes where effluents are discharged from local bodies are highly polluted. Such discharge of human sewage and other pollutants results into deterioration in chemical, physical and biological properties of water. All these processes lead to degradation of natural environment."

In dealing with the issue of water pollution, the procedure of setting up Sewage Treatment Plants was implemented with the purpose of prioritising the cities that discharge industrial pollutions and sewage directly in the rivers and water bodies, the Bench had said, adding that this is either not treated through a plant before discharging effluents or the treatment plants do not function adequately. (ANI)

*Mistakes, Failures, Insult, Frustration and  
Rejections are part of progress and growth of our life.  
Nobody ever achieved everything worthwhile without facing  
these five things.*

## Arthritis In General

By

Dr N.V. Jayanth Babu

In the study area, the Forests of Eastern Ghats, the occurrence of a rich and varied biodiversity of plant species and valuable medicinal plants could be seen. Tribal and other native doctors living in the villages located in fringes of forest areas are well versed with the wonderful therapeutic uses of several plants and herbs naturally available to them. When compared to modern allopathic medicine and other medicinal practices, the ethno botanical medicinal practices in vogue are effective, cost effective and are safe without any side effects. 25% of the Allopathic drugs, that being produced from all pharmaceutical companies in the world, are derived from plants and herbs only. In Homeopathy more than 60 percent of the drugs are being derived from Plants only.

Several plants are having the medicinal properties for addressing Arthritis successfully in the early stages and a few of such plant species are indicated for appreciation.

*\*Vanda cristata, Vanda tessellates* of Family Orchidaceae are having 13 Flavonoids and is very much useful for curing Arthritis, Arthritic swellings, alleviation of joint pains and make the immobile joints to move freely with flexibility.

*\*Bamboosa arundanaceae* of Family Poaceae: Bamboo / Veduru: contains Benzoic acid, Cynogenic glycoside, Silicon, Calcium, Phosphorous, Zinc and is useful in curing Arthritis, repairing the tear of tendons, ligaments and for curing bone Fractures.

*\*Boswellia serrata*: Family Burseraceae: *Anduga, White dammer*: The Oleo- gum - resin of this plant is used for alleviating inflammation of joints in arthritis patients as well for development of chondrocytes in the cartilage.

*\*Withnia somnifera*: Family Solanaceae: Ashwagandha, helps to increase Testosterone levels in Men, increase in Muscle size and strength, physical energy, stamina and endurance levels which are very much useful in overcoming Arthritis. It is useful for boosting immunity, combats against neurodegenerative diseases and acts as Anti-inflammatory. Ashwagandha reduces and stabilizes blood sugar levels. These facts were confirmed from the research studies conducted on Weight-Lifters, Athletes and other targeted groups over a period of time. Ashwagandha extract 250 mg. with the support of Magnesium reduces negative effects of functioning of Adrenal glands to reduce stress and anxiety and also regulates Thyroid hormone.

*\*Tinospora cordifolia* and other species are *Tinospora crispa, Tinospora sinensis* of Family Menispermaceae - *Tippa teega*- An immune booster-capable of curing around 300 ailments, is also capable of curing Arthritis and tightening / shrinking of stretched Ligaments. *Tinospora* extract 250 mg., together with *Aswagandha* 250 mg once in a day gives relief to the strained joints.

*\*Moringa oleifera* of Family Moringaceae, Drum-stick / *Munaga*, A Miracle tree and a super food which contains 92 nutrients like Calcium, Potassium, Zinc, Magnesium, Iron, Copper, vitamins A, B1, B2, B3, B9, C, D, & E, along with high concentration of 46 antioxidants, 36 anti-inflammatory ingredients and a variety Proteins. 100 grams of dried leaves powder contains 1500 to 1800 mg. of calcium 20 mg of iron, 30 grams of protein, 1600 mg of potassium, Zinc 240 mg, magnesium 473 mg, protein 24 mg., copper 0.9 mg play a key role in addressing inflammation in Arthritis very much effectively. Makes bones much

healthier and stronger. It is Anti-Fungal, Anti-viral, Anti-Bacterial, Anti-inflammatory and Anti Cancerous. Increases blood cells count prevents Anemia and Sick cell disease. Improves eye health, protects against kidney disorders and stomach complaints. Helps arteries from thickening and protects from cardio vascular diseases. Useful in treating Asthma, edema and mood disorders. Decreases blood sugar levels, Cholesterol and Hypertension. A VERY GOOD Immune booster. Dosage 10 grams of shade dried clean leaves powder per day. Green clean leaves without petioles – 100 grams per day per head.

**\**Sesbania grandiflora*** – Avisa - Agathi – Agasthya – Humming bird tree, Family Fabaceae.

One of the 7 indicative plants of saptarshi mandal. There are totally 22 species of sesbania and only 11 species among them are used for edible purpose. The edible parts of sesbania are, soft and tender leaves, flowers, tender pods without petioles and stamens, which are boiled and deep fried, made in to curry by mixing with garlic and grated coconut and eaten. 100 grams of green leaves contain Immense amounts of Calcium i.e., 666 mg to 1130 mg., protein 8 grams, Phosphorous- 80 mg, Iron 4 mg, selenium 2 grams, Zinc valuable in fortifying the bones and reduces the risk of Osteoporosis and Arthritis especially in the old age. Regular addition of this nutrient dense leaves prevent fragile bones, improves bone mineral density and support bone health. Sesbania repairs the damage caused to islet cells of pancreas, decrease the levels of glucose in blood, cholesterol, triglycerides and high blood pressure. Useful in Curing migraine, Alzheimer, sinus, respiratory disorders, prevents and manages colon and lung cancers. Used as anti -dote to addiction of tobacco and cigarette smoking. Contains high levels of antioxidants, also anti-microbial, anti-fungal and anti-tuberculosis properties. A very good immune booster. Dosage 5 grams of shade dried

leaves powder per day. Cleaned green leaves and flowers 25 grams per day

**\**Asparagus racemosus and Asparagus adscendens*** of Family *Asparagaceae*: Satavari - It is proven in the researchs that, this plant reduces inflammation in joints in particular Rheumatoid Arthritis, and Osteo arthritis. Acts as a rejuvenating tonic, astringent, aphrodisiac, and revitalizer. It dilates blood vessels reduces blood pressure and useful in weight loss in obese people.

**\**Cannabis sativa and cannabis indica*** of *cannabaceae*: cannabinoid cannabidiol (CBD) present in this plant makes bones much stronger and accelerates healing of bone fractures. The C B D also helps to heal the unabsorbed cartilage, increases the strength of healed Femurs, therapeutical value to spinal cord injuries, as it lessens the loss of bone mineral that occurs in these injuries. ( Ref: Endoca, European Journal of Pharmacology, International Immunopharmacology). It can also reverse the aging of Brain and capable of eliminating Neuro toxins from the brain completely with the blend of some other plants.

**\**Centella asiatica*** of Family - *Apiaceae*. Saraswathi aaku, Mandukaparni. A perennial herbaceous creeper. The leaves are used in preparation of chutney powders soups salads and in preparation of medicines. The dried leaves powder 100 g contains Calcium 1495 mg., Zinc 2.3 mg, Vit. A - 498.4 mcg, Vit. C 15.4 mg, Vit.K 468.59 mg., Protein 14.8 g, Iron 23.8 mg, Carotenes 32.03 mg, Dietary fiber 7.37g. Free radical scavenging activity is very high i.e., FDL at 84 %, Poly phenol contents 1791 to 4117, Very rich in antioxidants ie., 80% along with other valuable medicinal properties. This plant is having Anti-inflammatory effect on swollen and painful joints. This can efficiently reduce cartilage erosion and discomfort in ailments of Arthritis. Relieves achy muscles. It possesses cognitive - enhancing and antioxidant properties. This plant is a blood purifier,



memory booster, acts as brain tonic, regulates blood sugar, improves circulation and reduce swellings. Tones up skin health, prevents nerves disorders, and also useful for curing Asthma, stomach ulcers, bronchitis, Anxiety, Depression, emotional disorders, Insomnia, Lupus, psoriasis, female Genito-urinary track ailments and Alzheimer. The leaves powder can be used for value addition in smaller quantities in every day curries, owing to the presence of the rich nutritional values and high Antioxidant properties. Dose; Shade dried plants powder 3 grams per day and green plants 10 grams per day.

Now, the value and the importance of ethno medicine is slowly coming out in to lime light. Efforts are being

put forth, by several botanists to bring out such hidden treasure of knowledge as well unidentified therapeutical properties of certain valuable plants and are being made accessible to the public for their benefit. Pharmacogenetic studies are to be conducted extensively from time to time for the plants which are not yet covered, to ascertain and isolate the active ingredients responsible for curing Arthritis effectively.

Different Ethno botanical treatment practices are being adopted which are specific in nature for curing different types of Arthritis, whereas, the following are to be followed inevitably by all types of Arthritis Patients in general.

#### TABLE – A: STEP-1 : For Cleansing All The Inner Parts Of The Body

The Following Plants are used for Oral Administration, Act as Purgatives and are very much effective in Draining Out Impurities, Deposited Salts from the Bone Joints, Vitiated “Vaatha”, Free Radicles and Elimination of Unwanted Waste Materials from the Body -- For Curing Arthritis in General, In Particular, Rheumatoid Arthritis, Psoriatic Arthritis, Gouty Arthritis, Fluorosis Arthritis, and Osteo Porosis.

| S. No. | Name of the species<br>Family<br>Local name          | Part used       | Dose | Method of Preparation and usage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------|------------------------------------------------------|-----------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.     | <i>Ricinus communis</i><br>Euphorbiaceae<br>Aamudamu | Seeds and roots |      | 1 kg of fresh and clean roots of castor plants are to be pounded and to be placed in a stainless-steel vessel containing 4 liters of water. To be boiled till to get finally 1 liter of decoction. This is to be filtered and to be transferred to another vessel containing 1 liter of pure castor oil and boiled till to get finally 1 liter of concentrated castor oil. This oil is given to Arthritis patients @ 2 to 10 ml. mixed in milk or Luke warm water and administered orally in the night, before bed time on alternate days for a period of 40 days. This acts as not only a purgative, but removes and drains out from all the bone joints, all the deposited salts as well as unwanted wastes, causing damage and inflammation. Dosage and duration of administration are to be adjusted depending on the condition, severity of disease and age of the patient. |

| S. No. | Name of the species<br>Family<br>Local name                      | Part used                                     | Dose         | Method of Preparation and usage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|------------------------------------------------------------------|-----------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.     | <i>Anisomeles malabarica</i><br>Lamiaceae<br>Magabeera/Magalinga | Leaves<br>Juice                               | 5 to 10 ml   | Juice obtained from leaves is to be mixed in the milk of she-buffalo, in Luke warm state and made into curds. The milk of a buffalo gave birth to male calf is preferred. The curds thus prepared are to be mixed with rice and eaten in the morning. The vitiated "vaatham" along with all the deposited salts as well as unwanted wastes piled up in the body including free radicles causing damage and inflammation of joints due to RA are drained out completely. This process is to be repeated periodically to achieve anticipated results. |
| 3.     | <i>Moringa tomentosa</i><br>Rubiaceae<br>Togaru                  | Stem<br>Bark<br>Powder                        | 5 to 10 gms  | Stem bark powder is to be mixed in water, 60 ml. decoction is prepared and is given orally for relieving vitiated "vaatam" and for draining out toxins from the body.                                                                                                                                                                                                                                                                                                                                                                               |
| 4.     | <i>Euphorbia antiquorum</i><br>Euphorbiaceae<br>Bonthajemudu     | Latex or<br>Viscous<br>acid<br>milky<br>juice | 2 to 5 drops | Latex is mixed in boiled and Luke warm milk, made into curds and eaten with rice. This act as purgative, acts very much effectively on "Aamavaatham" (RA) and drains out all the unwanted salts, toxins, free radicles waste materials deposited in joints and from the body.                                                                                                                                                                                                                                                                       |

**TABLE-B, STEP- 2**

Plants that strengthen kidneys and help in excretion of nitrogenous waste materials, unwanted salts, and free radicals generated in arthritis patients.

| S. No. | Name of the species<br>Family<br>Local name                             | Part used          | Dose  | Method of Preparation and usage                                                                                                                           |
|--------|-------------------------------------------------------------------------|--------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | <i>Boerhavia diffusa</i><br>Nyctaginaceae<br>Punarnava / tella galijeru | Whole plant powder | 2 gms | The indicated powders of these 3 species are to be mixed in 80 ml of water and boiled to get decoction of 40 ml. and given orally every day, for 40 days. |
| 2      | <i>Abutilon indicum</i><br>Malvaceae<br>Tutturubenda                    | Root powder        | 2 gms |                                                                                                                                                           |
| 3      | <i>Aerva lanata</i><br>Amaranthaceae<br>Konda pindi                     | Root powder        | 2 gms |                                                                                                                                                           |

**TABLE-C, STEP – 3** : Plants used for boosting immunity, preventing and curing ARTHRITIS effectively in the early stages – STEP, 3

| S. No. | Name of the species<br>Family<br>Local name                   | Part used             | Dose                                 | Method of Preparation and usage                                                                                                                                             |
|--------|---------------------------------------------------------------|-----------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | <i>Allium sativum</i><br>Liliaceae<br>Garlic / vellulli       | Bulb's paste          | 4 clefts                             | These 3 ingredients are to be mixed in 100 ml of water, boiled for 10 minutes, cooled and filtered. This is to be taken early in the morning with little honey for 40 days. |
| 2      | <i>Zinziber officinalis</i><br>Zinziberaceae<br>adrak / allam | Rhizome paste         | 1 cm length of rhizome (skin peeled) |                                                                                                                                                                             |
| 3      | <i>Citrus aurantifolia</i><br>Rutaceae<br>Acid lime / nimma   | Fruits                | 1 fruit juice                        |                                                                                                                                                                             |
| 4      | <i>Terminalia chebula</i><br>Combretaceae<br>Karaka           | Dry fruit pulp powder | 1 gram                               | The species shown against the sl. Nos. 4 to 9 are to be mixed together, made into decoction and taken orally every day for a period of 3 months.                            |
| 5      | <i>Terminalia bellerica</i><br>Combretaceae<br>Taani          | Dry fruit pulp powder | 1 gram                               |                                                                                                                                                                             |
| 6      | <i>Phyllanthus emblica</i><br>Euphorbiaceae<br>Usiri          | Dry fruit pulp powder | 1 gram                               |                                                                                                                                                                             |
| 7      | <i>Tribulus terrestris</i><br>Zygophyllaceae<br>palleru       | Fruits powder         | 1 gram                               |                                                                                                                                                                             |
| 8      | <i>Pedaliu murex</i><br>Pedaliaceae<br>Enugapalleru           | Fruits powder         | 1 gram                               |                                                                                                                                                                             |
| 9      | <i>Hygrophylla auriculata</i><br>Acanthaceae<br>Neerugobbi    | Seed powder           | 1 gram                               |                                                                                                                                                                             |

|    |                                                                |                              |                                                   |                                                                                                                                                                                                                                        |
|----|----------------------------------------------------------------|------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | <i>Nyctanthes arbortristis</i><br>Oleaceae<br>Paarijaatamu     | Green ,<br>matured<br>leaves | 8 nos                                             | Green leaves of Nyctanthus are crushed and mixed in 100 ml water. Emblica fruit powder and soaked Trigonella seeds are also to be added and boiled to get decoction. This is to be taken orally in 3 split doses in a day for 1 month. |
| 11 | <i>Phyllanthus emblica</i><br>Euphorbiaceae<br>Vusiri          | Fruit pulp<br>powder         | 5 gms                                             |                                                                                                                                                                                                                                        |
| 12 | <i>Trigonella foenum-<br/>graecum</i><br>Faboideae<br>Menthulu | Seeds                        | 2 gms /<br>1 tea<br>spoon<br>(soaked<br>in water) |                                                                                                                                                                                                                                        |





**SAURABH SHYAM SHAMSHERY, J. Cr. Misc.**  
**Petition No. 977 of 2019**  
**Between**  
**LAXMI PRABHA RAKESH and STATE IF U.P.**  
**and another**

Wild Life (Protection) Act, 1972 – Sections 9 to 51 – Indian Forest Act, 1927 – Section 2 (4), 52-A, 52-B and 52-D – Release of confiscated car – Wild animal “Pangolin” found in the car – Learned Judicial Magistrate rejected confiscated vehicle under section 52-D of Act, 1927 – Hence the present petition – Held, at serial No. 28 of Schedule I of Act, 1972, “Pangolin” (*Manis crassicaudata*) has been mentioned as a wild animal and as such it is also a forest produce – Since the forest produce, seized along with vehicle, belonged to State Government and as such the bar of jurisdiction as provided in section 52-D of Act, 1927 applied in the facts and circumstances of the present case – Jurisdiction under section 451, Cr. P.C. was not available to the Magistrate – Hence learned Magistrate had rightly rejected the application of the petitioner on the ground of jurisdiction – No illegality in the order impugned – Petition finally disposed of.

Counsel for the Petitioner: Rakesh Pande, Kamal Dev Rai and Vishakha Pande.

Counsel for the Respondents: A.G.A.

**JUDGEMENT**

**SAURABH SHYAM SHAMSHERY, J.** – Heard Sri Rakesh Pande, Senior Advocate, assisted by Sri Kamal Dev Rai, on behalf of the petitioner and Sri Sudhir Kumar Pathak, learned A.G.A. alongwith Sri Rohit Pandey for the State.

2. The present petition has been filed by the petitioner with a prayer to set aside the impugned order dated 8.1.2019 passed by the learned Additional Sessions Judge, Court No. 1, Allahabad in Criminal Revision No. 388 of 2018 (Laxmi Prabha Rakesh V. State of U.P.) and order dated 4.12.2018 passed by the learned Judicial Magistrate, Court No. 2, Allahabad in Case Crime No. 316 of 2018 under sections 9 and 51, Wildlife Protection Act, 1972) P.S. Muttiganj, District Allahabad (Annexures No. 9 and 7).
3. Briefly facts of the present case are that on 6.11.2018 on information of an informer, police party intercepted a Safari Car bearing No. U.P. 70 D.C. / 0099 at Naini Bridge, Prayagraj. Five persons travelling in the car were arrested and a wild animal namely Pangolin was found in the car, accordingly an F.I.R. was lodged against five accused namely Ritesh Kumar, Nusrat Hussain, Harimohan Gupta, Akhilesh Shukla and Jai Prakash Sharma under sections 9 and 51 of the Act, 1972. The petitioner herein is owner of vehicle (Safari Car) which was confiscated. The petitioner approached the Court of Judicial Magistrate II, Allahabad by way of filing an application to release the said confiscated Safari Car.
4. The learned Judicial Magistrate, Room No. 2, Allahabad vide impugned order dated 4.12.2018 rejected the application on the ground that under section 52-D of the Indian Forest, 1927 (hereinafter referred as Act, 1927) the Magistrate is not competent to release the confiscated vehicle under the Act, 1972. By way of present petition, the petitioner has challenged the impugned order dated 4.12.2018. Sri Rakesh

Pande, learned Senior Counsel appearing on behalf of the petitioner submitted that the bar under section 52-D of the Act, 1927 would apply only in those cases where the forest produce was belonged to the State Government, even it is assumed that Pangolin alleged to have been recovered to have been recovered from the vehicle was a wild animal covered the under the definition of forest produce. He further submitted that it is not mentioned in the F.I.R. that the Pangolin a wild animal recovered from the vehicle in question was found in or brought from the forest. Learned Senior Counsel further submitted that the Pangolin does not fall under the definition of "Forest Produce" as mentioned in the section 2 (4) (b) of the Act, 1927.

5. Opposing the submissions of the learned Counsel for the petitioner Sri Sudhir Kumar Pathak, the learned A.G.A. submitted that the section 52-D as amended in its application to the State of U.P. specifically states that the Authorized Officer under section 52-A or the State Government under section 52-B shall have jurisdiction, to the exclusion of every other officer, Court, Tribunal or Authority to make order with regard to the custody, possession, delivery, disposal or distribution of the property. Learned Counsel for the State submitted that Pangolin is a "wild animal", which falls under "wild life". The Counsel further submitted that the definition of "forest produce" as mentioned in the section 2 (4) (b) (iii) of the Act, 1927 includes wild animals also. Lastly, he submitted that there is no illegality in the impugned order and prayed that the petition be dismissed.
6. Heard the submissions of Counsel for the respective parties, perused the record and also the written submission filed by the petitioner.
7. In order to decide the present controversy, firstly it has to be considered section 52-D of the Act, 1927 as applicable for the State of U.P. for reference section 52-D is reproduced hereinafter:

"52-D. Bar of jurisdiction in certain cases. – Notwithstanding anything to the country contained in this Act or in the Code of Criminal Procedure, 1973 or in any other law for the time being in force, whenever any forest-produce belonging to the State Government together with any tool, boat, vehicle, cattle, rope, chain or other article is seized under sub-section (1) of section 52, the authorized officer under section 52-A or the State Government under section 52-B shall have jurisdiction, to the exclusion of every other officer, Court, Tribunal or authority, to make order with regard teethe custody, possession, delivery, disposal or distribution of the property."
8. From the above, it is clear that in case of any forest produce belonging to the "State Government" is seized together with "vehicle", the jurisdiction regarding its custody, possession, delivery, disposal or distribution shall be with the Authorized Officer under section 52-A or to the State Government under section 52-B of the Act, 1927.
9. It is to further consider that what is "forest produce", "Forest produce" is defined in section 2 (4) of the Act, 1927. For reference the same is re-produced hereinafter:

"2 (4) "forest-produce" includes

- (i) Wild animals and skins, tusks, horns, bones, silk, cocoons, honey and wax, and all other parts or produce of animals.

10. From the above-mentioned definition of forest produce, it also includes wild animals which is mentioned in section 2 (4) (b) (iii) of the Act, 1927. Now it has to denominate whether the “Pangolin” is a wild animal or not? The wild animal is defined under section 3 (36) of the Act, 1927 that “wild animal means any animal specified in Schedules I to IV and found wild in nature.” At the Serial No. 28 of the Schedule I of the Act, 1927, Pangolin (*Manis crassicaudata*) is mentioned, therefore the Pangolin is a wild animal and as such it is also a forest produce, therefore, the seized vehicle in which the said wild animal was recovered is also belonged to State Government and as such the bar of jurisdiction as provided in section 52-D of the Act, 1927 applies in the facts and circumstances of the present case.
11. This issue is recently considered by the Apex Court in the case of State of Madhya Pradesh V. Uday Singh and connected matters which is reported in. The relevant Paragraph Nos. 35 and 36 of the above case.
12. The section 52-D of U.P. Act 1 of 2001 to the Act, 1927 as applicable in State of U.P. is similar to the section 52-C of M.P. Act (25 of 1983) of the Act, 1927. Therefore, facts of the present case are squarely cover with the facts of the case State of M.P. v Uday Singh (supra) and therefore, jurisdiction under section 451, Cr. P.C. is not available to the Magistrate and therefore the learned Magistrate has rightly rejected the application of the petitioner on the ground of jurisdiction.
13. In view of the above discussion there is no illegality in the impugned order, therefore, the relief sought in present petition is liable to be rejected and accordingly rejected. However, this order will not come in the way, in case the petitioner approaches the concerned authority as provided under section 52-D of the Act, 1927 as applicable for the State of U.P. and the same will be considered in accordance with law.
14. In view of the above, this petition is finally disposed of.

Source from “**Environmental and Forest Law Times**”.

Collected by: **G. RAVINDER**, Mobile No. 986641164.

*Wetlands are beautiful areas that are a  
storehouse of fish  
and the natural habitat of many other creatures.*

☆☆☆

*Healthy wetlands are imperative  
for a healthy Earth*

## Legal Notes

### **M/s. Standard Essential Oil Industries Vs. Forest Range Officer, Kasargod.**

Sri Abdul Rahman and Sri N.A. Abdulla Haji are partners in the firm M/s Standard Essential Oil Industries. On 16.04.1993, Kasargod Police conducted a search in the premises called "Rahmith Manzil" and seized 125 Kgs of sandalwood oil in 5 barrels.

The matter was referred to the Forest Department. The Authorized Officer issued a notice under the Kerala Forest Act proposing to confiscate the sandalwood oil. The accused replied to the show cause notice and contended that the above quantity is the accounted stock; 75 Kgs of sandalwood oil is distilled in the factory premises itself as supported by the stock register and 50 Kgs of sandalwood oil was purchased from M/s Punjab Aromatic at Calicut on 15.04.1993 covered by invoice of the said purchase. The entire stock was moved from the factory premises to the residence of the managing partner because of some maintenance works of the factory.

After considering the objections of the accused, the Divisional Forest Officer ordered on 03.07.1995 confiscation of the entire stock of 125 Kgs of sandalwood oil.

Dissatisfied by the confiscation order, the accused filed writ petition No. 15114 of 1998 which came to be dismissed on 19.05.2004. The writ petitioners filed an appeal to the Division Bench in writ appeal no. 1458 of 2004. The DB upheld the order of confiscation and dismissed the writ appeal.

The appellants have filed appeal in the Supreme Court by Special Leave Petition. The appeal was heard by a Bench comprising Sri R.K. Agrawal and Sanjay Kishan Kaul, JJ.

The Hon'ble Supreme Court considered the appeal on two issues:

- (1). Whether the High Court erred in upholding the order of confiscation under Section. 61-A of the Act; and
- (2) Whether confiscation of the sandalwood oil can be ordered under Section 61-A or 69 of the Act.

The Hon'ble Supreme Court heard the arguments of both sides and discussed the points urged in following manner:

1. The Authorised Officer ordered confiscation of the sandalwood oil under Section 69 of the Act. But the Division Bench has misdirected itself in framing the issue and upholding confiscation under 61-A.
2. The counsel for the appellants argued that Section 61-A is only a rule of evidence which facilitates the proceedings under the Act and the said section gives nowhere the power to confiscate. There is sufficient evidence that the sandalwood oil did not belong to the Central or State Government.
3. The court analyzed the provisions of the Act in 61-A and Section 69 of the Act.
4. Section 61-A provides, where it is believed that a forest offence has been committed in respect of timber, charcoal, firewood or ivory, belonging to the Government, the seized property will have to be produced before the Authorized Officer, who, according to the prescribed procedure, whether prosecution is launched or not, may order confiscation of seized property with all tools, vehicles etc., used in commission of the offence.



5. Section 69 provides for presumption that property belongs to State or Central Government when in any proceeding unless the contrary is proved.
6. The two sections are inserted in the Act to prevent smuggling timber, Charcoal, firewood and ivory belonging to the Government.
7. The definition of forest produce in section 2 (f), shows that other than timber, charcoal, firewood, and ivory, it includes wood oil, gum, resin, natural varnish, bark, roots of sandalwood etc. Undoubtedly, sandalwood oil is a forest produce but 61-A is limited only to categories specified therein and does not give power of confiscation of sandalwood oil.
8. Section 69 is only a rule of evidence which raises a mandatory presumption that unless otherwise proved is a Government property.
9. The power of confiscation of sandalwood oil gets vested in the authorities through section 61-A only after the Kerala Forest Act (Amendment) Act 2010 when certain specific provisions relating to sandalwood were inserted through chapter VI A and Section 47H which specifically provide for seizure and confiscation of sandalwood and sandalwood oil. The present case being related prior to the time of amendment in 2010 was made, the amended provisions do not apply. Hence the confiscation of sandalwood oil is liable to be aside.
10. In view of the detailed discussion, the Supreme Court considered that the High Court erred in upholding the order of confiscation. Accordingly, the appeal is allowed and the order of confiscation is set aside

The judgment is pronounced on April 19, 2014.

Reportable

K.B.R





## Birthday Greetings

*We wish the following born on the dates mentioned*

### *"A Very Happy Birth Day"*



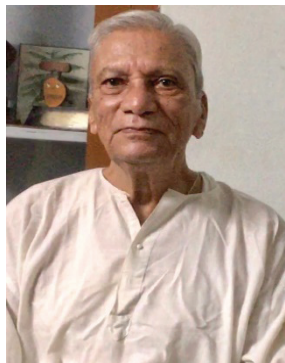
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| 13. V.V. Rajan 02-03-1945            | 13. S.P. Sulthan 04-03-1989               |
|                                      | 14. K. Vinod Kumar 05-03-1979             |

**Secretary**



## OBITUARY

### Shri Dinkar Sridhar Rao Gangakhedkar [1934 – 2021]



**Shri Dinkar Sridhar Rao Gangakhedkar (1934-2021)** retired IFS Officer breathed his last in the early hours of Jan 5th, 2021 at Aurangabad after brief illness, he was 87 yrs. Having passed out in 1961 from the Indian Forest College, D S Gangakhedkar worked in the erstwhile state of A.P. as DFO in various districts. He worked as DFO in Chittoor, Kaghaznagar Divisions and for long time in Wildlife management circles of Hyderabad and Vishakhapatnam. A person of simple habits, was sincere & straightforward. An inquisitive officer who did not compromise on any issue of forest conservation. Shri D S Gangakhedkar was a passionate forester of erstwhile generation who expressed himself truly and frankly. To his credit he prepared Working Plan for Warangal South Division.

A good sportsman fond of playing table tennis & Cricket and good photographer. Even after his retirement in 1992, He used to use bicycle to cover short distances. He documented his experiences with wildlife- including how he tracked a tiger in Mannanur Plateau and miraculously escaped from the jaws of death!!

He is survived by his spouse Smt. Sudha Gangakhedkar and three sons Kiran, Arun & Deepen & six grandchildren.

The Members of Retired Forest Officers Association of Telangana & A.P. states convey their condolences to the bereaved members of His family. May his departed sacred soul rest in eternal peace. Om Shanti. **NRK**

**Professor Binod C. Choudhury**, a retired scientist from the Wildlife Institute, Dehradun, an expert in the field of wildlife conservation and resource management, active in Specialist Groups of Marine Turtle, Cetacean, Freshwater Turtle and Tortoise, and Crocodile conservation breeding programs. These are his memories from the 1980s, during his tenure at Nehru Zoological Park, in Hyderabad:

*Indeed, a sad news, the passing away of a clean hearted, sincere, fun loving and real field worker who cared for the forest and wildlife. In fact, when he was surveying the proposed NSTR, he used to move in to real interiors and used to meet forest dwellers and tribal to collect tiger occurrence information and this action of him was so intense and regular, that the tribal used to call him "Puli Dora". He was also probably the only forest officer to witness a tigress with the litter of a particular year with the surviving litter of the previous year. He was ridiculed for saying this by his seniors and bosses who said this is not possible. However, they had to keep quiet and eat the humble pie when I have shown them the same kind of sightings by E. W. Champion as described in his book. There are many more interesting stories of him which each person who had interacted with him will remember. RIP Mr Gangakhedkar.*



## OBITUARY

### Sri Pedapatnapu Nageswararao

Sri Pedapatnapu Nageswararao, DFO RTD, 1974-76 batch of SFRC, Coimbatore, reached Lord's abode on 10th January, 10-45 am due to ill-health. We wish his soul attains eternal bliss.



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