

HARIT KHABAR

February, 2022



The Western Ghats is a sensitive ecological mountain range. Read more about the UNESCO World Heritage Site in this edition.



WORLD COMICS INDIA

An initiative of HCL Foundation and World Comics India



Concrete Solution needed for Solid Waste Management



Photo: iStock

In the plains of the capital, there lies a mountain peak of around 45-60 feet tall which is one of the biggest landfill sites in India. With 3000 thousand metric tons of garbage thrown in it every day, this trash mountain is predicted to grow taller than the iconic Taj Mahal. Is there an alternative way of managing this trash? Continue reading to know more about solid waste management techniques.

The process of collection and treatment of solid waste is known as solid waste management which is one of the parts of recycling. Items that can generally be reused are often thrown into the waste, which generates primarily two problems. The very first one is the production of carbon due to mismanagement of the waste, which further pollutes air and soil.

The second problem is the disruption of the economy due to the mismanagement of solid waste. To understand this phenomenon we need to first be aware of the 'resource efficiency' of the earth.

The Earth has a limited number of natural resources and if they're not used to their fullest potential, or not recycled, the resources get wasted. This causes the economy to use more resources than required, which is known as 'resource inefficiency'. 'Circular Economy' provides new solutions to mitigate the above-mentioned problems.

Do solutions lie in a Circular Economy?

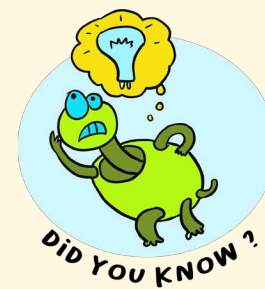
What exactly is a Circular Economy?

To know this first we have to understand the concept of 'Linear Economy'. Think of the linear economy as a process wherein the first step is to buy raw materials for commodity production, the next step is to produce the commodity, and then to sell the final products into the markets. Generally, the buyers of these products throw them after single use which leads to waste products in the environment. Though capable of being reused and recycled, these items are thrown away which only increases waste that cannot be recycled anymore. This type of economy in which items are thrown in the trash without being recycled is known as Linear Economy.

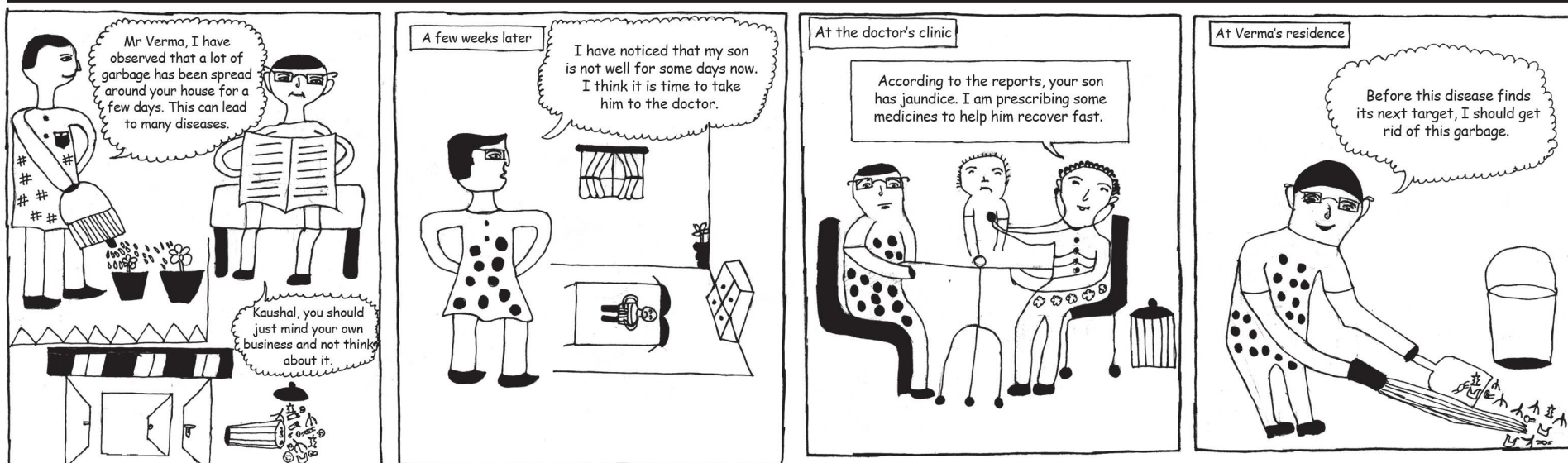
According to the Environmentalists, Circular Economy is the opposite of a Linear Economy which gives the unique solution of increasing resource efficiency. In a Circular Economy, the products that can be used again are reused instead of being thrown. This methodology ensures economically viable, less carbon-producing waste management.

Solid Waste Treatment

According to a report by NITI AAYOG, India produces 62 million tons of solid waste annually. This solid waste can be divided into three categories, Organic, Dry, and Biomedical. About 50% of the waste is organic, meaning it is biodegradable and can be used to produce organic manure, however only 30-35% of the waste produced in India follows the management and treatment process.



My cleanliness campaign



Innovation, Training & Tech



Photo: iStock

Currently, this network has more than 70 NGOs, 500 schools, and 10 lakh young people working for environmental protection. Afforestation, Solid Waste Management, E-waste management, etc. are some of the themes undertaken by the members of this network.

Green Technologies have always been an area of special interest for Development Alternatives. To provide better facilities to the people in urban and rural areas DA has started the 'Tara' Water filter. This filter can purify 2,000 to 3,000 litres of water every day. In 2020, Development Alternatives trained at least 878 farmers on how to mitigate the impact of climate change and on conservational techniques for water management.

Development Alternatives



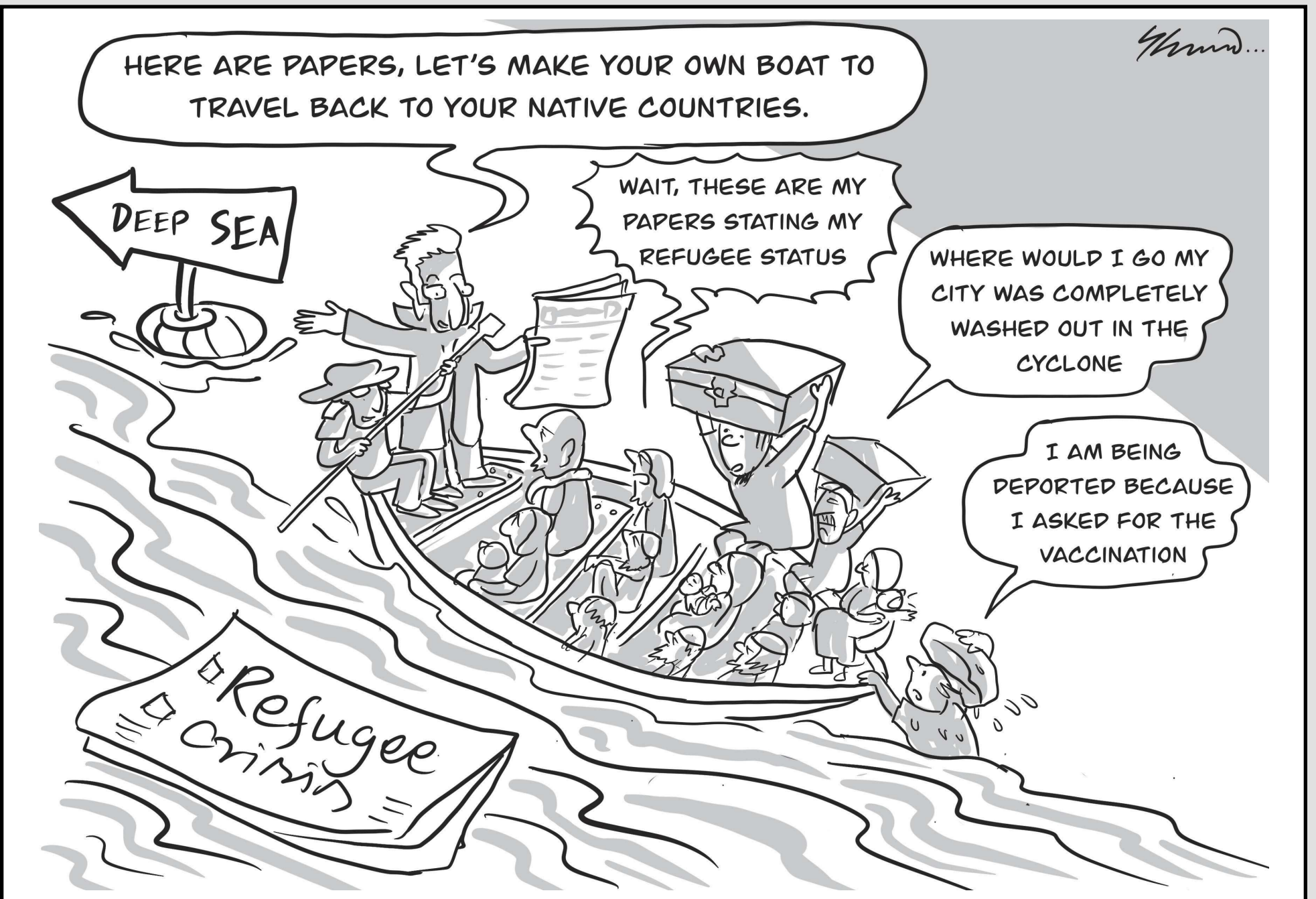
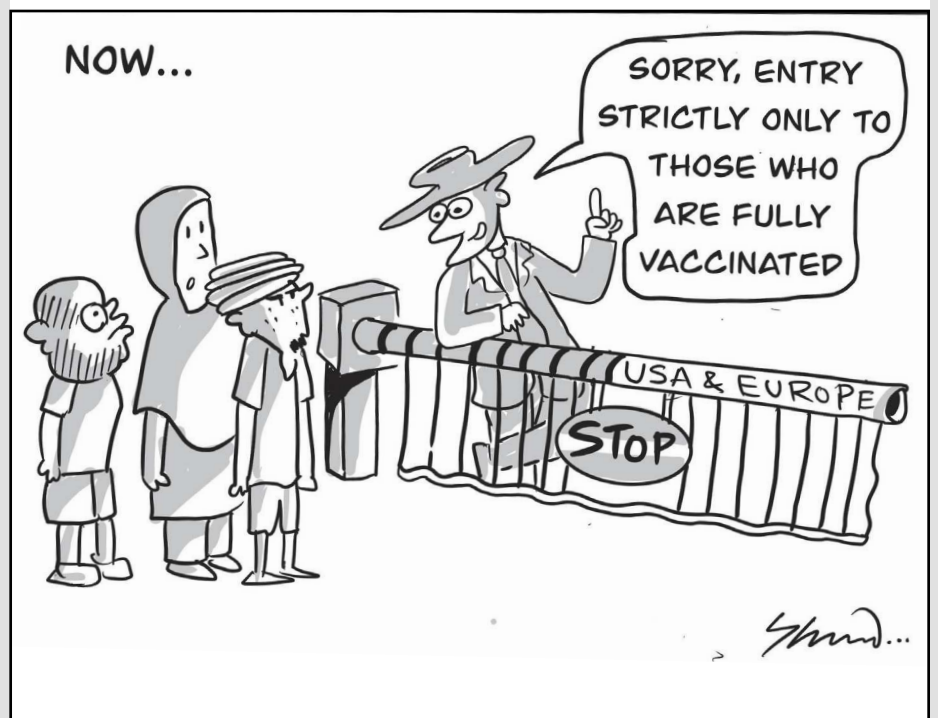
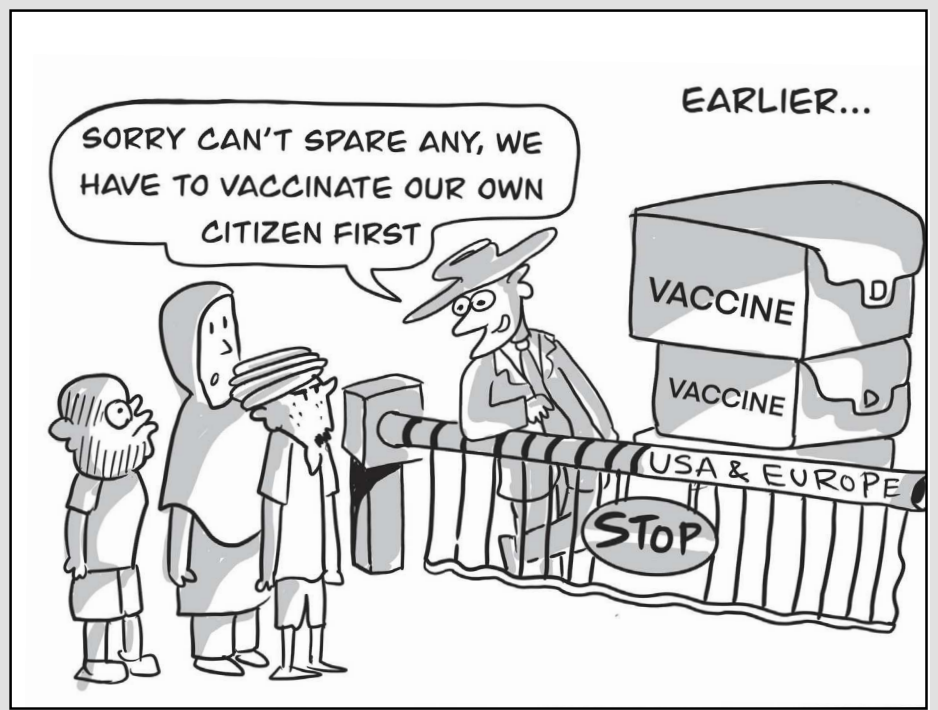
Development Alternatives (DA) is a Delhi-based NGO whose work revolves around providing technological solutions, environmental protection, and policymaking. The NGO

has used clean and new resources like Biogas to increase the electricity production in many villages of North India. DA is working towards making backward classes and poor communities self-reliable.

Their initiative 'Managing City Trash' sets up new policies and models for solid waste management while their 'Urban development' program creates awareness about the problems related to the environment among young people and urges them to join the program.



Cartoonist Sharad Sharma's take on climate change and other contemporary issues -



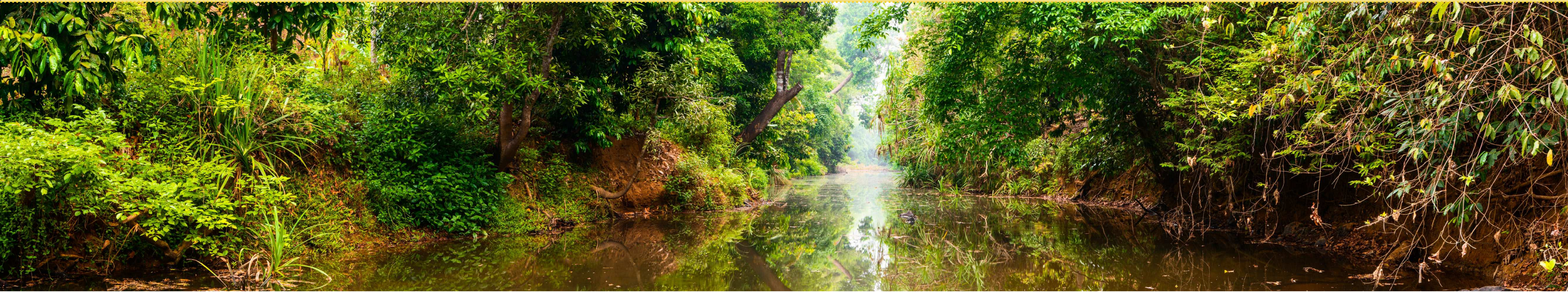


Photo: iStock

Western Ghats: A world heritage site facing challenges



Photo: iStock

The Western Ghats is a mountain range that runs along the western coast of India. The range starts from the state of Gujarat, runs through Maharashtra, Goa and Karnataka, and ends at the bottom tip of Kerala and Tamil Nadu. According to WWF India, the Western Ghats is home to 30% of all fish, plants species, mammals, birds and fauna found in India despite covering only 6% of India's total land.

In 2012, UNESCO declared the Western Ghats a world heritage site to gather international attention to the conservation of this important biodiverse piece of land. This decision was made due to rising commercial activities like agriculture, forest encroachment, power

projects, and highway projects. All these activities constantly disturb the nature and natural habitats of the Western Ghats.

To protect the mountain range, the Kasturirangan committee report recommended that 37% of the Western Ghats be designated as an Ecologically Sensitive Area (ESA), with the remaining 63% designated as a 'cultural landscape' exempt from the ESA to facilitate sustainable development.



Photo: iStock

People's Science Movement Leader M K Prasad Dies

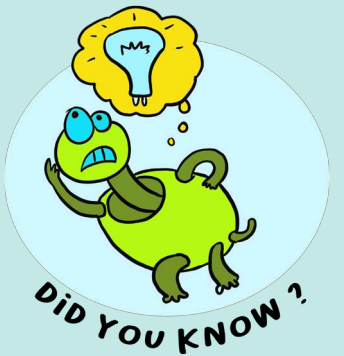


Legendary Environmentalist Professor M K Prasad took his last breath on 17 January while going under treatment for Covid-19. MK Prasad dedicated his life to conserving the tropical rainforests of southern India. The Silent Valley of the Western Ghats, a well-protected, biodiversity-rich national park, is a living memorial for Prasad's

insights, passion, deep reading and commitment to mother nature. An all-time inspiration to environmental activists, Prasad was a progressive people's science movement leader of "Kerala Sasthra Sahithya Parishath".

Facts about The Western Ghats

- 30% of the Asian Elephant population is found in the Western Ghats as more than 6000 animals live in this region.
- 17% of the remaining tigers of the world live in the Western Ghats.
- More than half of the amphibians of India are found in the Western Ghats.
- The Western Ghats are older than the Himalayas.
- More than 5000 unique flower species are found in the Western Ghats.
- The Western Ghats is home to more than 500 bird species among which 16 species are endemic to the region.
- In the past 12 years, 10,600 Hectares of forest cover in the Western Ghats have been lost.



Source - WWF India, MetroSaga

New Plant Species Found In Thiruvananthapuram and Wayanad

By joint efforts of SNM College Maliankara and MS Swaminathan Research Foundation, two new plant species have been discovered in Thiruvananthapuram and Wayanad districts in the western ghats. These plants are named as *Fimbristylis Sunilii* (Right pic) and *Neanotis Prabhuii* (left pic).



Such findings are published in detail in the plant taxonomy journal *Phytotaxa*.



The *Fimbristylis Sunilii* plant is named after plant taxonomist CN Sunil and the *Neanotis Prabhuii* plant received its name from K.M. Prabhukumar, Senior Scientist at CSIR-NBRI, Lucknow.

Want to see this flower, wait till 2030!

Strobilanthes Kunthiana, commonly known as Neelakurinji in Tamil and Malayam, is a flower species found in the deep Shola forest of western ghats in Kerala. The most interesting thing about this particular flower species is that it blossoms only once in 12 years. The species was last seen blooming in 2018, so if you want to witness this special phenomenon, you will have to wait till 2030. The flower, when it blossoms, covers the Shola forest with its blue, purple and pink colours.

Earlier this flower was also present in different regions of western ghats like Cardamom Hills, Anamalai Hills, Kudremukh and Nilgiri Hills. Excessive plantation and commercial activities occupied the space meant for the Neelakurinji Flower, hence the flower was annihilated from these parts.



NCF's efforts to minimize Human-Animal Conflict

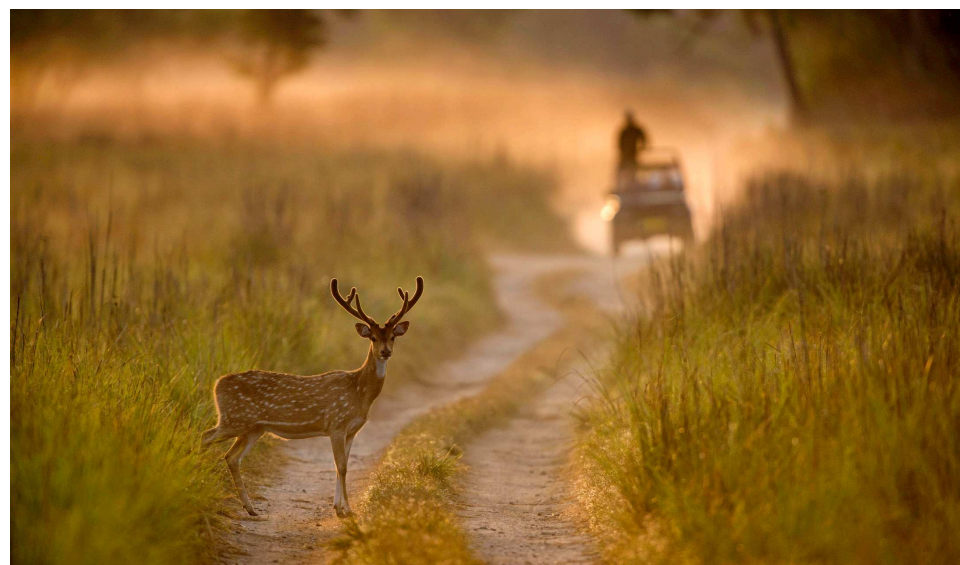


Photo: iStock

National Conservation Foundation (NCF) was founded in 1996 as a public charitable trust. NCF aims to preserve India's rich wildlife heritage and biodiversity while also working towards the development of local communities.

Rising human-animal conflicts in the Western Ghats has caused several inconveniences to local communities and farmers. In MM Hills and Cauvery Wildlife Sanctuary of Western Ghats, local farmers often encounter wild animals like tigers, elephants, and wild boars. They attack the crops and the

livestock of the farmers.

Such human-wildlife interactions often occur during the night. Being far away from the electricity grid, villages and farms here do not receive an adequate supply of electricity. Therefore, they are unable to stop encroachments of wild animals at night. NCF intervened by installing solar-powered lights in the homes of the locals so they could be more aware of their cattle and farms at night.

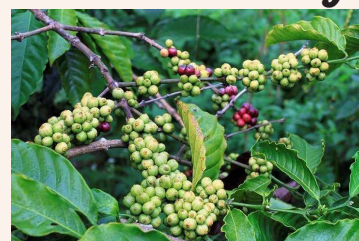
Further, they have also provided solar fencing around the farms to farmers of KK Hills. The KK Hills and Cauvery Sanctuary is home to many elephants of the Western Ghats. The installation of the solar fencing helped locals in avoiding unwanted human-elephant interactions that can turn fatal.

Persistent Plantation for Preservation

National Conservation Foundation has been working towards identifying and protecting rain forest patches in the Western Ghats since 2001. NCF has partnered with many plantation companies operating in the Western Ghats, such as Tata Coffee Ltd, Parry Agro Industries Ltd and Tamil Nadu forest department and, with combined efforts, have protected more than 1075 hectares in 35 parts of the Western Ghats.

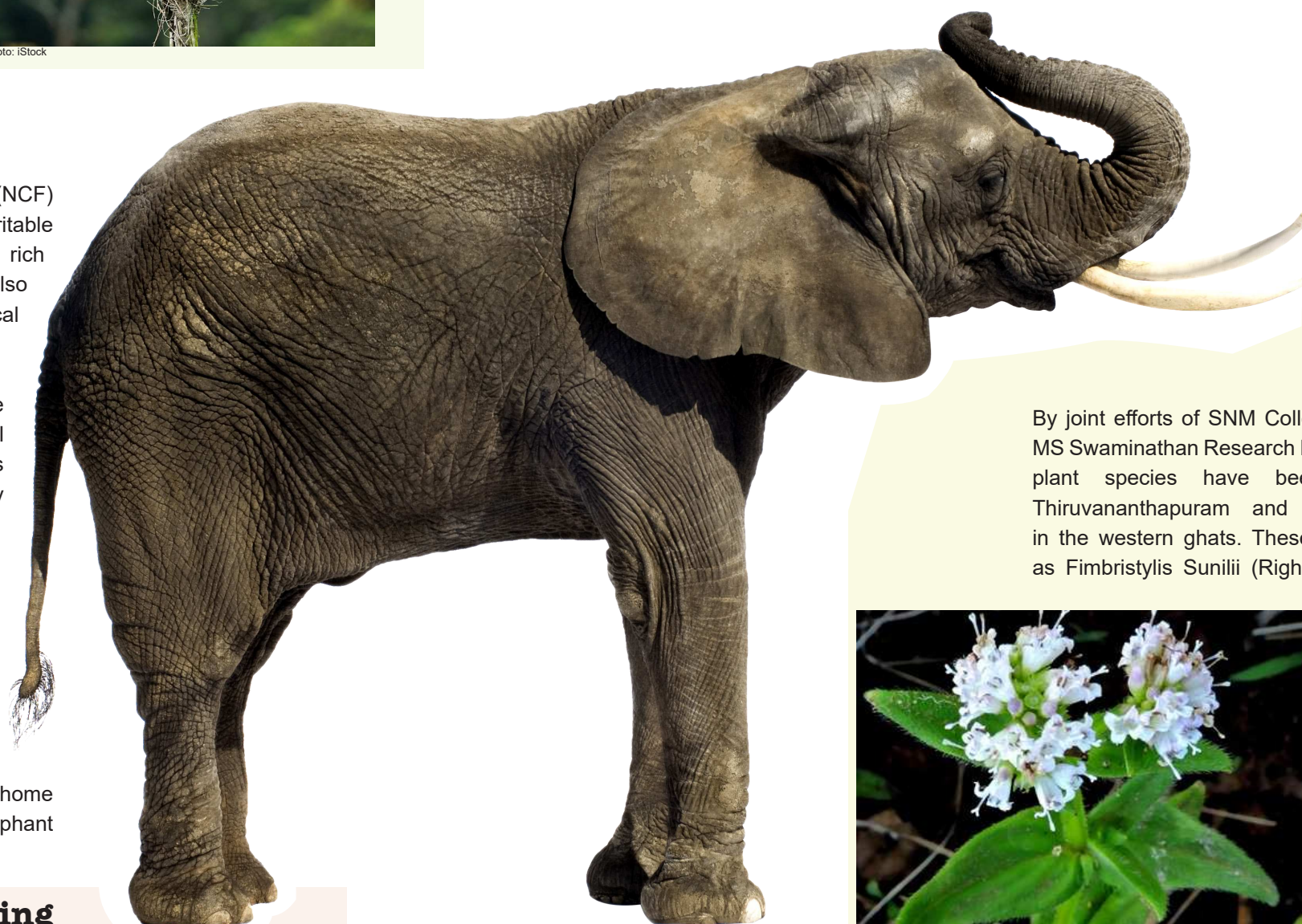
NCF has planted over 57,300 saplings of native rain forest plant species in the region of Anamalai hills to restore the forest cover, among which 61% of the saplings flourished naturally.

Coffee Plantation helping biodiversity



Starting in the 17th century, Coffee plantations have helped in maintaining the biodiversity of the Western Ghats. According to WesternGhats.org, more than 10,000 MT of coffee is produced every year in the Western Ghats, out of which 70 to 80% is exported to countries like Belgium, the United Kingdom, Spain and the United States.

Moreover, 35% of India's coffee produce comes out of only one district, the Kodagu district in Karnataka according to the Coffee Board of India. Karnataka at 71% and Kerala at 21% contribute most to the coffee production in the Western Ghats according to Coffea.earth.



Steep decline of Forest in NE despite overall growth : Forest Report 2021

Photo: iStock

India's forest cover saw an increase of 1540 sq km since 2019 and 17 states have a forest cover of more than 33%. In addition, very dense forest cover has increased by 501 sq km according to the Forest Report released by the Ministry of Environment, Forests and Climate Change. One of the key findings of the report is that there has been a reduction of forest cover in the northeastern states like Arunachal Pradesh, Manipur, Nagaland, Mizoram and Meghalaya.

These states witnessed a reduction of 1000 sq km of forest cover combined, having huge implications for the biodiversity in India. The decline in North-Eastern forest cover is due to natural calamities like heavy rainfall and landslides. Anthropogenic activities such as agricultural and development projects too have led to a reduction of forest cover in the region.

Activists, researchers, and critics have opined that the report released on 12 January 2022 may not give us a clear picture as commercial plants and trees of coffee, coconuts and mangos are also included while estimating the forest cover and have urged to reconsider their definition of 'forest'.



Farm Ponds providing a unique solution in Rajasthan

Rajasthan's Nagaur is a region with acute water scarcity. The rainfall is limited and for years, people have struggled to have an efficient water management technique. In 2009, the Rajasthan government had suggested the construction of 'Farm ponds'. Farm-ponds are known as 'Diggayan' in local parlance. Since the implementation of this government initiative, Nagaur is home to more than 5000 farm ponds.

Farm ponds are not built with non-biodegradable materials such as concrete or cement and the collected water can be used for six to eight months. This is the most efficient solution to conserve water. The water collected in these farm ponds is used in planting the Rabi crops. Lilliya, a model village in Nagaur has a phenomenal water management technique where farm ponds assist in the irrigation of 3,500 hectares of land. The government maintains an online portal to manage the existing records of farm ponds and also to connect more people with this novel initiative.



Photo: Patrika

Innovation helping incomes grow

Pomegranate cultivation is helping farmers earn ten times more than what they used to get while cultivating old crops like millet, cummin, and bajra.

Farmers of Rajasthan's Barmer district and Krishi Vigyan Kendra are innovating new methodologies to grow diverse plants and crops that were never witnessed in the region.

Now, greenfields producing pomegranate, tomato, brinjal, chillis, figs, and dates are sights to see in the region.

For decades, only crops like millet, gram and cumin were grown as dry weather and salty groundwater made it impossible for any other crop to flourish. Now, agriculture in Barmer is entirely different than it used to be. Fish farming is also done in the district these days, a variety of species like rohu and lobster are cultivated.



Photo: Swarajya

Krishi Vigyan Kendra has helped the farmers to use their lands to their full potential. Earlier because of low rainfall, saline water, high pH levels, farmers could not grow crops like pomegranate and tomatoes. However, suitable irrigation methods like RO (Reverse Osmosis) and drip irrigation have supported the region's cultivation of fruits and vegetables.

Give Me Trees - Reviving Biodiversity



A monitor lizard and a Red-naped Ibis were spotted at the plantation site developed by Give Me Trees Trust and the HCL Foundation in Noida, Uttar Pradesh.

The role of these giant monitor lizards in biodiversity is to control prey populations and play the role of scavengers. Monitor lizards are usually shy creatures and try to stay away from humans. They don't attack anyone unless they are provoked to do so.

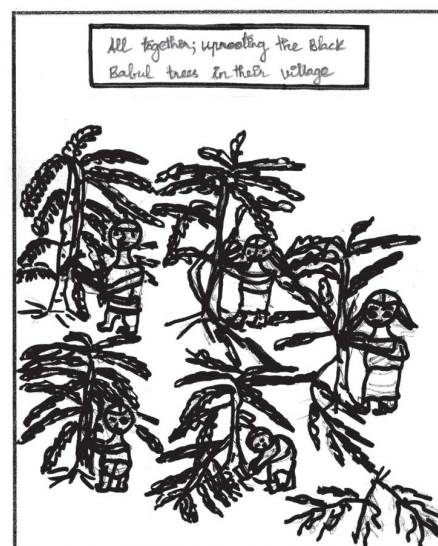
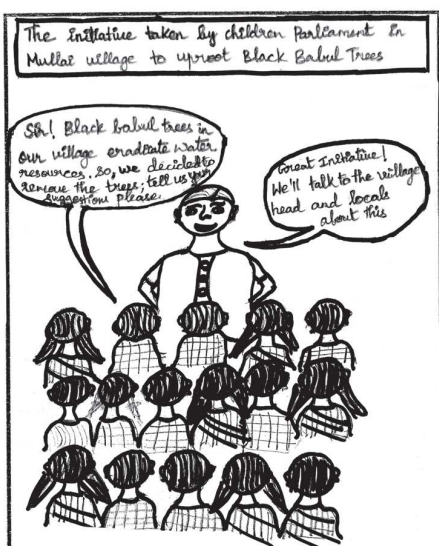
The Red-naped Ibis feeds on insects, lizards, aquatic insects and small reptiles and is mostly found in marshes, lakes, dry fields and river beds. The bird is also known as the Black Ibis or the Indian Black Ibis.

The spotting of these species is a result of plantation that proved to be a significant step in reviving biodiversity in the area.



Together - We Change

Pathmanathan - OFERR



India's great Sewage Crisis



Photo: UNEP

India currently produces 72,368 million litres of sewage daily, out of which only 20,235 million litres are treated says the Central Pollution Control Board (CPCB) report. Chandigarh is the only territory doing well in sewage management, treating 188 million litres per day.

What is even more alarming is that India does not fully utilise its potential capacity to treat sewage. India's current sewage systems and methods are able to treat 31,841 litres a day, and only 75% of the potential capacity is being utilised. According to the report, 60% of the total sewage treatment systems installed in the country are only in 5 states, namely, Maharashtra, Gujarat, Uttar Pradesh, Karnataka and Delhi. Northeastern states like Arunachal Pradesh, Manipur, Meghalaya, Nagaland and the two island Union territories, Andaman & Nicobar Islands and Lakshadweep do not even have sewage plants installed in their territories. Surprisingly, Bihar produces 2,276 million litres of sewage daily but has zero capacity to treat it even after having a sewage treatment plant in place.

What Is A Sewage Treatment Plant

Sewage Treatment Plant treats all wastewater by removing contaminants from the sewage. This leads to the discharge of treated water into the environment. The treated water can be used for irrigation, car washing, or other such activities that do not require potable water. Sewage is a collection of wastewater from businesses, households and industries. The objectives of sewage treatment plants are to prevent water pollution and promote water conservation.



Photo: iStock

Sewage Treatment: A Multiple-Choice Answer

There are plenty of sewage treatment processes to choose from. For example, there can be an onsite sewage treatment plant for buildings, societies and office parks or a combined treatment plant where sewage from significant territories like cities and states is treated together.

There are both natural and mechanical ways to treat sewage. A sewage treatment plant essentially pumps oxygen into the sewage to break down the contaminants by promoting the growth of pollutant eating bacteria. Sewage treatment aims to turn sewage into reusable or dischargeable water that will not pollute the environment.

Usually, in sewage treatment plants, water is first kept in a chamber until particles like oil and grease float up at the top, and the remaining solid wastes settle down in the chamber. After this water enters the second chamber where oxygen is pumped to help pollutant eating bacteria grow as these bacteria turn major pollutants into microscopic particles. Water is kept under observation in the last stage until the remaining impurities are settled down at the bottom. After that, the treated water is discharged and used for activities that do not require fresh water.

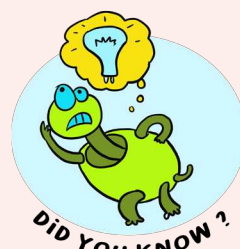
Aroha - Leading Upwards



AROHA has been promoting the installation of sewage treatment plants and using the treated water for afforestation. Witnessing rapid urban development and environmental degradation in the form of depleting groundwater and experiencing hot summers in its operating city of Nagpur,

Aroha has recognised the need for developing urban forests and water conservation. Aroha believes and envisions that increasing green cover and reusing treated water can help the city battle these harsh changes.

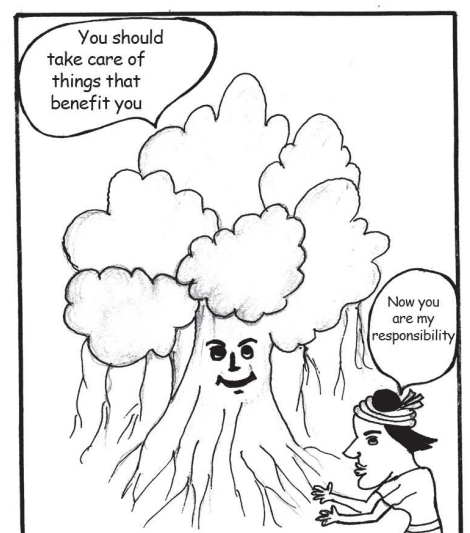
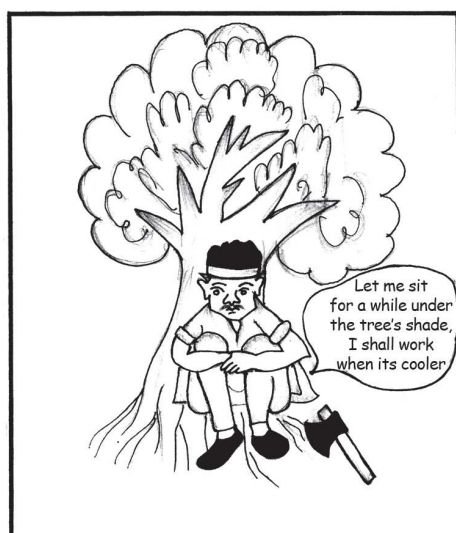
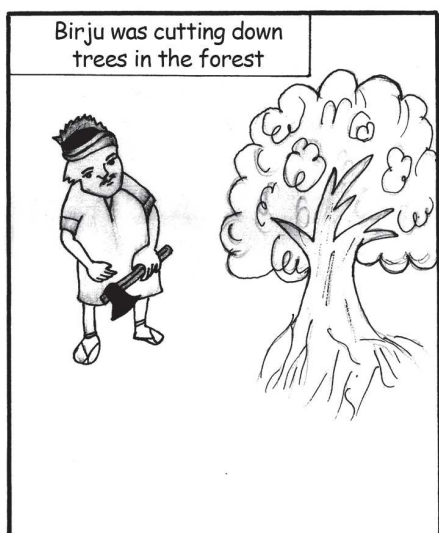
India's Biggest Treatment Plant coming up!



New Delhi will house India's biggest sewage treatment plant in Okhla. The Okhla plant built on 110 acres will have the capacity to treat 564 million litres of sewage per day. As per the authorities, the plant's construction will complete by the end of 2022. This plant will play a significant role in the cleaning process of river Yamuna as it will trap vast amounts of sewage floating in the river. In addition, the plant will house a solar drying system and suction-based clarifiers. The treated water from this plant will also rejuvenate water bodies and lakes in the region.

Save Environment to Save Life

BIBHA KUMARI (RASTA) GURUKUL



Baby Steps towards making Kitchen Sustainable

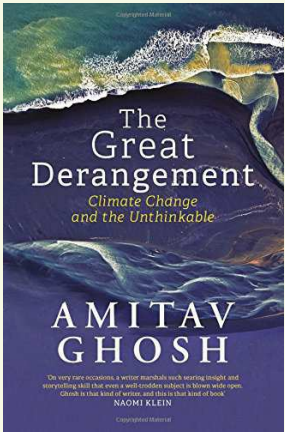


A piece of land that earlier used to be a dumping ground has now developed into kitchen garden with the efforts of Gorakhpur Environmental Action Group (GEAG). The first kitchen garden of this kind was inaugurated by Mrs Akansha Singh, wife of Police Commissioner Gautam Budh Nagar.

Through this initiative, kitchen waste composting has been taught to children of Harit Club. In addition, GEAG distributed vegetable seeds to children, and these children are taking care of this kitchen garden.

The development of the first kitchen garden was so successful that now there are a total of eight kitchen gardens in Gautam Bugh Nagar. By teaching love for nature to young minds, HCL Foundation and GEAG are making responsible citizens.

Books & Movies



The Great Derangement: Climate Change And The Unthinkable By Amitav Ghosh - 2016

World-renowned novelist Amitav Ghosh's 'The Great Derangement: Climate Change And The Unthinkable' is a non-fiction book that sheds light on our collective failure to battle global warming and climate crisis.

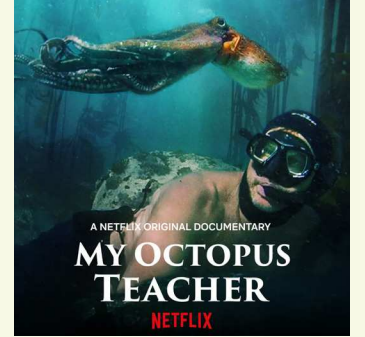
He describes how we have failed to help the environment at levels of politics, literature and history and how we still do not recognise the

severity of climate change.

Ghosh here takes up the mantle of analyst and storyteller and demonstrates the systemic problems and derangement existing in our present world arrangements. The book ends by hinting that politics, very much like literature, has become a matter of personal moral judgement rather than an area of collective action and demands people's attention toward climate change.

My Octopus Teacher

Netflix original documentary 'My Octopus Teacher' directed by James Reed and Pippa Ehrlich highlights a year spent by filmmaker Craig Foster in the Kelp Forest of South Africa and how, during his time there, he established a friendship with an Octopus. He began to record his experiences and in no time, met a curious and friendly young octopus that grabbed his attention.



The film documents Foster's increasing intimate bond with the octopus as he follows the octopus around for nearly a year. They form a friendship where the octopus plays with Foster and allows him to look into her life to see how she sleeps, lives, and eats.

The documentary is a heartfelt story of how a man and a wild aquatic animal can establish a friendly bond in no time and is appreciated around the world, and it also received the award for the best documentary feature at 93rd Academy Awards.

WASTE WATER - FRUITFUL TREE



Turning the Tableau on Environment



At the 2022 Republic Day's parade, Maharashtra's tableau had enormous statues of the Indian Gaint Squirrel found in the Sahyadri Mountains of the Western Ghats and a newly found spider species named Icius Tukarami. Other essential biodiversity symbols of Maharashtra and the Western Ghats were also part of the beautiful tableau. State bird 'Hariyal', state flower 'Jarul', state butterfly 'Blue Mormon' and the state tree 'Mango' was beautifully crafted in the statues. The tableau highlighted Maharashtra's and Western Ghat's rich biodiversity.

About the publication

HCL Foundation and World Comics India's collaborative initiative 'Harit Khabar' is a monthly newspaper that aims to educate people on environmental issues and challenges and raise community participation towards the cause of the environment.

This publication has been launched to provide a platform to various partner organizations working in collaboration with the HCL Foundation's distinct flagship programme HCL Harit - The Green Initiative to showcase their work and accomplishments and also to create a network between them.

Through Harit Khabar we aim to stir meaningful debates on critical issues concerning our environment and ecosystem, accessibility to environmental education and public participation in decision-making processes in the country.

About HCL Foundation

HCL Technologies implements its Corporate Social Responsibility agenda through its CSR arm, the HCL Foundation. Various flagship programs and special initiatives of the Foundation endeavor to contribute toward national and international development goals, bringing about lasting positive impact on people and the planet through long-term sustainable programs.

About World Comics India

Advancing Grassroots Comics as an alternate tool of communication to local communities, World Comics India has been continuously working for the past 20 years. Many successful mass campaigns have also been organized using this medium of communication.

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