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## C.P.R. ENVIRONMENTAL EDUCATION CENTRE

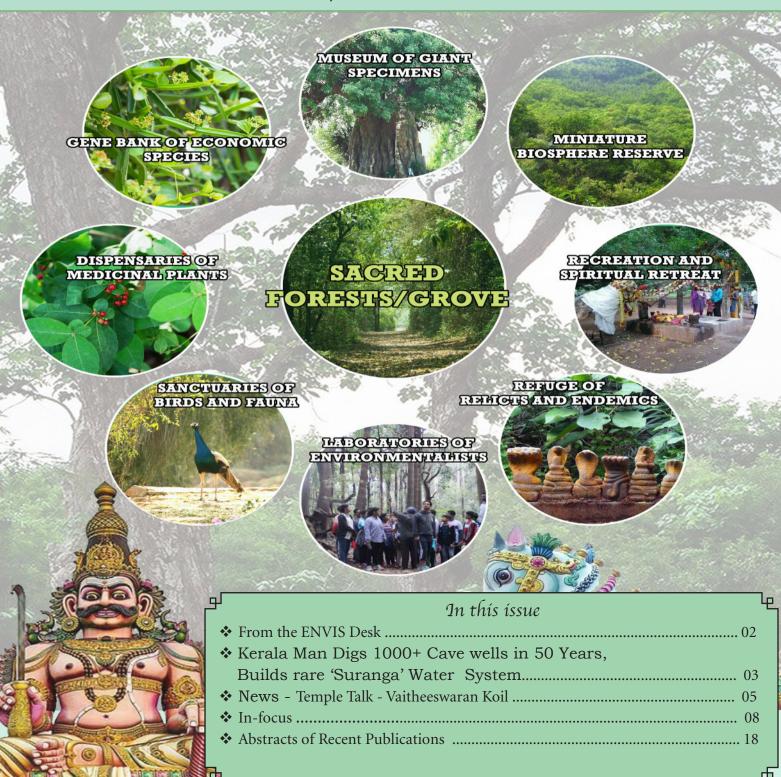


## ECO-HERITAGE.COM ENVIS Newsletter



Thematic Area: Conservation of Ecological Heritage and Sacred Sites of India

January - March 2021, Vol. XIX, No. 4





## From the ENVIS Desk...

The ENVIS Centre at CPREEC was established in April 2002 by the Environmental Information System (ENVIS) of the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India and assigned the responsibility for being the focal point for the thematic area of "Ecological Heritage and Sacred Sites of India".

Heritage is the cultural, social and spiritual legacy that we inherit from our past and pass on to the future. Indian heritage is unique in its reverence for Mother Nature in all her manifestations. Ancient traditions, rituals and practices have embedded this reverence in religion and even in normal day-to-day living. The respect for nature and the belief that every organism on earth has a special role in life's cycle forms the core of our ecological heritage.

To maintain humankind's resilience in the face of change, it is necessary to draw on the best available knowledge, regardless of its origins. The process of updating knowledge systems provides opportunities to develop a deeper understanding of observed events and their consequences. It facilitates and leads to a joint assessment of information, resulting in new insights and innovations, and in better informed actions.

The main purpose of this "Newsletter" is to bring forth and publish articles concerning all aspects related to the knowledge of ecological traditions in India as well as novel interpretations and theoretical issues related to the conservation of the same.

Suranga (also Surangam or thurangam) (English: Tunnel well) is a traditional water management system used to provide a reliable supply of water for human settlements and irrigation in the state of Kerala. A suranga is basically a horizontal tunnel dug in the slope of a laterite hill for about 30 metres (98 ft) to 40 metres (130 ft), which uses gravitational force for extraction of the underground water and collect into a storage tank. As both the areas are covered by uneven and steep laterite hill which makes boring of traditional bore well hard and expensive, surangas are considered as a relatively cheap option.

Digging through the 'suranga' cave wells, one of the oldest water harvesting systems found in the regions of north Kerala and Karnataka, 67-year old Kunjambu has singlehandedly provided water to the villagers of Kundamjuzhy, a village in Kerala's Kasargod district for more than 50 years. Kunjambu, who started digging at the age of 14 is now one of the very few suranga diggers left in the country and claims that thus far, he has dug out over 1000 of these cave-like wells. This issue covers an article on 'Kerala man digs 1000 + cave wells in 50 years, builds rare Suranga water system'.

CPREEC ENVIS Centre has already published books about the "Ecological Traditions" of fifteen (15) states of India, viz., Assam, Andhra Pradesh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh & Chhattisgarh, Maharashtra, Meghalaya, Odisha, Punjab, Rajasthan, Tamil Nadu, and West Bengal. The Centre has, over the years, promoted and encouraged communities to adopt local traditions, practices and rituals that possess ecological significance.

The Centre also focuses on eco-restoration, conservation, creation of environmental assets and advocates the sustainable use of natural resources. The Centre has restored several degraded sacred groves in Andhra Pradesh, Karnataka and Tamilnadu.

The Centre has also documented sacred groves/ forests (10,377), sacred gardens (59), sacred plants (90), sacred animals (57), sacred rivers (25), sacred water bodies (373), sacred mountains (174), sacred cities/sites (219), sacred seeds (10), sacred caves (209) and sacred pilgrimages (37), traditional ecological knowledge (44) and UNESCO World Heritage Sites in India (33) till date.

We would like to thank our readers for sharing their articles, photographs and also for their queries and feedback regarding our newsletters, publications and about information provided in our website www. cpreecenvis.nic.in

We cordially invite other scholars and interested persons to share their knowledge and information by contributing popular articles and good quality photographs on the subject areas present in our website.



# KERALA MAN DIGS 1000+ CAVE WELLS IN 50 YEARS, BUILDS RARE 'SURANGA' WATER SYSTEM

"When digging for borewells, you strike right at the heart of the earth, leading to a complete drain out of the groundwater. The Suranga system is not like that, it requires the digger to be aligned with nature."

· Post author: Serene Sarah Zachariah

• Post published: April 21, 2020

Digging through the 'suranga' cave wells, one of the oldest water harvesting systems found in the regions of north Kerala and Karnataka, 67-year old Kunjambu has singlehandedly provided water to the villagers of Kundamjuzhy, a village in Kerala's Kasargod district for more than 50 years.

Kunjambu, who started digging at the age of 14 is now one of the very few suranga diggers left in the country and claims that thus far, he has dug out over 1000 of these cave-like wells.

#### What are Surangas?

'Suranga' in Kannada or 'Thurangam' in Malayalam is a narrow cave-like structure dug into the lateral sides of hills.

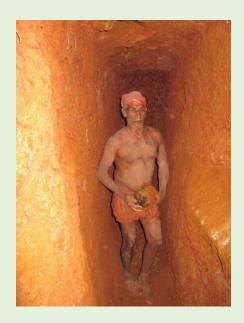


These unique cave wells are almost 2.5 feet wide can be dug up to 300 meters until a water spring is found, and are considered to be one of the most sustainable water harvesting systems in these regions.

The water that flows into the tunnel is channeled into a reservoir that is built near the tunnel. Once the water starts freely flowing from the springs, there is a steady supply of freshwater for years, without the use of motors or even pumps.

Said to have originated in Iran, this sustainable water harvesting system is now sadly being overpowered by the borewell culture, and many of the existing surges have become futile.

#### Kunjambu's Journey



"This job requires a lot of strength and determination. I always set out with a pickaxe and a candle with a hope to complete digging these caves in one go," begins Kunjambu.

"When you're digging a cave that's almost 300 meters deep, the oxygen levels tend to drop. To ensure that I don't end up suffocating in these caves, I carry a matchbox and a candle with me. So if I'm not able to light the match, it means the oxygen levels are deficient, and I have to exit immediately," he adds.

From finding the right place to start digging, to ensuring that the caves don't collapse, Kunjambu says that all the steps to the suranga system require the digger to be aligned with nature.

"For instance, if I want to find the right place to start digging, I look at the plants nearby. If these plants are flourishing and the soil has a certain amount of wetness, then it means we have found the spot. This knowledge can only be obtained through years of experience and along with that you also develop a certain amount of faith in nature," he explains.

#### Rise of the Borewells

"When I initially started, surangas were an essential part of our culture, especially because of the need for water for agricultural purposes. But soon, borewells began popping up and became the alternative. Slowly, we started losing our jobs, "he explains.

As surangas require manual labour in comparison to the digging of borewells, the rates are much higher. Kunjambu explains that this may be one of the reasons for the sudden switch to borewells.

Consequently, many diggers, including Kunjambu, who do not support borewell culture, had to take up the job because it is the only means of livelihood available.

"Borewell culture is very harmful to our nature, unlike surangas. When digging for borewells,

you strike right at the heart of the earth, leading to the draining out of the groundwater. It can also make the nearby areas prone to earthquakes because it disrupts the natural way of things," explains Kunjambu.

### **Benefits of Surangas**

"Surangas have been an ideal resource for farmers for a long period of time. They are a perennial source of water, and borewells can never become a replacement to this system, especially in regions like Kasargod where the tendency for a collapse is much higher," explains Shree Padre, a renowned writer from Kasargod.

Today there are more than 5,000 surangas in the Kasargod district, but most have become ineffective because of its decrease in popularity. However, people like Kunjambu are not ready to give up, yet.



"Although the suranga system is slowly dying, I want to continue my journey in the depths of the earth as long as I can, in hope that this system can be revived again," Kunjambu concludes.

#### Source:

https://www.thebetterindia.com/224351/keralaman-water-harvesting-system-suranga-cave-wellsnatural-ancient-techniques-india-ser106/

## — News —

# TEMPLE TALK – VAITHEESWARAN KOIL Dr. A. Abirami and Dr. G. Srinivasan\*

#### Introduction

Vaitheeswaran Koil (11° 11' 74.36" N; 79° 42' 22.73" E) is a town in Nagapattinam district, Tamil Nadu which is famous for the Vaidyanatha Swamy Temple. The temple is located near Sirkazhi, mid-way on the Chidambaram-Mayiladuthurai State Highway.



Courtesy:http://www.divinebrahmanda.com/2013/08/sri-vaidhyanathan-temple-vaitheeswaran.html

The Sthala Vriksha (temple tree) is *vembu* (*Azadirachta indica*, neem tree), with its thick foliage, and it is found near the eastern inner courtyard and the eastern Rajagopuram. In one of the three niches of the paved portion of the tree is an old image of Lingam for worship. The deity within the shade of this sacred tree is called *Vempadimal* and *Aadi Vaithianathapuri*. It is interesting to note that this small place is the origin of the enlarged structures connected with the present temple complex. It is said that the Margosa tree with its thick foliage murmurs through its leaves the song of praise

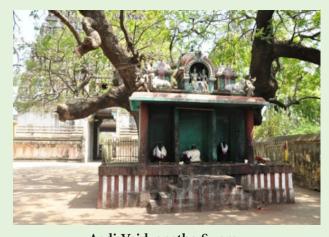
to the Lord as the celestial healer of all human diseases. It is believed that inhaling the sweet smell and eating the leaves of this tree one can get the gracious relief from many ailments (Subramanian and Rajendran, 1985). The sthala viruksham is believed to be passing through different yugas: Kadamba tree (Neolamarckia cadamba) during the Krita Yuga, Bilva tree (Aegle marmelos) during the Threta Yuga, Vakula or Makizha tree (Mimusops elengi) during the Dwapara Yuga and in the Kali Yuga the neem tree (Azadirachta indica). The different transformations of this tree are highly imaginative, but devotees attach much importance to this tree with firm religious faith

### **Main Deities**

Vaitheesvaran koil has been well laid out and it covers a large area for different artistic structures. The two Rajagopurams on the eastern and western side are of equal grandeur and importance. In the interior, there are two kattai (short) gopurams on the eastern and western side as well. Vaidyanatha Swamy (Lord Shiva) and Thaiyalnayaki (Lord Sakthi) are the presiding deities of this temple. The word Vaitheeswaran is a Tamil derivative from Vaidya (Doctor) and Ishvara (God). The Selva Muthukumara Swamy shrine is also important in this temple. Both Lord Aadi Vaidyanatha at the entrance of the temple and the presiding deity Vaidyanatha are facing west. According to scriptures, worshipping the Lord facing west brings the devotee the

<sup>\*</sup> C P R. Environmental Education Centre, Chennai

benefit of worshipping in 1000 Shiva temples. Dhanavantiri Siddhar attained Samadhi here. People pray here for remedy from various ailments like boils, pimples scars, etc. (Jagadisa Ayyar, 1991).



Aadi Vaidyanatha Swamy
Courtesy: https://en.wikipedia.org/wiki/Vaitheeswaran\_
Koil

Inscriptions from the period of Veerapandiyan, Kulothunga Chola I, Vikrama Chola, Achuthappa Nayak, and Thuljaji Maharaja are found here. The temple architecture and sculpture is a combination of Pallava, Chola, Nayak and Nagaratthar style. Chola style of architecture was a mature style with an integrated conception of a temple. As there is a separate Amman shrine it can be said that this was an addition to the Swamy shrine built during the later Chola period. It is said that Thuljaji Maharaja constructed the Thatticutri mandapam of Amman Sannidhi in 1767 A.D. The western part of the Mahamandapam was constructed by Thiruvaruran of Kadambanur. From the available copper plates it is known that king Gurumurthi Nayak had constructed the Swami mandapam starting from the Amman shrine to western kattai gopuram. The front mandapam of the Amman shrine was constructed by Tungappa Chettiar of Kanadu Kathan in 1892 A.D. (Subramanian and Rajendran, 1985; Jagadisa Ayyar, 1991).



Neem tree –Sthala Vriksha Courtesy: http://www.divinebrahmanda.com/2013/08/ sri-vaidhyanathan-temple-vaitheeswaran.html

### Jatayu kundam

There are Shiva lingas worshipped by Rama, Jatayu, Skanda, Surya and Angaraka. It is believed that Rama and his brother Lakshmana cremated the vulture king Jatayu who was killed by Ravana when he tried to prevent the abduction of Sita at this place. There is a pond at this temple called Jatayu kundam.

#### Angaraka sthalam

It is one of the Navagraha temples associated with the planet Mars (Angaraka). "Angaraka dosha" is the unfavourable position of Angarakan in the horoscope. People who are affected by a malefic Mars in their horoscope perform Angaraka pooja to neutralize the negative effects. According to legend, Planet Mars was once afflicted with red leprosy and was cured by Vaidyanatha Swamy, and from then on it is treated as Angaraka sthalam.

#### **Temple Tank**

There are 18 temple tanks within this temple. Siddha Amirtha Kulam is the most prominent. This tank is situated opposite to the Thaiyalnayaki shrine. This tank has medicinal properties and is believed to cure all diseases.

The legend goes that when *siddhas* in the Kaliyuga offered 'Devamirtham' to the lord, a part dropped into the tank and hence it is called Siddha Amirtha Kulam. Angaraka (Mars) was relieved of red leprosy when he bathed in this *tirtham* (CPREEC, 2002). The devotees take a holy dip in the temple tank before worshipping the deity. It is also a local belief that dissolving jaggery in the waters cures skin diseases. However, these days the temple administration is very conscious about keeping the water clean and has discouraged this practice. A separate bin has been placed near the temple tank to deposit the jaggery.



Siddha Amirtha Kulam

Courtesy:https://www.exploretemples.in/en/ads/5d6617459ef96/Temples/Vaitheeswaran-Koil-Temple-

#### Special feature

Many Siddhars had performed abishekham with nectar and gained many boons. It is said that this place is the headquarters of medical science that offers cures for several diseases. A medicine ball (Thiruchandhu Urundai), made of anthill sand, abishekha water, veppilai (neem leaf), abishekha sandal and sacred ash is consumed to bring relief for any disease. Those suffering from skin problems get the punugu (musk) oil for applying on their body for relief. Lord Vaidyanatha cures not only the physical pains of the people but also cures them from the recurring disease of births and deaths (Sundararajan and Mukerji, 2003).

## Worship and offerings

First tonsuring ceremony of kids is performed in this temple for the general health of the child. Mavilaku (lighting lamp in rice cakes) is a form of worship practised. The practice of mixing salt and pepper in front of the temple mast and the pot near the temple tank is also followed. It is a practice to purchase silverplated images of body parts to put in the Hundi (vessel for offering) to fix ailments (Raj, et al. 2006).

#### Other interesting facts

The village is also known for palm leaf astrology called Naadi Jothidam in Tamil. The great sages (Siddhars) of India had the power to look into the past and future of the entire universe and had written these predictions on palm leaves. The texts are mainly written in *vatteluthu*, an ancient Tamil script. The palm leaves are possessed by the families of astrologers in Vaitheeswaran temple and were passed down from one generation to another.

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# —— In-focus ——

C.P.R. Environmental Education Centre (CPREEC) ENVIS Resource Partner (RP) on Conservation of Ecological Heritage and Sacred Sites of India, organized the Green Skill Development Programme (GSDP) Certificate Course on Value Addition and Marketing of NTFPs (plant origin) Bamboo Handicraft of the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India at Port Blair from January 28, 2021 to March 27, 2021.

After the selection of trainees to undergo the training, the course was inaugurated on January 28, 2021. Shri. Ajith Anand, Director, Department of Industries, Port Blair inaugurated the course and addressed the trainees. Shri. A. Gopal, Project Officer, CPREEC gave a brief introduction to the course. PowerPoint presentation on the importance of various Non-Forest Timber Products (NTFPs) with special reference to Bamboo and Sustainability Education was developed by Shri. U. Thirunavukkarasu, CPREEC, Chennai for the course.



Selection of the trainees



Inauguration by the Chief Guest Shri. Ajith Anand, Director, Department of Industries, Port Blair



Shri. J. Chandra Mouli, Assistant Director, Branch MSME, Port Blair interacted with trainees



Shri. Mohankumar, Postal Bank Manager interacted with trainees



Mr. Omkar Nath, Development Manager, Andaman Nicobar State Cooperative Bank Ltd, Port Blair, interacting with trainees



Demonstration on tools handling



Mrs. Sunita Kumari, Asst. Director,
Department of Industries, Andaman and Nicobar
interacting with trainees about the schemes for
entrepreneur development



Training on tools handling





Trainees attended the webinar on Intellectual property rights, CLCS-TUS & GeM 4.0 organized by Branch MSME Enterprises – Port Blair









The trainees were taken on an exposure visit to -

- Sakorika Emporium, Department of Industries, Khadi Gram Udyog and private shops to learn the market strategy.
- ❖ Dairy Farm for local bamboo craft artisan.
- ♦ Met Shri. Jankai Rao, Bamboo seller at Dairy Farm
- Silviculture Nursery, Department of Environment and Forest, Nayashehar on how to cultivate and harvest bamboo for crafts
- ♦ Botanical Garden, Nayashehar to identify different varieties of Bamboo





Bamboo products made by the trainees





Bamboo products made by the trainees





Chief guests viewing the bamboo products made by the trainees



Trainees with their GSDP Course completion certificates at the valedictory

C.P.R. Environmental Education Centre (CPREEC), Chennai ENVIS Resource Partner (RP) on Conservation of Ecological Heritage and Sacred Sites of India, organized the Green Skill Development Programme Course (GSDP) on Value Addition and Marketing of NTFPs (Plant Origin): Coconut Shell Handicrafts of the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India at Gudalur, The Nilgiris from January 29, 2021 to March 29, 2021.

The course was inaugurated on January 29, 2021. Mr. F. Robert, NGC Coordiantor, Gudalur Educational District inaugurated the course and stressed the importance of the course and the opportunity provided to them in earning a living. Shri. M. Kumaravelu, CPREEC, Ooty Field Office gave a brief introduction to the course. PowerPoint presentation on the importance of Coconut shells handicrafts and the marketing opportunities was developed by Dr. G. Srinivasan, CPREEC, Chennai for the course.



Inauguration by Mr. F. Robert, NGC Co-ordinator, Gudalur Educational District



Felicitation by Mrs. Leela Krishnan, Secretary, R.K. Trust, Nilgiris



Trainees involved in processing the coconut shells





Trainees involved in processing the coconut shells





Trainees making products using coconut shells



Demonstration and training on natural color designing by Artist Mr. Anil Kumar from Mysore









Exposure Visit to Cauvery, Karnataka State Handicraft Development Corporation Ltd., Mysore, Karnataka











Display of Coconut shell handicrafts made by the trainees



Participants with course completion certificate during the valedictory

# மகளிர் குழுக்களுக்கு சுயதொழில் பயிற்சி

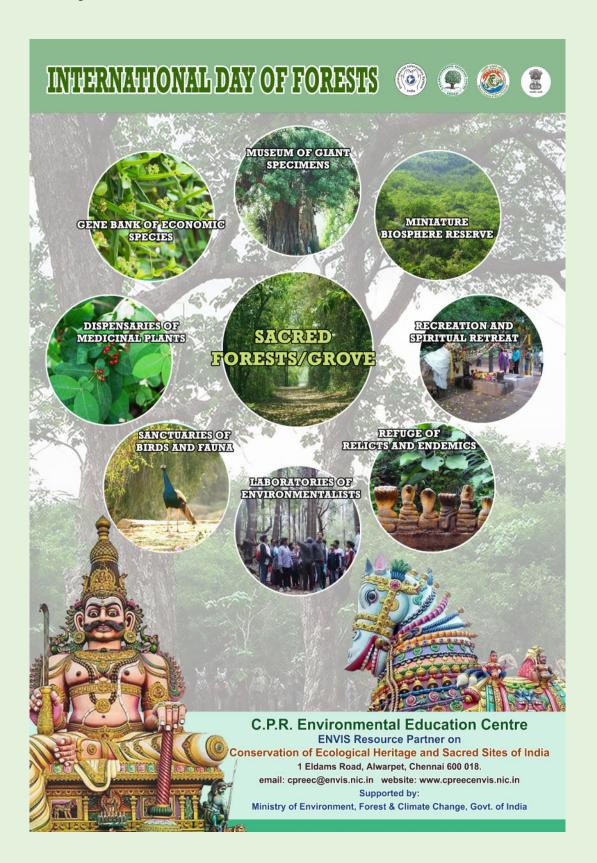
கூடலூர், மார்ச் 4: கூடலூரில் மகளிர் குழுக்களுக்கு சுற்றுச் சூழல் பாதிப்பில்லாத சுயதொழில் பயிற்சி வியாழக்கிழமை அளிக்கப் பட்டது.

சி.பி.ஆர். சுற்றுச் சூழல் கல்வி மையம் சார்பில் மத்திய அர சின் சுற்றுச் சூழல் மற்றும் வனம், பருவநிலை மாற்றம் அமைச்ச கத்தின் நிதி உதவியில் இந்தப் பயிற்சி அளிக்கப்பட்டு வருகிறது. இதில் சுற்றுச் சூழல் பாதிப்பில்லாமல் தேங்காய் சிரட்டைக ளில் கைவினைப் பொருள்கள் மற்றும் பல்வேறு வீட்டு உபயோ கப் பொருள்களைத் தயாரிப்பது குறித்தும், தயாரித்த பொருள் களை எவ்வாறு சந்தைப்படுத்துவது என்பது குறித்தும் பயிற்சி யளிக்கப்பட்டது.

Newspaper Clipping March 4, 2021

## **International Day of Forests-2021**

As part of observing International Day of Forests-2021, CPREEC ENVIS –RP, Chennai designed and released a poster on Sacred Forests.



# ———— Abstracts of Recent Publications ————

\* Madhurima, D., and Ewuukgem, L. D., "Determinants of word of mouth intention for a World Heritage Site: The case of the Sun Temple in India", Journal of Destination Marketing & Management, Vol. 19, 2021.

This study investigates the role of authenticity, self-congruity and emotional attachment in generating positive Word of Mouth (WOM) intentions in heritage tourism. The 13th-century Sun Temple of Konark (Surya Mandira), in Odisha, India, a United Nations Educational, Scientific and Cultural Organization (UNESCO)-listed World Cultural Heritage Centre was selected as the destination for the study. A survey of residents (n = 627) and tourists (n = 473) was conducted. Statistical analyses indicate that residents and tourists are found to be different from each other in terms of their emotional attachment, existential authenticity, self-congruity, and WOM intentions. This study is one of a few that focused simultaneously on both residents and tourists, even though most of the earlier works neglected the residents' perspective as they investigated the relationship marketing and customer-based model of authenticity.

**Keywords:** Authenticity; Emotions; Self-congruity; WOM; Residents; Tourists.

Amit, K., Taxak, A. K., Saurabh, M., and Rajiv, P., "Long term trend analysis and suitability of water quality of River Ganga at Himalayan hills of Uttarakhad, India", Environmental Technology & Innovation, Vol. 22, 2021.

River Ganga flows in the northern part of India and is treated as sacred water resource. The river receive huge amount of partially treated and untreated waste from industrial, agricultural, and religious activities being practiced across the flow, causing deterioration of water quality (WQ) of the river. The present study aims to assess the pollution status and trend of WQ in the river and its primary tributaries (river Bhagirathi and Alaknanda) based on 49 years (1971-2020) data from various locations using water quality index and graphical trend analysis based on a Cartesian coordinate system with 1:1 (45°) line as a benchmark. The results reveal that the WQ in the rivers was good as the estimated values of all WQ parameters were within their permissible limits for drinkable water. The river water was suitable for agriculture activity as sodium-absorption-ratio (SAR) was less than 10 at all sampling-locations. The river WQ was slightly polluted during year 2015–18 as the comprehensive pollution index was in the range of 0.40–1.00. The result has implications for the water resource planners, managers, policymakers, and environmentalists responsible for the preservation and restoration of WQ of Ganga and may serve as a strategic model for other major rivers in the region.

**Keywords:** Fresh water; Potable water; Sen Trend analysis; Water impurity; Water resource.

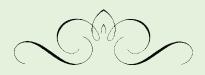
Dilipkumar, P., and Souvik, M., "Tamarind (Tamarindus indica) seeds in Health and Nutrition", Nuts and Seeds in Health and Disease Prevention (Second Edition), Chap. 14, pp. 171-182, 2020.

Ganges is ensitization with regard to preserving the ecology of national river of India.

The integral role of seeds in preagricultural diets is understandable given their high energy and nutrient density. Seeds are also particularly important in human nutrition because of their unique composition in bioactive compounds. Tamarind (*Tamarindus indica L.*) is a member of the dicotyledonous family Fabaceae (*Leguminosae*). It grows in

more than 50 countries of the world. Tamarindus indica is probably indigenous to tropical Africa but has been cultivated for so long on the Indian subcontinent. Phytochemical investigation carried out on T. indica seed revealed the presence of many active constituents, such as phenolic compounds, cardiac glycosides, L-(-)-malic acid, tartaric acid, the mucilage and pectin, arabinose, xylose, galactose, glucose, and uronic acid. It has various biological activities such as antioxidant, anticancer, antiinflammatory, antivenom, and antidiabetic. Tamarind seed polysaccharide (TSP) is one such example which shows more valuable properties making it a useful excipient for a wide range of applications. TSP is insoluble in organic solvents such as ethanol, methanol, acetone, and ether and in cold water, but it gets dissolved completely in hot water at temperatures above 85° C. Taking tamarind with aspirin might increase how much aspirin the body absorbs. This could increase the amount of aspirin in the body and might increase the chance of aspirin side effects.

**Keywords:** Anticancer; Antivenom; Polysaccharide; Seed polymer; Tamarind.



## Website: www.cpreecenvis.nic.in

