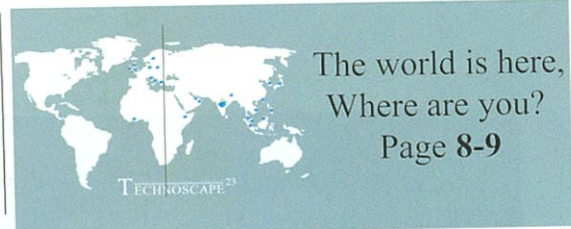
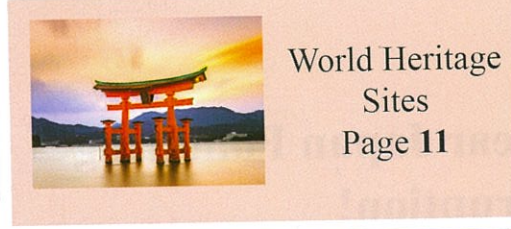


ART raction
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The world is here,
Where are you?
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World Heritage
Sites
Page 11



Ceremonies at Sea
Page 12

Preface

Dear Water Professionals,

Welcome to T^{TRANSCEND · EVOLVE · SUSTAIN} TECHNOSCAPE²³

23

As this journey unfolds, I share my greetings to each one of you who has joined on this expedition: A journey that talks about what we stand for, what we believe in, and what we aim to do. TECHNOSCAPE²³, since its inception in 2013, has held unwavering courage and strength to bring forth an issue that stands with equal grit, if not more - the sustainability of water.

As we present, the Times of TECHNOSCAPE²³, we wish to prevent a time when this land - the Pangaea, is weathered by inadequacy of the precious gems of water droplets. This platform that brings

together academicians, researchers, policy makers, agronomists, and young water leaders is one to transform ourselves from ideators to impactors, from researchers to research-entrepreneurs, and from exploiters to protectors.

Team TECHNOSCAPE has curated each line of this beautiful thought-provoking pages to showcase their beliefs, the necessities, the knowns, and the unknowns with utmost care. As you unfurl each page of this journey, may we all realise the intricacies to be unraveled for sustainability of our precious element and the

responsibilities that lies on our shoulders. Embrace yourself with knowledge and empower yourself with actions.

Be a TECHNOSCAPE. The world awaits as TECHNOSCAPE²³ unfurls. With great optimism and enthusiasm,

Dr. Mahesh Ganesapillai
Conference Chair, TECHNOSCAPE²³

Unlock Pathways for Progress

CORRESPONDENT - Aruna Singh, Vellore



Vellore Institute of Technology is hosting the International Conference on Sustainable Water Resources: Innovations and Impact. As the Chief Patron of Technoscape 2023, I warmly welcome the eminent researchers, professors, and students to the three-day transformative event. I am very happy to invite

the delegates from India and abroad to our campus, and I am sure that you will have a fruitful time.

Established in 1994, the Department of Chemical Engineering at VIT University is one of the oldest departments. This conference is a measure of the progress that has been made over the years and will surely serve as a benchmark for future conferences to come and will enable everyone to grow in the best possible manner.

I take this opportunity to congratulate the organizing committee of Technoscape 2023 for their painstaking efforts and the sincere hard work that has gone into the making of this conference. I extend my best wishes and am sure that the conference will be a huge success.



Dr. G. Viswanathan
Founder and Chancellor,
Vellore Institute of Technology
INDIA

Uniting for Water Sustainability

CORRESPONDENT - Kazuho Nakamura, Yokohama



We are greatly honoured to extend a warm welcome to all participants of Technoscape 2023, a collaborative effort between VIT, Yokohama National University (YNU) in Japan, and Gdańsk University of Technology. The partnership between

VIT and YNU, particularly in the field of chemical engineering and sustainable water resources, has paved the way for this significant event. With the esteemed presence of renowned scholars and scientists, we hold strong confidence that this conference will be a resounding success. Furthermore, we envision the robust alliance between Tamil Nadu and Japan, fortified by the recent signing of six memoranda of understanding (MoUs) between Guidance Tamil Nadu and Japanese corporations, alongside the enduring connection of the Chennai Bangalore Industrial Corridor Project.

We envisage this conference as a significant step toward the collective sharing of knowledge, benefiting all those dedicated to advancing Sustainable Technologies for Water and Wastewater Treatment



Dr. Izuru Umehara
President
Yokohama National University
Japan

Innovation for Transformation

CORRESPONDENT - Jakub Drewnowski, Gdansk



I really appreciate the fact, that Gdansk Tech was invited to be one of the to-organizers of the International Conference on Sustainable Technologies for Water and Wastewater Treatment Technoscape 2023. Since the 1st International Conference held in 2013, Technoscape has

developed international cooperation and provided a multi-disciplinary venue for researchers and practitioners to address the rich space of the newest technologies and innovations. Following 10 years of successful Technoscape events, I hope that this year's conference program provides all of the participants with new ideas and gives more opportunities for discussion, as well as knowledge and information exchange between science and industry around the world.

I wish the conference to be a great success and to be of benefit to all the partners and the participants, especially the Technoscape team. It would not have been possible without the enthusiasm and hard work of the steering and organizing committee.



Prof. Krzysztof Wilde
Rector
Gdansk Tech
Poland

I **85** **50** **24** **16** **10** **2** **1** CONFERENCE
 COLLABORATING UNIVERSITIES
 TECHNICAL SESSIONS
 KEYNOTE SPEAKERS
 COUNTRIES
 INTERNATIONAL ADVISORY
 COMMITTEE MEMBERS
 CONFERENCE DELEGATES
AM TECHNOSCAPE

STAT
ATTACK



News Flash

New Island Emerges Near Japan Following Underwater Volcano Eruption!

Japan's Ogasawara Island chain has witnessed an extraordinary event: a fresh island has surfaced post the late October 2023 underwater volcano eruption. This occurrence unveils the ever-changing nature of our planet's geology. Measuring about 100 meters across, the newly formed island resulted from explosive phreatomagmatic eruptions, caused when magma interacts with seawater, producing ash and steam. Beginning on October 21, 2023, approximately 1 kilometer off Iwoto Island (previously Iwo Jima), a historically significant site of intense World War II battles, these eruptions lasted around 10

days, creating volcanic material above the sea's surface. This isn't the first-time volcanic activity has birthed a new island nearby. The Ogasawara chain, comprising over 30 volcanic islands and islets, experienced a similar event in 2013 due to another underwater volcano eruption. Associate Professor Fukashi Maeno, from Tokyo University's earthquake research institute, confirmed these eruptions, hinting at ongoing changes in the island's shape due to potential erosion by the sea. The island's longevity relies on the possible resumption of volcanic activity or being covered by more durable substances like lava, experts suggest.



In this aerial photo, plume billows from the water off the Iwoto island, following an eruption in Ogasawara, southern Tokyo, Japan, on Oct. 30, 2023. (Kyodo News via AP)



Image Credit: Arshad Ali /Gulf News

Dubai Grapples with Severe Flooding Amidst Heavy Rainfall and Thunderstorms

In a dramatic turn of weather events in November 2023, Dubai found itself in the throes of a tumultuous thunderstorm that inundated its streets, leading to widespread flooding in various parts of the city. The intensity of the downpour prompted urgent advisories from authorities, cautioning residents to steer clear of beaches, areas prone to flash floods, and to exercise extreme caution when navigating the deluged roads. Residents were strongly urged to remain indoors for their safety. The adverse weather conditions severely impacted daily operations, causing disruptions in both traffic and flight schedules. The Dubai Police took proactive measures, issuing an alert at

6:30 AM, emphasizing the importance of avoiding flood-prone zones and urging drivers to exercise vigilance on the waterlogged roads. The severity of the situation was further underscored by the issuance of yellow and orange alerts by the UAE's National Center of Meteorology, signaling the gravity of the ongoing thunderstorm and heavy rainfall. The impact of this weather phenomenon was vividly captured and shared across social media platforms. One striking video, circulated on X (formerly Twitter), depicted an individual navigating a small boat along a flooded street, showcasing the extent of the waterlogging caused by the relentless rain.

Bhopal becomes the water sports hub in country, popular choice for hosting events.

Bhopal, known for its serene lakes, has risen as a premier water sports hub, basking in the glory of its athletes' triumphs with a total of four medals, notably a gold and a silver. Gajendra Singh secured a bronze in VL2, while Prachi Yadav shone with gold in canoe KL2 and a silver in VL2. Manish Kaurav's bronze in men's canoe KL3 further underscored the city's burgeoning talent. The city's transformation into a national water sports capital owes much to its six dedicated water sports centers. These facilities, managed by various entities including the sports department, ITBP,



EME, SSB, MPKCA, and the boat club, offer comprehensive training on diverse boats, distinguishing Bhopal's infrastructure. Prachi Yadav highlighted the unique advantage of practicing on international boats like plastic, melo, and wazda.

Water 'being taken for granted'.

"We must stop taking water for granted," FAO Director-General Qu Dongyu said at the opening of the Rome Water Dialogue, focused on its critical role relating to soils, land, climate change, biodiversity, and agriculture. With agriculture accounting for more than 70 per cent of the planet's freshwater withdrawals, "by increasing efficiency, reducing negative impacts and reusing wastewater, agriculture holds the solutions to the global water crisis", he said. FAO supports countries to develop technical

solutions for rainwater harvesting and storage, map out irrigation needs, provide data on water scarcity and assess the impact of floods on rural areas. The UN agency had indicated that the World Food Day on October 16th of this year would focus on the direct link between water and food security. The aim was to highlight ways to produce more food and other essential agricultural commodities with less water, while ensuring equal distribution of water, preservation of aquatic food systems, and leaving nobody behind.



Noria Kanyama, a primary school student in Chikwawa district, Southern region of Malawi, fetching water from a nearby river via UN News

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Gossip

Kohli's one bottle of drinking water cost's 4000! – As per reports

Virat Kohli, the famous cricket player, has a new drink, and it's not your ordinary water. It's called "black alkaline water," and it's black because of some natural minerals. This unique water has a pH level of 8.5, which is quite high.

What makes this black water special is that it has more than 70 different minerals in it. These minerals are good for your body. Drinking this water can boost your immune system, help with weight loss, reduce feelings of sadness, and keep your blood pressure and diabetes in check. Plus, it's great for your skin. Even though it looks black, it tastes just like regular water. The secret is charcoal, which gives it that dark color. Interestingly, Kohli isn't the only one trying this black water. Other famous people like Malaika Arora Khan, Shruti Hassan, and Urvashi Rautela are also giving it a shot, but they might be using different brands. It seems like black water is the latest trend!

Madhuri Dixit's presence in the advertisement has improved the stock value of Aqua guard.

Hold on to your seats, folks, because there's some hot news in town. Eureka Forbes, the company behind the famous Aquaguard water purifiers, has just kicked off a brand-new campaign featuring none other than the beloved actor Madhuri Dixit. The slogan? "Pani mein Zinc aisa kahaan hota hai... jahaan Aquaguard hota hai," and it's making waves in the stock market.

What's the buzz all about, you ask? Well, it's all about Aquaguard's latest innovation – their active copper + zinc booster technology. The company is riding high on the wave of awareness around the importance of micro-nutrients, especially zinc, for our health during the pandemic. It turns out people have been giving extra attention to these little health boosters, and Aquaguard is here to provide the solution. So, thanks to Madhuri Dixit and this snazzy campaign, Aquaguard's stock price is on a meteoric rise. It's the talk of the town, and it's not hard to see why!

Nita Ambani drinks the world's most expensive water, a bottle of it is more expensive than a luxury car!

Get ready for some jaw-dropping news, folks! Nita Ambani, the high-society celebrity, sips on water that's worth a whopping \$60,000 (about INR 44 lakh). Yes, you heard it right, and you won't believe what's inside that bottle!

She's sipping from a bottle of 'Acqua di Cristallo Tributo a Modigliani,' and it's not your regular water bottle. This fancy bottle made it into the 'Guinness Book' back in 2010 for being the most expensive water bottle in the world. What makes it so pricey? Well, for starters, it's made of gold.

However, it's not just about the bling. The water inside comes from the pristine sources of France or Fiji, and here's the kicker – it's infused with 5 grams of gold ashes, which some say is like a health tonic. Nita Ambani's got a taste for luxury, and it's creating quite a buzz in the gossip circles. Who would've thought water could be so extravagant?

Kim Kardashian, Kevin Hart and Sylvester Stallone accused of drought restriction violations.

Here's the latest scoop, straight from the Los Angeles Times – three A-list celebs, Kim Kardashian, Kevin Hart, and Sylvester Stallone, are making headlines for all the wrong reasons. Reports reveal that these famous faces are among the 2,000 customers recently hit with "notices of exceedance" by the Las Virgenes Municipal Water District. Now, what's that all about? Well, it means they've gone over their monthly water limits by a whopping 150% or more at least four times since the water district declared a drought emergency at the end of last year. Ouch! To combat the water scarcity crisis, Las Virgenes rolled out some strict "Stage 3" regulations starting on June 1. These rules are no joke, aiming for a jaw-dropping 50% reduction in water usage. One of the new rules even limits outdoor watering to just eight minutes per station on a specific day of the week. These Hollywood big shots are finding themselves in hot water over their water usage, and it's the talk of the town!

Titan's Wreckage

Story

Trapped in deep and dangerous waters, a tourist submarine named Titan set out on a risky mission to explore the eerie remains of the Titanic. On board were OceanGate CEO and founder Stockton Rush, French diver Paul-Henri Nargeolet, British businessman Hamish Harding, Pakistani billionaire Shahzada Dawood and his son Suleman Dawood.

As the submarine descended into the dark depths, hopes and fears mingled together. Suddenly, all communication vanished, leaving behind an unsettling silence. Eventually, the tragic truth emerged when the US Coast Guard announced that Titan had been destroyed, its pieces scattered across the seafloor like an ominous omen. It was a catastrophic implosion, as if the deep ocean itself had conspired against these ill-fated adventurers.

Amidst chaos, a desperate crowd sought the missing bodies of five souls, questioning their absence. A myth suggested an implosion scenario: rapid pressure changes compressing a body into a helmet. While speculative, it showcases water's impact on pressure, crucial in deep-sea contexts. Water's role in pressure dynamics, though not causing

implosions, is significant in scientific exploration, shaping safety measures for extreme conditions like deep-sea dives and contributing to our understanding of underwater environments.

Myth or fact?

To uncover the truth behind this myth, an experiment was conducted on the renowned television series, Mythbusters. A meat mannequin, filled with organs, was encased in a deep-dive pressure suit, and submerged 300 feet below the ocean's surface. The team deliberately severed the air supply line, which counterbalanced the pressure within the suit. The unsettling footage revealed the suit rapidly losing pressure, collapsing inward upon itself. The meat dummy fractured and forcibly compressed, ultimately squeezing into the helmet. This alarming demonstration showcased the impact at 135 PSI, while the depths of the Titanic would be subjected to an implosion at a staggering 5,600-6,000 PSI.

Conclusion

The "myth" indeed turned out to be the truth. It's a fact!



Bermuda's Vanishing Abyss



Story

Legends tell of a spine-tingling terror lurking within the depths of the ocean—the Kraken. A monstrous creature of ancient tales, this colossal cephalopod haunt sailors' nightmare. With tentacles that stretch like serpents and eyes that gleam with malevolence, it waits in the murky abyss. The Kraken's power is unfathomable, capable of ensnaring entire ships and dragging them into a stretch like serpents and eyes

that gleam with malevolence, it waits in the murky abyss. The Kraken's power is unfathomable, capable of ensnaring entire ships and dragging them into a watery grave. Its insatiable hunger drives it to seek out unsuspecting prey, striking fear into the hearts of seafarers. The mere mention of its name sends shivers down spines, a reminder of the unforgiving power that resides in the ocean.

For decades, the Bermuda Triangle has gripped the world with its bone-chilling mysteries. Countless vessels and aircraft have ventured into this mysterious stretch of ocean, only to vanish without a trace. It's as if a sinister force lurks within its depths, beckoning unsuspecting victims into its clutches. Ships and planes simply vanish into thin air, leaving behind a void of unanswered questions. Some believe it's the work of supernatural phenomena—vortexes, alien abductions, or even a gateway to another dimension. Whatever the truth may be, the disturbing reality remains: the Bermuda Triangle holds tight to its secrets, forever shrouded in darkness.

The Great Barrier Secret

The Great Barrier Reef, a natural masterpiece visible from space, weaves a captivating tapestry of life beneath the turquoise waves. Stretching over 1,400 miles along Australia's coastline, it's a haven for biodiversity, hosting a kaleidoscope of marine species and vibrant coral gardens. This living wonder is a world of contrasts, from the dazzling colors of parrotfish to the graceful dance of sea turtles. It's a fragile paradise, facing threats from climate change and pollution, yet it continues to inspire awe and ignite a passion for ocean conservation. The Great Barrier Reef stands as a testament to the wondrous beauty and fragility of our natural world.

Myth or Fact?

Yes, the Great Barrier Reef is visible from space. It's one of the few natural formations on Earth that can be seen with the naked eye from space thanks to its immense size and the contrast in color between the vibrant blue ocean and the coral formations. Astronauts aboard the International Space Station and various Earth-observing satellites have captured stunning images of the Great Barrier Reef from orbit.

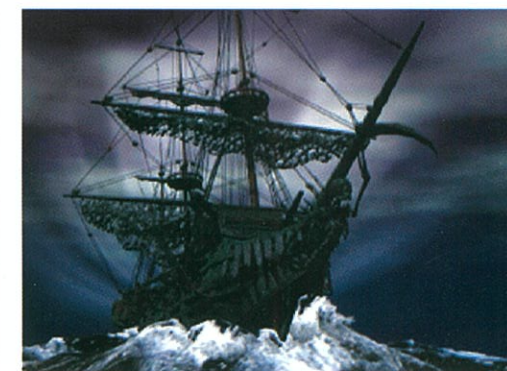
Conclusion

It's a fact!

Mythquenchers

The Flying Dutchman

Centuries ago, lore wove a haunting narrative of the Flying Dutchman, a spectral vessel condemned to eternal navigation across boundless seas. Enshrouded in ghostly mist, its spectral sails billowed amidst perpetual storms



This tale echoes the power of water, shaping legends and fears. It embodies the enigmatic forces of the sea, reflecting on sailors' superstitions tied to maritime perils. The legend emphasizes water's mystical essence, evoking both awe and dread, reminding us of the profound influence of oceans in cultural tales, where the vast, unknown depths hold stories that captivate, enthrall, and hint at the unfathomable mysteries within.

Myth or Fact?

The story of the Flying Dutchman is considered a maritime legend and part of folklore. While there have been reported sightings and tales passed down through generations, there is no concrete evidence to confirm the existence of the actual ghost ship. The legend, however, has endured and captivated the imaginations of many, adding an air of mystery and intrigue to maritime folklore.



Myth or fact?

While tales of the Kraken have captured the imagination of many, there is no scientific evidence to support the existence of such a creature. The Kraken remains firmly entrenched in myth and legend, fascinating storytellers, and enthusiasts of the supernatural.

Conclusion

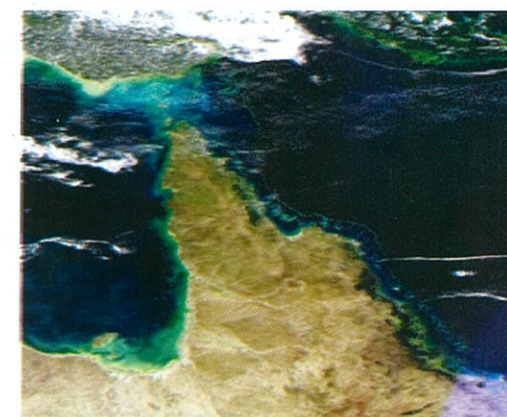
It's a myth!

Myth or fact?

Alien abductions within the Bermuda Triangle? Not at all. These theories lack scientific evidence for support, rendering them unsubstantiated claims. In fact, the number of disappearances in the Bermuda Triangle is no higher than in other parts of the ocean. The most likely explanation for the disappearances in the Bermuda Triangle is that they are due to a combination of factors, including bad weather, human error, and natural phenomena.

Conclusion

No paranormal activities involved. It's a myth!



With best wishes from








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-  Use your dishwasher – it uses less water than washing dishes by hand. Make sure it's a full load before running it, and you'll save up to **1,000** gallons per month.
-  If you have to wash a few pots by hand, turn the water off if you're not rinsing. Better yet, instead of running the water while you scrub pots and pans, **soak them in soap and water.**
-  Use a designated water bottle or **glass to refill all day** allowing you to cut down the number of glasses to wash.
-  Wash fruits and vegetables in a **pot of water** rather than running the water over them. Defrost food in the refrigerator rather than running it under the faucet. Cook food in as little water as possible. It also helps retain more of the nutrients.
-  If you accidentally drop ice cubes, don't throw them in the sink – place them in a house plant, instead! You can collect the water you use to rinse your fruits and vegetables and use it to water house plants, too.

SOURCE
<http://waterwisely.com/100-ways-to-conserve/>
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Schedule

DAY I- 14.12.2023 (Thursday)

TIME	PROGRAMME	VENUE
08 ⁰⁰ - 14 ⁰⁰	Registration	Dr. MGR Block Portico
09 ⁰⁰ - 16 ⁰⁰	Inauguration Plenary Talk – By Chief Guest	M Chenna Reddy Auditorium, Dr. MGR Block
15 ⁰⁰ - 16 ³⁰	World Cafe	Dr. MGR Block Lawn
15 ³⁰ - 18 ³⁰	Panel discussion: <i>Is Water-Food-Energy Nexus a viable option to balance Industrial Needs and Environmental Sustainability?</i>	Dr. M Chenna Reddy Auditorium, Dr. MGR Block
18 ³⁰ - 20 ⁰⁰	raagaMudra – Cultural Evening	GREENOS
19 ⁰⁰ - 21 ³⁰	Kesar – Gala Dinner	GREENOS

DAY II - 15.12.2023 (Friday)

TIME	PROGRAMME	VENUE
08 ⁰⁰ - 09 ⁰⁰	Registration	Dr. MGR Block Portico
09 ⁰⁰ - 09 ³⁰	Keynote Talk I – Prof. GP Rangaiah Emeritus Professor, National University of Singapore, SINGAPORE	Rajaji Hall, Dr. MGR Block
09 ⁰⁰ - 09 ³⁰	Keynote Talk II – Prof. Taro Arakawa Professor, Division of Intelligent Systems Engineering, Yokohama National University, JAPAN	MB 210, Smart Classroom, Dr. MGR Block
09 ³⁰ - 09 ⁵⁰	Keynote Talk III – Prof. Hiromitsu Takaba Professor, Department of Environmental Chemistry and Chemical Engineering, School of Engineering, Kogakuin University, JAPAN	Rajaji Hall, Dr. MGR Block
09 ³⁰ - 09 ⁵⁰	Keynote Talk IV – Prof. Jakub Kamod Drewnowski Professor, Gdansk university of Technology, POLAND	MB 210, Smart Classroom, Dr. MGR Block
10 ⁰⁰ - 10 ³⁰	Keynote Talk V – Prof. Kazuho Nakamura Division of Material Science and Chemical Engineering, Yokohama National University, JAPAN	Rajaji Hall, Dr. MGR Block
10 ⁰⁰ - 10 ³⁰	Keynote Talk VI – Prof. Hideaki Yoshitake Division of Materials Science and Chemical Engineering, Yokohama National University, JAPAN	MB 210, Smart Classroom, Dr. MGR Block
10 ³⁰ - 10 ⁵⁰	H2O time – Chai pe Charcha	Rajaji Hall Portico, Dr. MGR Block
11 ⁰⁰ - 13 ⁰⁰	Technical Session I - Theme : Socio Economic Initiative Chair : Prof. GP Rangaiah, Prof. Hiromitsu Takaba, Co-Chair : Dr Shishir Kumar Behera	Rajaji Hall, Dr. MGR Block
11 ⁰⁰ - 13 ⁰⁰	Technical Session II - Theme : Smart Sensing Technologies, Chair : Prof. Jakub Drewnowski, Prof. Taro Arakawa, Co-Chair : Prof. S Babu	MB 210, Smart Classroom, Dr. MGR Block
11 ⁰⁰ - 13 ⁰⁰	Technical Session III - Theme :Circular Economy and Resource Recovery,Chair :Prof.Hideaki Yoshitake,Prof.Kazuho Nakamura,Co-Chair:Prof.Shivendu Ranjan	Library Conference Hall, Central Library
13 ⁰⁰ - 14 ⁰⁰	Luncheon	FOODYS
14 ⁰⁰ - 14 ⁴⁰	Industrial Expert talk	Rajaji Hall, Dr. MGR Block
14 ⁴⁰ - 15 ³⁰	Technical Session IV - Industrial wastewater treatment, Chair : Prof. Matsuda Hiroyuki, Dr. V. Sivakumar	Rajaji Hall, Dr. MGR Block
15 ³⁰ - 15 ⁴⁵	Brew & Connect	Dr. MGR Block Lawn
16 ⁰⁰ - 17 ³⁰	Technical Session V - Processed Water Technologies, Chair : Mr. Ir. Ts. K. Sakthiaswaran, Prof. L. Muruganandam, Co-Chair : Dr S Amit	Rajaji Hall, Dr. MGR Block
16 ⁰⁰ - 17 ³⁰	Technical Session VI -Theme : Sanitation and Urban Design, Chair : Ms. Marcella D' Souza, Prof. Matsuda Hiroyuki, Co-Chair : Prof. Sivagami K	MB 210, DrMGR Block
18 ⁰⁰ - 20 ⁰⁰	Technical Session VI - Processed Water Technologies, Chair : , Mr. V. Manikandan, Ms. Morico Mary, Co-Chair : Dr. Pundlik Bhagat	Library Conference Hall, Central Library
17 ³⁰ - 20 ⁰⁰	Explore Vellore	Vellore Fort / Golden Temple Visit

DAY III - 16.12.2023 (Saturday)

TIME	PROGRAMME	VENUE
08 ⁰⁰ - 09 ⁰⁰	Registration	Dr. MGR Block Portico
09 ⁰⁰ - 09 ³⁰	Keynote Talk VII – Prof. Satinder Kaur Brar, Professor and James and Joanne Love Chair in Environmental Engineering, Lassonde School of Engineering, York University, CANADA	Rajaji Hall, Dr. MGR Block
09 ⁰⁰ - 09 ³⁰	Keynote Talk VIII – Prof. Hem Raj Pant, Professor, Department of Applied Sciences and Chemical Engineering Tribhuvan University, NEPAL	MB 210, Smart Classroom, Dr. MGR Block
09 ³⁰ - 09 ⁵⁰	Keynote Talk IX – Prof. Jennifer Tamayo, Senior Researcher, Forest Products Research and Development Institute, THE PHILIPPINES	Rajaji Hall, Dr. MGR Block
09 ³⁰ - 09 ⁵⁰	Keynote Talk X – Dr. Nandita Dasgupta, Scientist, CSIR-Indian Institute of Toxicology Research, Lucknow, Uttar Pradesh, INDIA	MB 210, Smart Classroom, Dr. MGR Block
10 ⁰⁰ - 10 ³⁰	Keynote Talk XI – Prof. Shivendu Ranjan, Assistant Professor, School of Nano Science and Technology, IIT Kharagpur, INDIA	Rajaji Hall, Dr. MGR Block
10 ⁰⁰ - 10 ³⁰	Keynote Talk XII – Ir. Ts. Sakthiaswaran Kaliappan Federal Government of Malaysia, MALAYSIA	MB 210, Smart Classroom, Dr. MGR Block
10 ³⁰ - 10 ⁵⁰	H2O time – Chai pe Charcha	Dr. MGR Block Lawn
11 ⁰⁰ - 13 ⁰⁰	Technical Session VIII -Theme : Sanitation and Urban Design, Chair : Prof. Satinder Kaur Brar, Prof. Boeloshuur, Co-Chair: Bhaskar Das	Rajaji Hall, Dr. MGR Block
11 ⁰⁰ - 13 ⁰⁰	Technical Session IX -Theme : Socio Economic Initiative, Chair : Jennifer Tamayo, Dr.Pundlik Bhagat, Co-Chair : Dr Anand Gurumoorthy	MB 210, Smart Classroom, Dr. MGR Block
11 ⁰⁰ - 13 ⁰⁰	Technical Session X - Theme : Separation Technologies, Chair : Dr Nandita Dasgupta, Prof. Pugazhenthii , Co-Chair : Dr GS Nirmala	Library Conference Hall, Central Library
13 ⁰⁰ - 14 ⁰⁰	Luncheon	GREENOS
14 ⁰⁰ - 15 ³⁰	Technical Session XI -Theme : Smart Sensing Technologies, Chair : Prof. Hem Raj Pant, Prof. Bhaskar Das, Co-Chair : Dr Senthil Kumar	Rajaji Hall, Dr. MGR Block
14 ⁰⁰ - 15 ³⁰	Technical Session XII Theme : Separation Technologies, Chair : Prof. Dr. Jakub Drewnowski, Prof. Shivendu Ranjan, Co-Chair : Dr Pugazhenthii G	MB 210, Smart Classroom, Dr. MGR Block
14 ⁰⁰ - 15 ³⁰	Technical Session XIII - Theme: Separation Technologies, Chair: Dr. Juri, Ir. Ts. Sakthiaswaran Kaliappan, Co-Chair: Dr Pugazhenthii G	Library Conference Hall, Central Library
15 ³⁰ - 15 ⁴⁵	Brew & Connect	Dr. MGR Block Lawn
15 ³⁰ - 16 ³⁰	Valedictory Ceremony	Rajaji Hall, Dr. MGR Block

Panel Discussion

Is Water-Food-Energy Nexus: A Viable Option to Balance Industrial Needs and Environmental Sustainability?

PANELISTS



Mr. Bhaskar Nateshan,
Executive Director, Sanmar Group,
INDIA



Prof. GP Rangaiah
National University of Singapore,
SINGAPORE



Mr. Sakthiaswaran K.,
Malaysian Water Works,
MALAYSIA



Mr. Manikandan Vasudevan,
Hydronautics,
INDIA



Mr. Md. Zarafullah
Managing Director,
RAINTEC
INDIA



Mr. Natarajan Malupillai,
Impact Investor,
INDIA



Ms. Marcella D'Souza,
Managing Director,
WOTR, (NGO),
INDIA



Prof. Hideaki Yoshitake
Yokohama National University
JAPAN

The exploration of the Water-Food-Energy Nexus has become increasingly pertinent in today's landscape, particularly as we navigate the pressing challenges of balancing industrial demands with environmental sustainability.

In the current scenario, industries face mounting pressures to meet their escalating demands for water, food, and energy resources. This heightened demand often leads to heightened strain on the environment, impacting ecosystems and exacerbating challenges related to water scarcity, food security, and energy sustainability. Consequently, the exploration of integrated approaches like the Water-Food-Energy Nexus gains significance as it offers a holistic lens through which we can address these interconnected challenges.

Moreover, the nexus aligns strongly with the United Nations' Sustainable Development Goals (SDGs), notably SDG 6 (Clean Water and Sanitation),



SDG 7 (Affordable and Clean Energy), and SDG 2 (Zero Hunger). By acknowledging the interlinkages between water, food, and energy, this approach advocates for synergistic solutions that not only meet industrial needs but also contribute to achieving these global sustainability goals. It emphasizes the need for coordinated efforts across sectors to

ensure sustainable resource management, minimize waste, and promote efficiency.

We as society should aim to navigate the complexities of this nexus, exploring innovative technologies, policy frameworks, and collaborative strategies that foster a balance between industrial requirements and environmental sustainability, thus contributing to a more resilient and sustainable future.

As we convene to explore this nexus, we should endeavour to unlock solutions that not only cater to industrial needs but also uphold the principles of environmental stewardship, ensuring a resilient and thriving future for generations to come.

Thus, TECHNOSCAPE23 presents a panel discussion on 'Is Water-Food-Energy Nexus: A Viable Option to Balance Industrial Needs and Environmental Sustainability?'

Join us

14th December @ 16³⁰ Hrs IST

Venue: Ambedkar Audi, TT, VIT Vellore, INDIA

ARTractions



Aikkiyam
Your beautiful sight is halted at "Aikkiyam" - the profound portrayal of the charm of TECHNOSCAPE23 - our dear delegates and dignitaries, with a mosaic of wisdom and innovation. It is not just a directory; it is a symbol of the imaginative potential that unites us, weaving together the past, present, and the future of water in our quest for a sustainable world at a place where each of us reunite - TECHNOSCAPE23.

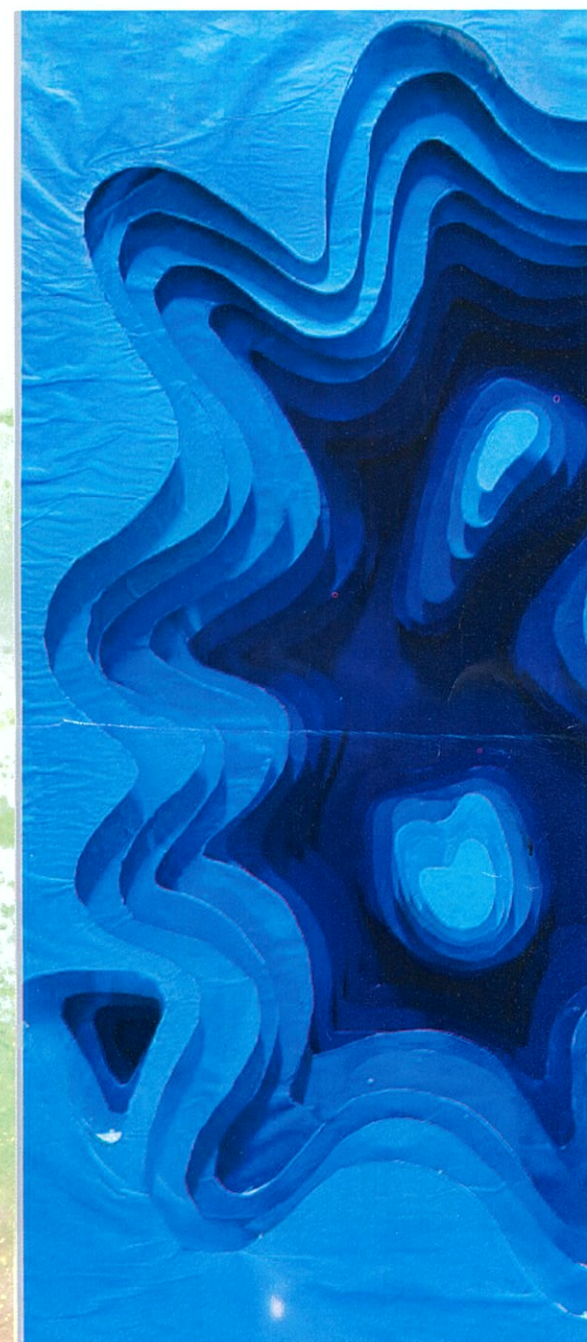


You can locate us
Technology Tower on
14 December

Alai Payuthey
Kanagawa Oki Nami Ura, a place that binds the wrath of nature and its beauty together. The tranquility of the sea with the perturbation of waves, the gentle caress of breeze with the fear of destruction, and the gaze at the Mount Fuji with the impeccable unpredictability of journey called life is captivating. The waves of life and water, intertwined into the canvas of quills, shapes a poised realm where time slows and the world turns into colours of serenity and wonder.



Abhyudaya
'Abhyudaya' stands as an artistic marvel. Meticulously crafting the SDG circle from the fibers of recycled paper, this installation not only embodies the principles of environmental responsibility and resource conservation but also signifies our collective dedication to the Sustainable Development Goals. 'Abhyudaya' weaves together the intricate tapestry of recycled paper, symbolizing the interconnectedness of water and sustainability and invites all attendees to engage with its eco-friendly message.



Hey, we are here today!!
@ M.G.R Block
15 & 16 December

Amritarshini
Layers of water transcend the canvas, each carrying its own profound significance. From the sparkling surface, mirroring our world's facade, to the enigmatic depths concealing the untold secrets, 'Amritavarshini' signifies the future of water. It serves as the nucleus of TECHNOSCAPE23, where discussions pivot on preserving, understanding, and safeguard-

Ananthasayanam
Sree Anantha Padmanabha Swami, embodying Lord Vishnu's divine essence, symbolizes the profound connection between Hindu spirituality and the symbolic significance of water. Lord Vishnu, as the preserver, reflects water's gentle yet powerful nature. His cosmic preservation aligns with water's rejuvenating qualities in Hindu philosophy. Understanding the interplay between Lord Vishnu, sacred waters, and Hinduism inspires us to navigate life's currents with grace and purpose, upholding tranquility, unity, and harmony.



INDIA



JAPAN



GREECE



NEPAL



ETHIOPIA



INDONESIA



ITALY



POLAND



TAIWAN



PHILIPPINES



GERMANY



CANADA



VIETNAM



AUSTRALIA



The World is Here

TRANSCENDENT TECH

INTERNATIONAL



Prof. Anastasia Zambiotou
Aristotle University of Thessaloniki
GREECE



Prof. Arunagiri A
National Institute of Technology, Tiruchirappalli
INDIA



Prof. Atsushi Suzuki
Yokohama National University
JAPAN



Prof. Beteley Tekola Meshesha
Addis Ababa Institute of Technology
ETHIOPIA



Mr Bhaskaran M N
The Sanmar Group
INDIA



Prof. Carlo Ingrao
University of Bari Aldo Moro
ITALY



Prof. Chi-Wang Li
Tamkang University
TAIWAN



Dr Jennifer P. Tamayo
Forest Products Research and Development Institute
PHILIPPINES



Prof. Md Shafiqur Rahman
Sultan Qaboos University
OMAN



Prof. Mohammed J.K. Bashir
Universiti Tunku Abdul Rahman
MALAYSIA



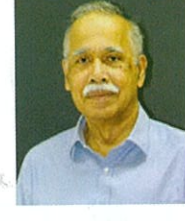
Dr Mohammed Shaad Ansari
Linköping University
SWEDEN



Dr Mukesh Upadhyay
University of Limerick
IRELAND



Prof. Murugesan Thanabalan
B.S. Abdur Rahman Crescent Institute of Science
INDIA



Prof. Mushtaque Ahmed
Sultan Qaboos University
OMAN



Mr Ravinder Singh C.
AAKASH Plantation L.L.C.
UAE



Prof. Reddy Prasad D.M.
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BRUNEI



Prof. Regupathi I.
National Institute of Technology Karnataka
INDIA



Mr Sadanand K.
Gradiant Corporation
SINGAPORE



Dr Saikat Sinha Ray
Ulsan National Institute of Science Technology
SOUTH KOREA



Ir Ts. Sakthiaswaran Kaliappan
Jabatan Kerja Raya
MALAYSIA



Prof. Sean Rigby
University of Nottingham
UNITED KINGDOM



Where are You?

EVOLVE - SUSTAIN 23
OSCAPE

ADVISORY COMMITTEE



Prof. Dhanasekar R.
 Annamalai University
 INDIA



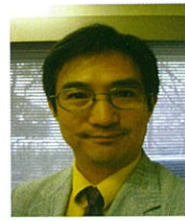
Prof. Gerold Rahmann
 Johann Heinrich von Thünen Institute
 GERMANY



Prof. Hau Thi Nguyen
 Dalat University
 VIETNAM



Prof. Hem Raj Pant
 Tribhuvan University
 INDIA



Prof. Hideaki Yoshitake
 Yokohama National University
 JAPAN



Prof. I Made Joni
 Universitas Padjadjaran
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Prof. Jacek Makinia
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 University Teknologi PETRONAS
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 Yeungnam University
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Prof. Shiao-Shing Chen
 National Taipei University of Technology
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Prof. Shimelis Kebede Kassahun
 Addis Ababa Institute of Technology
 ETHIOPIA



Prof. Shivendu Ranjan
 Indian Institute of Technology Kharagpur
 INDIA



Dr. Sivakumar D.
 RANITEC
 INDIA



Mr. Sylvain Usher
 African Water Association
 CÔTE D'IVOIRE

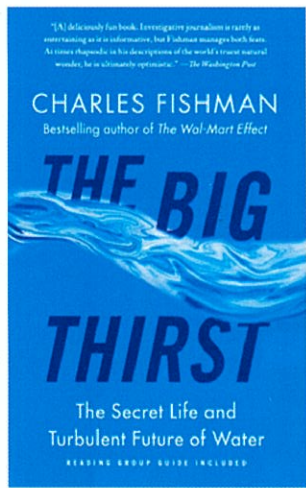


Dr. TSK Sharma
 University of Ulsan
 SOUTH KOREA

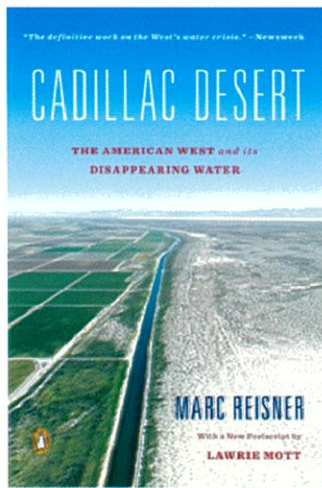


Prof. Watumesa Agustina Tan
 Universitas Katolik Indonesia Atma Jaya
 INDONESIA

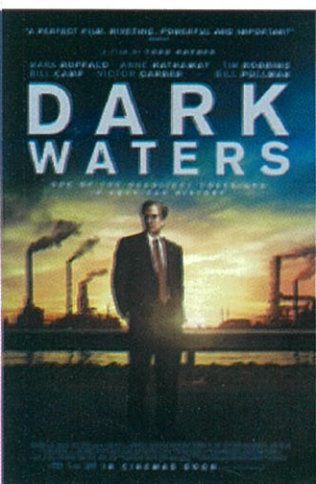
Cover to Cover



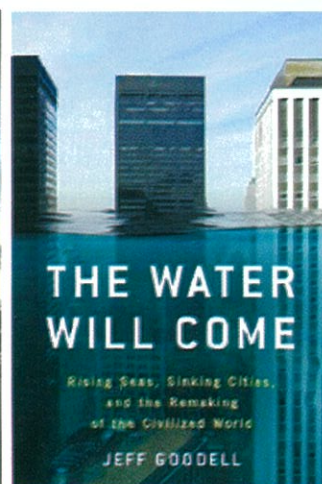
“The Big Thirst: The secret life and turbulent future of water” by Charles Fishman



“The American West and its disappearing water” by Marc Reisner



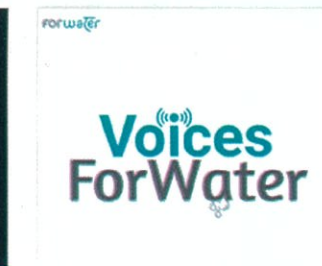
Dark Waters



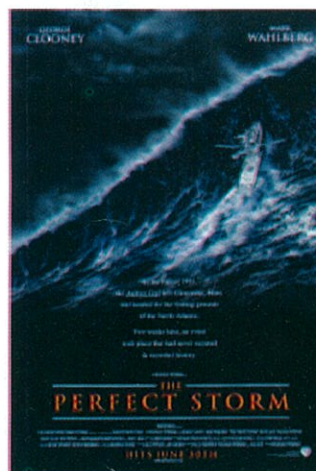
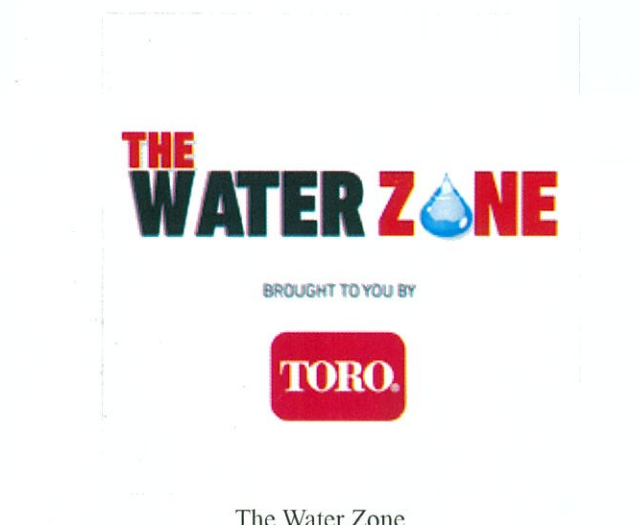
“The Water Will Come: Rising Seas, Sinking Cities, and the Remaking of the Civilized World” by Jeff Goodell



The Water Data Podcast



Voices for water



The Perfect Storm



The Wave (Norwegian: Bølgen)

Dear Diary (Stories of Flood Victims)

Entry 1: A group of locals in West Bengal's Jalpaiguri risked their own lives to save the people who were drowning during the flash flood.

Dear Diary,
Today was a day of both heartache and heroism. The festivities in Jalpaiguri took an unexpected turn as a flash flood transformed the serene Mal River into a merciless threat to countless lives. A group of us locals answered the call of duty, diving into the turbulent waters to save those in dire straits. Each of us managed to rescue between eight to ten individuals amidst chaos and uncertainty. My own motivation transcended faith or personal beliefs. I had come to the festival to savour the joy of the day, but when faced with the crisis, an unshakable duty to protect

our fellow human beings took over. Today, I witnessed the power of unity in the face of adversity. In times of crisis, we become a collective force, driven by an unwavering shared mission to safeguard one another, setting aside our differences. As the day draws to a close, I am left with a medley of emotions, from the sorrow of the tragedy to the admiration for the courage displayed and the profound sense of fulfilment that comes from making a difference in the lives of others. With a heart heavy with emotion,
Manik



Entry 2: Kerala fishermen turn into true heroes for saving flood victims.



Dear Diary,
Today, my heart swells with pride as Kerala's fishermen emerge as true heroes during the worst floods in nearly a century. United by a common purpose, these fishermen, hailing from various regions, quickly organised a fleet of 100 boats when they heard of a boat shortage for rescue operations. Their intimate knowledge of the waterways and agile boats have been a lifeline in reaching those in desperate need. In the words of Peter, a Vypin fisherman, "We are used to water, and our boats can navigate through challenging by lanes, so we decided

to join the rescue efforts." Their selflessness has not only saved lives but also rekindled hope. As Savia, a young girl rescued after hours, aptly put it, "We were saved by fishermen; without them, we would have perished." Today, I'm inspired by their unwavering courage, a testament to the resilience and unity of our community. Their actions remind us that ordinary individuals can rise to extraordinary challenges and make a profound impact. With deep pride and gratitude,
Arun

Short Stories

Story 1: Kedarnath survivors tell horrific tales about disaster

Around 6:30 am, a chorus of urgent shouts from women, "Run, run, save yourself!" roused Radha Mohan from his sleep. They swiftly sought refuge in their lodge, making their way to the third floor. In a matter of seconds, a colossal mudslide, unleashed by a cloudburst, swept through, laying waste to all structures surrounding the Kedarnath shrine. Their own lodge, the Bharatpur House, was not spared, with only one room miraculously surviving the forces of nature. Food remained elusive for



three long days, and they survived by collecting rainwater in bottle caps. In Kedarnath, there was no presence of the army, police, or communication. After being rescued and airlifted, the first act was to make a phone call to family members, assuring them of their survival. In the face of unimaginable adversity, this story serves as a powerful testament to human resilience and the significance of communication in the darkest of hours.

Story 2: Japan's flood hero: 20 lives saved in a blow-up boat

Due to heavy rains in Japan, Hiroshi found himself in a perilous situation. Undeterred by the inclement weather, his determination led him to an extraordinary act of bravery. Using an inflatable boat, Hiroshi navigated through a daunting landscape of obstacles and debris, with the sole purpose of reaching his home. However, upon his arrival, he discovered that his own family had already been rescued. Hiroshi's remarkable sense of duty then compelled him to extend his assistance to others stranded in the floodwaters. For an arduous five hours, he tirelessly paddled back and forth, rescuing children and the elderly. His strength began to wane, but his determination did not. Ultimately, Hiroshi reached a point where he could no longer return to shore. Exhausted and on the brink of collapse, he remained within the boat. Fortunately, fate intervened, as individuals on a nearby rooftop spotted him and came to his aid, bringing him back to safety. Awakening in



the hospital with little recollection of the events, Hiroshi learned that witnesses estimated he had saved around 20 individuals. Amid the flood's devastation, Hiroshi's selfless actions had transformed him into an unexpected hero. Despite the accolades, Hiroshi remains humble. "Calling me a hero is too much," he said. "I do not think I'm a hero, but I just happened

to have the boat in my car, and I was the one who saved them. I think everyone would do the same thing in that situation." This story serves as a powerful testament to the courage and compassion that can emerge in the face of adversity, highlighting the incredible resilience of the human spirit.

World Heritage Sites

POLAND

Muskauer Park / Park Mużakowski



A landscaped park of 559.9 ha astride the Neisse River and the border between Poland and Germany, it was created by Prince Hermann von Puckler-Muskau from 1815 to 1844. Blending seamlessly with the surrounding farmed landscape, the park pioneered new approaches to landscape design and influenced the development of landscape architecture in Europe

and America. Designed as a 'painting with plants', it did not seek to evoke classical landscapes, paradise, or some lost perfection, instead using local plants to enhance the inherent qualities of the existing landscape. This integrated landscape extends into the town of Muskau with green passages that formed urban parks framing areas for development.

Tarnowskie Góry Lead-Silver-Zinc Mine and its Underground Water Management System CVV

Located in Upper Silesia, in southern Poland, one of the main mining areas of central Europe, the property includes the entire underground mine with adits, shafts, galleries and other features of the water management system. Most of the property is situated underground while the surface mining topography features relics of shafts

and waste heaps, as well as the remains of the 19th century steam water pumping station. The elements of the water management system, located underground and on the surface, testify to continuous efforts over three centuries to drain the underground extraction zone and to use undesirable water from the mines to supply towns and industry.



JAPAN

Itsukushima Shrine

The island of Itsukushima, in the Seto inland sea, has been a holy place of Shintoism since the earliest times. The first shrine buildings here were probably erected in the 6th century. The present shrine dates from the 12th century and the harmoniously arranged buildings reveal great artistic and technical skill. The shrine plays on the contrasts in colour and form between mountains and sea and illustrates the Japanese concept of scenic beauty, which combines nature and human creativity.



Shiretoko Goko

Shiretoko Goko (or Shiretoko Five Lakes) is in the northeast of Hokkaido, the northernmost island of Japan. The site includes the land from the central part of the peninsula to its tip (Shiretoko Cape) and the surrounding marine area. It provides an outstanding example of the interaction of marine and terrestrial ecosystems as well as extraordinary ecosystem productivity, largely influenced by the formation of seasonal sea ice at the lowest latitude in the northern hemisphere. It has particular importance for several marine and terrestrial species, some of them endangered and endemic, such as Blackiston's fish owl and the Viola ketamine plant. The site is globally important for threatened seabirds and migratory birds, a few salmonid species, and for marine mammals including Steller's sea lion and some cetacean species.



Chilika Lake



Chilika Lake is a brackish water lake and a shallow lagoon with estuarine character spread across the districts of Puri, Khurda and Ganjam in the state of Odisha in eastern India. Fed by 52 rivers and rivulets, the waterspread area of Chilika varies between 900 to 1165 sq. km. during summers and monsoon respectively. The pear-shaped lagoon is about 64.5 km. long and its width varies from 5 to 18 km. It is connected to the Bay of Bengal by a 32 km long and 1.5 km wide channel that mostly runs parallel to the Bay separated by a narrow spit whose width varies between 100 m to several kilometres.

INDIA

River Island of Majuli

Majuli Island is a fluvial landform, a unique geographical occurrence and a result of the dynamics of this vast river system. The island extends for a length of about 80 km and for about 10-15 km north to south direction with a total area of about 875 sq km. It is 85-90 m above the mean sea level. It is formed in that stretch of the river where the largest number of tributaries drains out and form their deltas on the Northern and southern banks.



Currencies



Australia (Australian Dollar):
1 AUD ≈ 54 INR



Canada (Canadian Dollar):
1 CAD ≈ 61 INR



Estonia (Euro):
1 Euro ≈ 91 INR



Germany (Euro):
1 Euro ≈ 91 INR



Japan (Japanese Yen):
1 JPY ≈ 0.56 INR



Korea (South Korean Won):
1 KRW ≈ 0.064 INR



Malaysia (Malaysian Ringgit):
1 MYR ≈ 18 INR



Nepal (Nepalese Rupee):
1 NPR ≈ 0.63 INR



Netherlands (Euro):
1 Euro ≈ 91 INR



Philippines (Philippine Peso):
1 PHP ≈ 1.50 INR



Poland (Polish Zloty):
1 PLN ≈ 21 INR



Singapore (Singapore Dollar):
1 SGD ≈ 62 INR



Spain (Euro):
1 Euro ≈ 91 INR



Taiwan (New Taiwan Dollar):
1 TWD ≈ 3 INR



UAE (United Arab Emirates Dirham):
1 AED ≈ 23 INR



USA (US Dollar):
1 USD ≈ 83 INR

WEATHER FORECAST



Day1: December 14 (Thursday)

Light rain	28°C	20°C
	HIGH	LOW
Wind - NNE 6km/h	11 hrs 22 mins	11 hrs 32 mins
Probability of - 15% thunderstorms	Rise - 6:27AM	Rise - 7:41AM
	Set - 5:49PM	Set - 7:13PM

Thursday's dynamic forecast: 28°C morning with cloudy skies, light rain progressing to showers and thunderstorms. Night settles at 20°C with periods of rain; pack an umbrella.

Day2: December 15 (Friday)

Shower	27°C	18°C
	HIGH	LOW
Wind - ENE 4km/h	11 hrs 22 mins	11 hrs 32 mins
Probability of - 14% Thunderstorms	Rise - 6:27AM	Rise - 8:41AM
	Set - 5:50PM	Set - 8:17PM

Friday's forecast: Warm morning at 27°C with rain, shifting to cloudy conditions and occasional rain at night (18°C). Stay adaptable to changing weather.

Day3: December 16 (Saturday)

Cloudy	29°C	20°C
	HIGH	LOW
Wind - NE 4km/h	11 hrs 22 mins	11 hrs 43 mins
Probability of - 4% thunderstorms	Rise - 6:28AM	Rise - 9:38AM
	Set - 5:50PM	Set - 9:21PM

Saturday's forecast: Diverse weather ahead with a morning start at 29°C and cloudy skies. Temperatures cool to 20°C at night, mostly cloudy with drizzle in the evening, transitioning to scattered showers later. Ideal for morning outdoor activities.

Speaking Tree

The essentialism of its existence and the necessity to preserve is above all today. It is water.

The studies that show the paucity in India, the land of rivers, and the world across reflects on what's paramount. The sustainability of water. Increase of demand by a factor of two with respect to the supply of water will make India, the land that worships water, a water scarce nation by 2030.

Actions of the world will hamper its capacity to provide clean drinking water and all that wealth that hasn't been spent will be forced to curb it. The need of the hour calls for sustainability.

Emergence and implementation of daily actions for saving water to incorporation of Zero Liquid Discharge (ZLD) industrial treatment plant is vital. The existence of desalination



the speaking tree

plants, efficient effluent treatment plants, and the enhancement of produced water treatment through GIS, AI, and ML is perhaps our only way out.

In India, they believe in water - for it can do miracles. Scientists prove the relevance of the energy that water carries in its composition and the way it heals. The thirst that it fulfills, the needs it take cares of, and the human existence it ensures.

Sustainable Development Goal 6 calls for clean water and sanitation access for all. The fulfillment of this goal begins from treatment of wastewater to its possible recycling and reuse. The sanitation requires suitable strategies, minimization techniques, and above all, water.

Technology has taken a leap. Sustainability issue has been raised. Water is necessary. It's time for action.

- Dr. Mahesh Ganesapillai
Conference Chair, Technoscape²³

Ceremonies at Sea

The ocean, which is strong, cleansing, and enigmatic, is an important part of many religious and cultural rituals. Some people think that gods and goddesses live in the deep blue, while others look to the waves to find grandma's free-floating spirit.

Large groups of devotees, adorned in their finest temple regalia and carrying offerings, process in front of the idols to the rhythm of traditional music, where they immerse them in the water to cleanse them and restore their magical abilities.



Image: Balinese men go to the sea every year to take a purification bath with little sacred statues.

Melasti

One of the few places on Earth where the new year is observed in peace and quiet may be Bali. Every activity on the island halts on this holy day, known as Nyepi, to promote quiet reflection. Stores close, cars are parked, and lights are turned off. Balinese Hindus perform a number of rituals in advance to drive out evil spirits that have made their towns and villages their home for the entire year. A few days prior to Nyepi, they participate in a symbolic washing ritual known as Melasti in which they transport tiny statues of gods and deified ancestors from temples and homes to the sea.

Water, Water, Everywhere

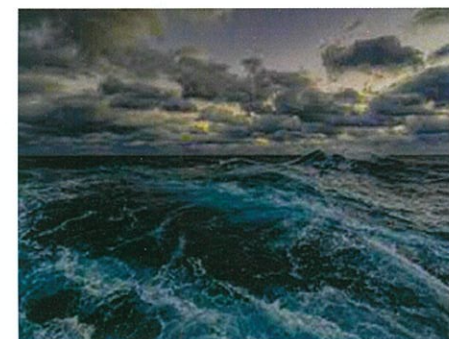
"Water, water, everywhere; Nor any drop to drink." Coined by Poet Samuel Taylor Coleridge in poem 'The Rime of the Ancient Mariner', emphasizes on the abundance of water all around us, but highly unusable as drinking water.

In the tapestry of Earth's narrative, saltwater emerges as a central character, enveloping our globe in an expanse of liquid elegance. The oceans, covering an impressive 71% of our planet's surface, are not merely bodies of water but rather vast realms teeming with wonders and secrets.

Beneath the undulating surface, a world of unparalleled beauty and complexity comes alive. The depths, far from being silent and desolate, host a mesmerizing ballet of bioluminescent organisms, transforming the ocean floor into an otherworldly canvas.

However, saltwater is more than just a backdrop for the captivating marine life; it is an intricately woven fabric that shapes the very essence of our planet. Acting as an immense heat sink, the salty embrace of the oceans plays a pivotal role in regulating Earth's climate, orchestrating a symphony of winds and currents that traverse the globe and influence weather patterns. The oceans, with their unparalleled biodiversity,

house an extraordinary array of life forms. Yet, amidst the breathtaking beauty lies a pressing concern. Human activities, from



overfishing to pollution, cast a shadow on the pristine symphony of the oceans. The delicate balance that has evolved over eons is threatened, demanding our attention as stewards of this fragile equilibrium. Thus, saltwater is not merely a substance that encircles our planet; it is a narrative thread woven into the very fabric of Earth's story. As custodians of this blue expanse, we bear the responsibility of ensuring the preservation and protection of our oceans for generations yet to come.

Festival of Iemanjá

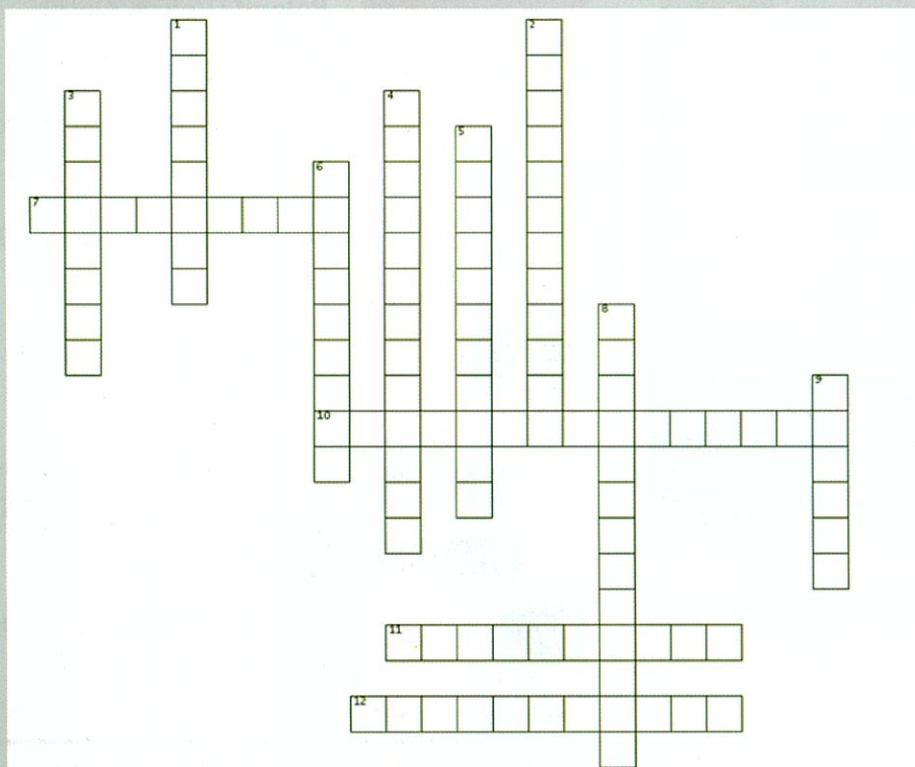
Many Brazilians who live along the coast, especially those who follow Candomblé, worship Iemanjá, the African goddess of the sea, who is revered as the supreme protector of the ocean and all who enjoy it. Iemanjá, also spelled Jemanjá, is celebrated at various times of the year in cities all over the nation. The Festival of Iemanjá is observed on New Year's Eve in Rio de Janeiro and on February 2 in Salvador.

Believers in white attire, some holding Iemanjá statues, head to the beach during the celebration bearing gifts for the goddess. Modern beauty luxuries like jewelry, makeup, hair accessories, and perfume are among the most popular offerings. Many people send the gifts out to sea in boats to make sure the goddess receives them. Iemanjá has accepted the offering and will fulfill the gift-giver's wish if the treasure sinks. If vessels come back to land carrying cargo, it's because the presents and the wishes that go along with them have been turned down



Image: Early in the morning, Salvadorian women go to the ocean before the Festival of Iemanjá begins.

Crossword



DOWN

ACROSS

1. Introduction of air or oxygen into wastewater to facilitate biological processes.
2. Treatment method that kills or inactivates harmful microorganisms in water.
3. Treated or untreated wastewater that is discharged into the environment.
4. Process of settling suspended particles in wastewater due to gravity.

7. Equipment used in wastewater treatment to separate solid particles from liquid
10. Process of reducing or removing excess nutrients like nitrogen and phosphorus from wastewater.
11. Removal of solid particles or impurities from water using a porous material.
12. greatest sustainability and water conference near you

Sudoku

				9	8	7	6	
9			7			4		
7	2			4				
5							3	
8		1				2		6
	3							7
				2			5	3
		4			3			1
	7	5	8	6				

HOROSCOPE

♎ Libra (September 23 - October 22): Water Audits Libra, symbolizing balance and harmony, can be associated with water audits. Water audits involve assessing water usage and identifying areas for improvement, allowing individuals and communities to find a balance between water conservation and their needs, reflecting Libra's quest for equilibrium.

♏ Scorpio (October 23 - November 21): Water Leak Detection Scorpions are known for their keen observation and intensity. Water leak detection, the process of identifying and fixing leaks in water systems, aligns with Scorpio's investigative nature, helping to conserve water by preventing wastage and maintaining control.

♐ Sagittarius (November 22 - December 21): Xeriscaping Sagittarius individuals are often associated with adventure and exploration. Xeriscaping, a landscaping technique that minimizes water usage by incorporating drought-tolerant plants and efficient irrigation, reflects Sagittarius' inclination to embrace sustainable practices while enjoying the beauty of nature.

♑ Capricorn (December 22 - January 19): Low-Flow Toilets Capricorns are known for their practicality and resourcefulness. Low-flow toilets, which reduce water usage per flush, align well with Capricorn's goal-oriented and efficient nature, while emphasizing their commitment to conserving resources.

♒ Aquarius (January 20 - February 18): Community Water Conservation Campaigns Aquarius individuals are often associated with their humanitarian and innovative approach. Community water conservation campaigns, aimed at raising awareness and promoting water-saving practices at a larger scale, reflect Aquarius' vision for collective action and positively impacting the world.

♓ Pisces (February 19 - March 20): Water-Conserving Landscaping Pisces individuals are known for their compassion and connection to nature. Water-conserving landscaping techniques, such as using native plants, mulching, and efficient irrigation, align with Pisces' desire to create a harmonious and sustainable environment.



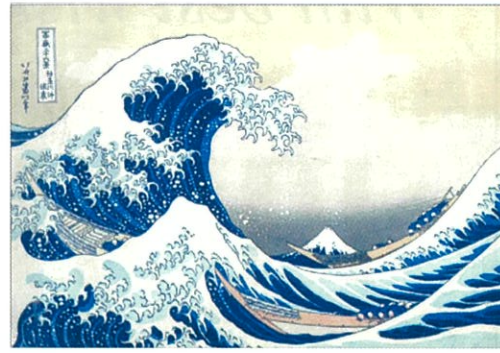
GOOD LEATHER COMPANY

Arts and Culture

The Great Wave off Kanagawa - Katsushika Hokusai

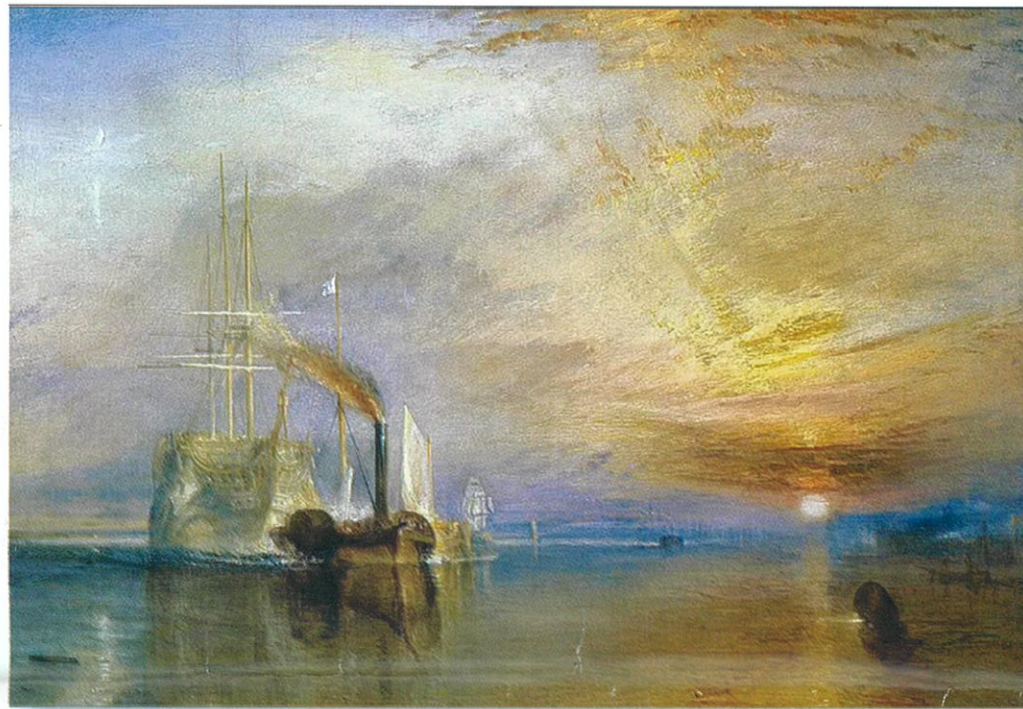
Painted in 1831, Katsushika Hokusai's work titled "The Great Wave off Kanagawa" quickly garnered attention throughout the world despite Japan being under a strict period of isolation from the world. This painting focuses on the unpredictable and raging seas near Japan's famous Mount Fuji. Hokusai painted this work as a series of scenes he labelled "Thirty-Six Views of Mount Fuji". This piece was the most famous as it depicted the ocean near Mount Fuji in all its famously unpredictable anger, which

filled many sailors with an extreme sense of trepidation at having to sail near this area. Mount Fuji is visible in the crest of the largest wave as a small, distant landscape that can barely be distinguished from the rest of the ocean's waves. The mountain has a strange resemblance to the ocean waves in color, its snow-capped peak appearing much like the crest of the waves in the sea. The artist also includes ships that are also dwarfed by the huge waves around them.



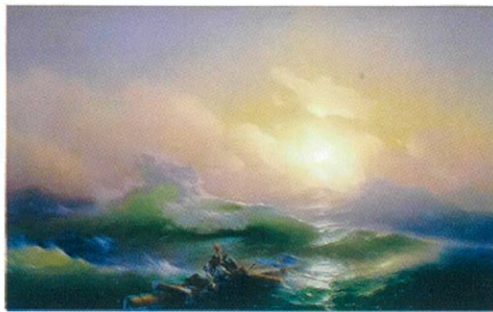
The Fighting Temeraire Tugged to her last Berth to be Broken Up - J.M.W Turner

This piece is one of England's most famous paintings and it depicts a point in time when sailed ships had begun to be rendered obsolete by steam and other powered ships that were able to cover distances faster and more efficiently. Turner saw the fading beauty in this once-might warship's final passage and painted a scene that lingers in the minds of many British art enthusiasts. The old warship played a major role in the Battle of Trafalgar, a significant military encounter between the French and British naval forces during the Napoleonic Wars. Turner paints the ship as being towed by a single, blackened tugboat as it is being dragged out to a scrapyards to be broken up and parted out. The artist captures the symbolism of this warship in its former glory being overtaken by the newer, less attractive ship.



The Ninth Wave - Ivan Aivazovsky

Few paintings have been able to capture the sheer realism of the ocean's waves and their majestic variable forms that intertwine with the rising and setting sun. Ivan Aivazovsky was one such artist who managed in 1850 to accurately portray the special beauty of the sea as three castaway sailors struggle to stay abreast of the raging waters. The title of the painting is a reference to an old saying (that many sailors believed to be factual) that the largest wave would come after a succession of incrementally larger waves, in this case, the ninth. The painting perfectly captures the rare splendour of the sun as it meets the horizon and plays along the ocean's ever-changing surface. The work portrays the dual nature of the sea as both a beautiful sight to behold, and a destructive force of nature.



The Gulf Stream - Winslow Homer



This work captures the vibrant essence of the coastal town of Saintes-Maries-de-la-Mer in the Camargue region of southern France, where Van Gogh spent some time. The painting features a row of colorful fishing boats beached on the sand, with the Mediterranean Sea and a radiant sky in the background. Van Gogh's characteristic bold brushwork and vibrant color palette are on full display, imbuing the scene with a sense of energy and movement. The boats' rich, contrasting colors and the dynamic composition convey the spirit and livelihood of the local fishing community. The swirling clouds and the expanse of the sea evoke a feeling of hope and freedom. Van Gogh's use of color and texture in this piece captures the essence of the coastal life he so admired, making it a vivid and memorable representation of the Camargue's fishing culture.

The Grand Canal in Venice - Canaletto



This masterpiece is a breathtakingly detailed and panoramic view of Venice's iconic Grand Canal. Canaletto's exceptional skill in capturing architectural precision and luminous atmospheric effects is evident in the painting. The Grand Canal winds its way through the composition, lined with elegant Venetian palaces and bustling gondolas. The play of light and shadow on the water, along with the impeccable rendering of the buildings, creates a sense of depth and realism that transports the viewer to Venice itself. The scene exudes

HOROSCOPE



Aries (March 21 - April 19): Rainwater Harvesting

Aries, known for their dynamic and independent nature, can be associated with rainwater harvesting. This technique involves collecting and storing rainwater for later use, reflecting Aries' proactive and self-sufficient approach to water conservation.



Taurus (April 20 - May 20): Drip Irrigation

Taurus individuals are known for their practicality and reliability. Drip irrigation, a precise and efficient watering technique that delivers water directly to plant roots, aligns well with Taurus' steady and systematic nature.



Gemini (May 21 - June 20): Greywater Recycling

Gemini, the sign of adaptability and versatility, corresponds well with greywater recycling. This technique involves reusing lightly used water from sources like sinks, showers, and laundry for non-potable purposes, highlighting Gemini's ability to adapt and make the most of available



Cancer (June 21 - July 22): Water-Saving Showerheads

Cancer, known for its nurturing and caring personality, can be associated with water-saving showerheads. These devices help conserve water by reducing water flow while ensuring a comfortable shower experience, reflecting Cancer's desire to create a nurturing environment while being mindful of resources.



Leo (July 23 - August 22): Decorative Water Fountains with Recirculation

Leos are often associated with grandeur and creative expression. Decorative water fountains with recirculation can represent Leo's flair for the dramatic while being water conscious. These fountains recycle water, minimizing wastage and emphasizing Leo's desire to make a statement about responsible water use.



Virgo (August 23 - September 22): Smart Irrigation Systems

Virgos are known for their practicality and attention to detail. Smart irrigation systems, which utilize technology to optimize watering based on weather conditions and plant needs, align well with Virgo's meticulous and efficient nature.

a sense of grandeur, luxury, and the timeless charm of this unique Italian city. Canaletto's work continues to be celebrated for its ability to transport viewers to the enchanting and romantic world of Venice, a city intrinsically connected to its waterways.

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