CSIR IN MEDIA

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The Innovation Engine of India

NEWS BULLETIN
26 TO 31 MAY 2024

Entries open for bougainvillea fest

CSIR-NBRI 31st May , 2024

A perfect picturesque bougainvillea bloom on your rooftop may win a prize and even praise from scientists, experts and people of Lucknow. All you need to do is register for participation in the CSIR-National Botanical Research Institute (NBRI) bougainvillea festival on Jun 9 at NBRI's K N Kaul block lawn.

The flower show-cum-competition is open to all govt, semi-govt, private institutions, nurserymen and individuals. No entry fee will be charged.

"Those interested in participating may contact us on Jun 8. A competitor may enter multiple exhibits in a section but will be given a maximum of one prize. All exhibits must be correctly and legibly labelled. Screening for participation will be done by our scientists who are experts in the field," said Rajat Rastogi, NBRI spokesperson.

He added that one prize in every category will be awarded based on scores. The decision of judges will be final. The show will be open to public on Sunday, Jun 9, from 10 am to 6 pm. Prize distribution ceremony will take place the same day at 3pm. "The categories and criteria set for participation include selected colour and categories. Regarding colours, bougainvillea of white, yellow, pink/magenta, bi-colour—one with two distinct colours—and multi-coloured within a single display or plant are invited for participation. Apart from this, bonsai and topiary forms shaped and trimmed into decorative forms and figures may also participate," he said.

The festival will also feature all summer blooming plants.

Published in:
Times of India

Joint Indo-China study traces history of weakening monsoon back to 12 million years

CSIR-NIO

31st May , 2024

Even as India and China are slugging it out on the Himalayas and the Indian Ocean for regional supremacy, ocean scientists from Beijing and Goa have collaborated for an international study that examine the erratic rains caused by weak monsoon, which we have been witnessing in recent times due to climate change, traced back as far as 12 million years.

This study titled, 'Weakening of the South Asian summer monsoon linked to inter-hemispheric ice-sheet growth since 12 Ma', gives insights into the changing pattern of the monsoon system, caused by climate warming. It has been published in the journal 'Nature Communications'.

The study has been co-authored by Zhengquan Yao and Xuefa Shi, from the First Institute of Oceanography, Ministry of Natural Resources, Qingdao, China; Zhengtang Guo from Key Laboratory of Cenozoic Geology and Environment, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China along with B Nagender Nath from CSIR-National Institute of Oceanography (NIO), Goa and others.

"The study's objective was to understand the longterm evolutionary pattern of South Asian monsoon system. Here we had a geological archive; the deepest part of the archive had an age of 12 million years," said Nath, former NIO chief scientist.

"The archive is a sediment core drilled in the Maldives inner Sea which is a carbonate platform in the Northern Indian Ocean as a part of International Ocean Discovery Program (IODP) expedition," the senior scientist said.

"The study was designed to address changes in sea level and currents, along with monsoon evolution in the Indian Ocean. The expedition had researchers from all the member countries.

IODP India (nodal agency being MoES-NCPOR, Goa) nominated me to participate. My then employer CSIR-NIO too had encouraged my participation," he said.

In view of the fluctuating nature of rainfall that has become more frequent in recent decades, this past study assumes importance. A weakening of southwest monsoon on longer time periods has been inferred from this sediment core study, which is driven by the increase in ice sheet growth in the Southern Hemisphere and in Greenland.

"This weakening of monsoon can be traced to two different periods - 12 million years and 4 million years ago, when the strength of the Southwest Monsoon wind and the North Westerly 'shamal' winds decreased," Nath said.

However, in shortterm, the intensity of the monsoon could increase due to temperature warming and reduction of ice sheet thickness in Polar Regions.

"We found that there was a decrease in the dust deposition at 12 million years and 4 million years ago, which is due to the weakening of the monsoon winds," the former NIO Chief Scientist added.

When asked why there was collaboration with the Chinese, Nath said, "This was part of a major international programme with participation from member countries. Like India, China too is a member country in the IODP."

"In the expedition 359, myself and the first author of the paper Dr Zhengquan Yao were part of the Sedimentology group on board the drilling vessel JOIDES Resolution. This project was proposed by Dr Yao and he wanted to collaborate with us in view of our familiarity with the geology of the Northern Indian Ocean. We provided key inputs in identifying the source regions of mineral dust supply," he said.

Published in:
Heraldgoa

CSIR-CCMB, Aganitha ink pact to use AI for new-gen therapeutics

CSIR-CCMB

30th May , 2024

CSIR-CCMB and private sector firm Aganitha has signed a framework agreement to apply generative AI for therapeutic design and research in multiple disease areas, especially for malaria, tuberculosis (TB) and neurological disorders in the initial phase of collaboration on Wednesday.

The memorandum of understanding is to apply AI (artificial intelligence) solutions for small molecule and antibody design for translation of CCMB's research and development findings into therapeutic candidates as well as design of research antibodies, said an official release.

CCMB director Vinay Nandicoori noted that "the collaboration is forward-looking in utilising the institute's strength in fundamental research on disease biology-driven solutions. It is timely for us to forge such a collaboration to take our lab leads towards more real-life solutions."

Aganitha co-founder and managing director Prasad Chodavarupu said the pact is a "great example" of the academia-industry collaboration needed to make a significant impact towards solving human diseases and suffering. "Our multi-disciplinary research team specialises in multi-scale systems biology, quantum chemistry, and Generative AI, leveraging the virtual loop of innovation happening between deep science and deep tech, to transform global life sciences R&D," he said.

CCMB's senior principal scientist Puran Singh Sijwali pointed out that controlling malaria has become a major issue due to "drug resistance, lack of broadly available vaccines, and insecticide resistance of mosquitoes. We are going to leverage Aganitha's generative AI capabilities in small molecules space for validated parasite drug targets to predict, test, and optimize potential antimalarial compounds."

Similarly for TB research, the research work is towards the structure-based discovery of small molecule inhibitors targeting essential proteins of Mycobacterium Tuberculosis. “We anticipate this will lead to identification of multiple novel anti-TB therapeutic leads,” said senior principal scientist Raghunand Tirumalai.

For studying neurotransmission in the central nervous system, the collaboration intends to “develop nanobody binders targeting a class of neurotransmitter receptors or ‘GluD1’ receptors. These nanobodies might serve as precise molecular tools to modulate ‘GluD1’ receptor activity, potentially unlocking novel therapeutic avenues for neurological disorders like Alzheimer’s and epilepsy,” said another senior principal scientist Janesh Kumar.

With their small size and high specificity, nanobodies hold promise for targeted drug delivery and imaging applications, paving the way for tailored treatments with reduced side effects, he added.

Published in:
The Hindu

Floating earthmover may help BBMP rid lakes of weed

CSIR-NAL

30th May , 2024

What started as a 12-foot-long small boat in 2017 has now become a 40-foot-long floating earthmover developed by CSIR-National Aerospace Laboratories (CSIR-NAL). Jaldost, designed to clear hyacinth and garbage in waterbodies up to two feet in depth, is being pitched for cleaning the city lakes.

Now in the commercial stage of production after the prototype was tested, the commercial arm that is scaling the product is confident of manufacturing another unit within three months.

Karthikeyan from CSIR-NAL, who is the project leader for Jaldost, said the prototype is tested and in the commercial stage. “We are in talks with BBMP,” he said.

Ganesan G, VP of business development at Shri Vari Engg Systems Pvt Ltd, which is the commercial arm of Jaldost, said BBMP has principally agreed to procure the machine, but the deal is yet to be formalised. Since 2017, Karthikeyan has been working with the Indian Army, which gave him the space to test his mechanism at Ulsoor Lake. “So far, 20 tonnes of weed and garbage have been cleared from Ulsoor Lake. In Aug 2023, locals of the fishing society in the catchment of Manchanabele Reservoir called us to clear weed. Their nets were getting stuck in the water hyacinth, and they were unable to fish. In 20 days, we cleared 2,000 tonnes of hyacinth. Villagers made use of the dried-up weeds to feed their cattle,” he said.

The third field test was at Kannamangala Lake near Hoskote. “The surroundings of the lake were beautified, but there was no cleanliness in the core of the waterbody because India lacks equipment. Imported equipment would cost about Rs 2.5 crore. Our machine can do it and we are selling it for less than half that price,” said Karthikeyan.

The indigenous advanced airboat system was developed in the CSIR-NAL lab, absorbing learnings from aerospace engineering and instrumentation. “We used our knowledge of lightweight tech that is used for aircraft and designed this floating equipment, which is a fraction of the weight of earthmovers. We created the stiffened panel to allow it to float, and the machine weighs just four tonnes,” he said.

Published in:
Times of India

Final phase of sample collection & health check-up camps underway at CSIR-NIO Goa under Nationwide Health Monitoring Project PI-CHeCK

CSIR-NIO

28th May , 2024

In a significant move towards understanding and mitigating the rising incidence of cardiometabolic disorders in the Indian population, the Council of Scientific and Industrial Research (CSIR) has launched the 'Phenome India-CSIR Health Cohort Knowledgebase' (PI-CHeCK). This landmark initiative aims to assess the risk factors and incidence of non-communicable diseases, particularly cardiometabolic disorders, through the establishment of a longitudinal health cohort. The final phase of sample collection and health check-up camps is currently underway at the CSIR-National Institute of Oceanography in Dona Paula, Goa, from 27th May to 2nd June 2024. This phase marks a crucial step in completing the initial data collection process.

The PI-CHeCK programme, inaugurated on 7th December 2023, focuses on gathering comprehensive health data from CSIR employees, pensioners, and their spouses over an initial period of five years. By leveraging the widespread distribution of CSIR laboratories across the country, the programme ensures a representative sampling across various states, contributing to a robust and diverse health knowledge base.

Under this initiative, health data and biological samples are being collected to create a detailed phenotypic database. This database will facilitate advanced research and the development of new strategies for risk stratification, prevention, and management of cardiometabolic diseases in India.

Following the conclusion of the Phase I sampling, a comprehensive review will be conducted on 3rd June 2024. Coordinators from all participating CSIR laboratories, along with their Directors and the Director General of CSIR, will convene to evaluate the progress and findings of the first phase of the PI-CHeCK programme. This review will set the stage for subsequent phases and the continuous monitoring of health data, ensuring the programme's long-term success.

Through this pioneering project, CSIR aims to pave the way for evidence-based health interventions and policy formulations that can significantly improve the health outcomes of the Indian populace.

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Pib

Innovation, tech push defining India's growth, says Dhankhar

CSIR-NAL

28th May , 2024

Bengaluru: India's scientific community is converging to fuel transformative change and widening the range of opportunities for the country's youth, Vice President Jagdeep Dhankhar said here on Monday. He was speaking at CSIR-National Aerospace Laboratories after a visit to the facility.

Calling the laboratory a crucible where India's outlook for the future was taking shape, the Vice President said the country was on a course of incremental growth, which the world was noticing.

"India is one of the countries that are focusing on disruptive technologies. Our quantum computing system is already in place. We are also focusing on Machine Learning, blockchain, Artificial Intelligence, and Internet of Things," he said.

Highlighting India's recent successes in the field of space, Dhankhar noted that several institutions had come together to accomplish the feats.

He underlined the wind tunnel facility at CSIR-NAL for its role in India's space missions, including Chandrayaan-3. The trisonic wind tunnel has, since its 1967 inception, been providing critical aerodynamics data for India's aerospace programmes.

Speaking about the shift from conventional warfare to the more advanced models, Dhankhar said countries that invest in technological upgrades were likely to have secure borders. India's progress in this domain will be determined by laboratories like CSIR-NAL, he said.

Earlier, Dhankhar witnessed the flying display of Hansa NG, the indigenous flying trainer designed and developed by CSIR-NAL. He was briefed on the aviation technology innovations accomplished by the organisation. He also inaugurated the Centre for Carbon Fibre and Prepregs during his visit.

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Deccanherald

CSIR-NIIST in Pact with Kerala-based Firm to Make Vegan Leather

CSIR-NIIST

27th May , 2024

The CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST) has inked a pact with Kerala-based Alter Wave Eco Innovations (AWEI) Pvt. Ltd. to transfer the technology it developed for manufacturing vegan leather. The new technology allows the company to manufacture environment friendly replacements for animal leather from plant sources like pineapple leaves, banana stems, rice straws, etc., without using plastic as a core ingredient.

Dr C Anandharamakrishnan, Director of CSIR-NIIST, Thiruvananthapuram, and Jeswin George, Nidhin Sotter, Nigil Sotter, and Tigil Thomas, all directors of AWEI, exchanged the MoU at a function held on its campus at Pappanamcode, here.

“This is CSIR-NIIST’s fifth technology transfer for manufacturing plant leather alternatives, and the first of its kind from Kerala,” CSIR-NIIST Director Dr Anandharamakrishnan said.

“The collaboration brings together NIIST’s expertise in developing cutting-edge technologies with AWEI’s desire for sustainable manufacturing based on plant-based, biodegradable, high-performing materials and will provide farmers with an additional income stream,” he added.

The technology will help AWEI, based in Malayattoor in Ernakulam district, tap into nature’s abundant agricultural biomass and other bio-materials sourced from farmers and farming communities.

Kerala has about 20,000 hectares of pineapple farms, primarily concentrated in Ernakulam district. These farms generate approximately 720,000 million tonnes of farm waste, which can be used to make vegan leather.

A CSIR-NIIST team led by Dr Anjineyulu Kothakota, Senior Scientist at the CSIR-NIIST campus in the state capital, developed the technology for making sustainable biomaterial alternatives to animal leather.

Thiruvananthapuram-based NIIST is a premier interdisciplinary research laboratory and a constituent laboratory of the Council of Scientific and Industrial Research (CSIR), Government of India.

AWEI, which will use the NIIST technology to make vegan leather, describes itself as a platform for plant-based, biodegradable, high-performing materials,"designed to remake everything."

Its promoters say their approach involves tapping into nature's abundant agricultural biomass, such as pineapple leaves, banana stems, rice straws and sugar cane stumps sourced from farmers and farming communities.

It provides farmers with an additional income stream by upcycling these resources into non-toxic, durable, leather-like materials for the fashion and automotive industries.

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Newsexperts

Skyward leap. India on course to joining the elite HAP club

CSIR-NAL

27th May , 2024

India has carved a place for itself in many exclusive niches — it is among the very few countries to have achieved moon landing, to possess anti-satellite missile systems, intercontinental ballistic missile (ICBM) and ICMBs with multiple independently targetable re-entry capabilities. And now, the country is on course to join a very select club of countries that have their own long-flight, High-Altitude Platforms (HAP).

On May 7, the public funded research body, CSIR-NAL (National Aerospace Laboratories), test-flew a vehicle first to a height of about 3,000 feet (with a 'synthetic aperture radar' payload, made by the start-up, Galaxeye Space). It came back and took off again and flew to 25,000 feet (about 8 km), without the payload. The "subscale flight" was a milestone event in the journey towards the development of a full-scale HAP. The learnings from the flight would be used to build a bigger vehicle, which is the target of the 'High Altitude Platform Program', by December 2025. When NAL achieves the feat, India might be only the second or the third country to have HAP (depending upon other countries' progress.)

What is HAP?

HAP is an unmanned aerial vehicle. Think of it as a big drone, but with two essential differences — the HAP typically operates at a height of 18-20 km above earth, clearing all air traffic and weather, and is equipped to stay up there for longer periods than drones — from several hours to even months.

The HAP that NAL is developing is being designed to stay airborne for 90 days — unless other HAP hopefuls get better earlier, NAL's HAP would set a world record.

A HAP can do many things that a satellite can — surveillance, imaging the earth below, for both civilian and strategic purposes and can also be used, where economics work out, to

provide telecommunications and broadband services over a chosen region — all at a fraction of the cost of a satellite. Of course, a satellite can be packed with far more capabilities and can stay up there for years — so HAPs won't replace satellites but will complement them. Potentially, HAPs could compete with Elon Musk's Starlink.

A satellite does not need to be powered for its orbital flight — it does this by gravity. But a HAP needs some propulsion system, with on-board energy generation capability. This, today, only means solar power, with batteries to store energy for night-time flight.

A new player in the sky

NAL's HAP that was test-flown on May 7 was a much smaller version than the target vehicle. It stood 12-m across from wing-to-wing, had two motors with conventional solar panels and lithium-ion batteries to power them. This was just to collect data that would be used in the building of the bigger vehicle, Dr Abhay Pashilkar, told quantum.

The full-scale vehicle that is under development will be very different than the subscale model, in terms of size and energy-propulsion systems. With a wingspan of 35 metres (roughly same as of A-320 aircraft) and weighing 150 kg, the HAP will be capable of carrying payloads up to 15 kg.

The vehicle that NAL is developing is at the cutting edge of technology. Dr L Venkatakrishnan, NAL's Program Director–High Altitude Platform, and Chief Scientist and Head, Experimental Aerodynamics Division, told quantum that the full-scale vehicle's solar cells would not be the conventional silicon, but of gallium arsenide, and produced by the US company MicroLink. These can convert 30 per cent of sunlight into electricity; conventional solar cells do 20 per cent maximum. And the battery of NAL's HAP will pack much more energy. The energy density of the battery — likely to be a lithium-silicon or lithium-sulphur— will be 400-500 Watt-hour per kg of material; comparatively, Tesla's batteries have about 270 Whr/kg. As for total battery power, Venkatakrishnan said, "a lot depends upon the design and payload — now we can only say what is the Whr/kg at cell level that we aim for."

Furthermore, the solar cells and the batteries should be shielded from the extreme cold at an altitude of 20 km (minus 55oC). Venkatakrishnan said the HAP could carry payloads weighing up to 15 kg. It will be geostationary, circling over a chosen region 24x7, at a speed of 100 kmph.

Taking the vehicle up there could be as challenging as making it. Since the HAP is basically a light-weight vehicle one must be careful about the structural integrity of the airframe. "It is like crossing a road," Venkatakrishnan said, "once you get to the other side, you are safe, but while you are crossing you must be careful."

Future plans

Between now and December 2025, NAL will be building a full-scale prototype, using the learnings from the recent sub-scale flight. The full-scale HAP will also be equipped with auto pilot capabilities — the hardware for it would be bought, but the software written in-house. To test the software, NAL might do one more flight of a sub-scale vehicle later this year. "Over the next one-and-a-half years, a lot of ground tests will be done," Venkatakrishnan said.

NAL is really aiming for the sky. No other HAP in the world is capable 90-day endurance. Airbus' Zephyr has demonstrated 64 days flight. Others are being built. Phasa-35, made by UK's Prismatic (a subsidiary of BAE Systems) last year demonstrated a stratospheric flight for 24 hours, but the company mentions "several months" as the HAP's endurance. Lockheed Martin was working on a High Altitude Airship, a much heavier vehicle, but is said to have closed the program. How much would the HAL cost? Venkatakrishnan did not wish to divulge the cost of developing the HAP, (nor the budget for the program which began in April 2021) but observed that the Zephyr had been offered for £8 million.

But then cost considerations take a backseat when it comes to a country's security or disaster relief — the most likely uses of the HAP.

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Thehindubusinessline

Text of the Vice President's speech after visiting National Aerospace Limited (NAL) facilities and laying the foundation stone of Centre for Carbon Fiber and Prepregs in Bengaluru (Excerpts)

CSIR-NAL

27th May , 2024

I greet you, I congratulate you. In past one hour or so, I have been surcharged, energised and motivated. I have been telling, driven by the ground reality, that India is a land of hope and possibility. But, here I find that our futuristic outlook is taking shape. This is the laboratory, this is the crucible where these things are happening. As a student of physics honours, I'm absolutely delighted. In Amrit Kaal, we are seeing India's rise. The rise is unstoppable, the rise is incremental but the kind of rise which you are defining here is a rise that the world is noticing. We are going to be one of the top nations in the world.

India is one of the countries that are focusing on disruptive technologies as no other country is doing. There are 5, 6 countries in the world focusing on that. Our quantum computing system that will be of extreme awareness to you all is already in place. The government has already made allocations. We are also focusing on other disruptive technologies and they have extreme bearing here also. Machine learning, blockchain, artificial intelligence, internet of things. In general perception, these technologies pose a challenge. But for you, this challenge is opportunity. You are increasing the opportunity basket of our youth, our impressionable minds.

Friends, the Institute has grown into a powerhouse of Research and development contributing significantly to Aerospace sector and beyond. In last two years, India's space accomplishments have come to be globally recognised. Both in the field of Defence and also in the shape of things like Chandrayan-3. All this, I now realise is not the handiwork of one Institution, it is the convergence of several institutions that has contributed to this.

Wind tunnel facility… since I have a little bit modest understanding about it, I was thrilled. I could see what is to come. I inquired from the director, how long will it take us to be in the top group? Well, not many years. Since the beginning has been made, right steps have been taken, visionary leadership has provided futuristic governance policies for it. India will regain its past glory of having controlled the global knowledge about space and astronomy.

Wind tunnel facility, engineering marvel, looks simple when you look at it, but just imagine when it functions, the entire body is thrilled, how challenging is the job, how they are partners, significant stakeholders in the success of all that we are witnessing and relishing, including Chandrayan-3. Modern age is marked by transformational revolutionary changes. I am firmly committed to our thought process that education is the most impactful transactional mechanism of change. It brings about a change that respects equality, cuts into inequities. But more than that, and much beyond that, and what is need of the hour, is technological advancement.

A country that is investing in technological advancement will have secure boundaries. Gone are the days of conventional warfare. I have before me men in uniform. They know the changing dynamics of warfare. It's gone much beyond conventional warfare. How our position will happen, how strongly we will be, will be determined in laboratories like this. And the good thing is, our future is bright because you people are working with that intellect, education, which is unrivalled in the world. The indigenous aircraft showcasing India's ability to design and produce advanced aviation technology truly stands as a symbol of an Atmanirbhar Bharat. Friends, I saw three things and all three will change our landscape, our airspace. One, the one in which I said, which is used for training purposes, not only it will

create a fleet of people interested in aviation and pilots, the second one, transport, amazing. And the third one, you don't need a pilot. It can remain in the sky for 90 days and self power for the reason that it translates solar energy into power for itself. Now, these are big ticket changes. The entire rural landscape of this country is surcharged when the Prime Minister announced that women in the villages will have the capacity to operate drones, it is within their reach. What you are doing will have great commercial exploitation. There will be growth of industry. I inquired from the director… mass production, you will have involvement of private sector, public sector and in defence, the utility is there. But a country that was importing and 100% importing defence equipment is now exporting defense equipment in billions of dollars. All I can indicate friends at the moment is that 1.4 billion people of this country with total dedication are part of a marathon march.

The objective is, the destination is a developed nation at 2047 when we celebrate centenary of our Independence. In this great exercise in the great Yagya and Hawan, आपकी आहुति बहुत महत्वपूर्ण है। भारत की विकास यात्रा में, विकास में हवन में जो आहुति टेक्नोलॉजी की होगी, जो आहुति आपकी होगी वह बहुत महत्वपूर्ण होगी।
भारत की यात्रा शुरू हो चुकी है।
Rise of this country is unstoppable. The rise is incremental.
जो tough challenge था, जो headwinds थी उसके बावजूद हमारी प्रगति इतनी जबरदस्त है, यह आने वाले समय में आप अंदाजा लगा सकते हैं। We are marching friends in togetherness with absolute confidence. India will be a developed nation of world leaders and an economic power already it is in 2047.
मुझे यहाँ आकार बहुत अच्छा लगा।
बहुत बड़ी ऊर्जा मेरे मे आई है। बहुत बड़ी ताकत आई है and I have no doubt this reflects mood of the nation. Congratulations to you all, greetings to you, salutation to you all for the work you are doing, and the work you are doing is not much in public domain. This silent revolution which you are bringing about, and people will come to know then their confidence will go geometric not arithmetic.

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Council of Scientific and Industrial Research (CSIR)-Central Mechanical Engineering Research launched Electric Tiller

CSIR-CMERI

26th May , 2024

Dr. N. Kalaiselvi, Director General,Council of Scientific and Industrial Research (CSIR)& Secretary, Department of Scientific and Industrial Research (DSIR) unveiled the Central Mechanical Engineering Research institute's Electric Tiller in Durgapur on 25th May 2024. The CSIR-CMERI's innovative technologyistailored to meet the requirements of small to marginal farmers, who constitute over 80% of the nation's farming community.

These farmers, typically with land holdings of less than 2 hectares, can utilize the electric tiller for various agricultural tasks, benefiting from substantially reduced operational costs. Furthermore, this advancement underscores India's commitment to achieving net-zero emissions and promoting environmentally friendly farming practices.

The Electric Tiller boasts enhanced torque and field efficiency, while also prioritizing user comfort and environmental sustainability. It significantly reduces hand-arm vibration, operates quietly, and produces zero exhaust emissions compared to traditional ICE tillers. With the potential to decrease operational costs by up to 85%, its user-friendly design supports battery pack swapping and offers multiple charging options, including AC and Solar DC charging.

The tiller also seamlessly integrates with a wide array of standard agricultural attachments such as ridgers, ploughs, iron wheels, and cultivators.It comes equipped with a 2-inch water pump and a trolley attachment capable of carrying up to 500 kg, further enhancing its versatility. Featuring electronic controls and ergonomic handling, operators can navigate fields

with ease, minimizing fatigue and maximizing productivity. The Electric Tiller from CSIR-CMERI marks a significant milestone in agricultural machinery, paving the way for a more sustainable and efficient farming future.

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State Environment Journos Hold Climate Change Dialogue Under Tree Cover

CSIR-NEIST 26th May , 2024

In a broad deviation from the usual classroom model, young journalists under a program of the Directorate of Environment and Climate Change, Government of Manipur's 'Media Fellowship on Climate Change Reporting' gathered under the shade of tall imposing trees within the lush green setting of the State Botanical Garden at Khongampat in Imphal West District on Saturday.

The media fellowship is an ongoing flagship program of the State Climate Change Cell's Media Resource Center under the Directorate, initiated since the year 2019, with ten fellowships awarded to young journalists based in the State each year to write stories of interest on climate-related issues.

Saturday's program saw the fifth batch of the fellowship award. As part of the monthly interaction program held for the fellows with open-ended interactions with scientists, academicians and other knowledgeable persons, the program had well-known scientist Dr Huidrom Birkumar, Chief Scientist at the CSIR-NEIST, Lamphelpat, and wildlife expert Dr Kh Shamungou (Sangai Shamungou) sharing their views on climate-related floral and faunal scenario in the State.

Interacting with the media fellows, Dr T. Brajakumar, Director DoECC, opined that journalists writing stories and reporting on climate-related issues need to go through the pace of authentic government bulletins and reliable information sources before publishing news on climate change-related scenarios so as to avoid factual errors and misinformation that may mislead readers on the implications of weather and climate events.

Emphasizing the thrust areas on the thematic deliberation for the forthcoming World Environment Day annual observation on the 5th of next month, Brajakumar stressed proper

reporting in the current State scenario reflecting the processes of desertification and drought, if any, resulting from different anthropogenic activities that impact the natural environment negatively.

The theme for the year 2024's global environment deliberation is focused on 'Land restoration, desertification and drought resilience' under the slogan "Our Land, Our Future", re-emphasizing the concerns on land degradation due to uncontrolled deforestation on a large scale and the resulting decline of spring sheds affecting the environmental flows of rivers and groundwater recharge of important aquifers. Saudi Arabia is hosting this year's global mega-event on the environment.

The ten media fellows for this current year's program are Ng Liklaileima (Sangai Express), Ksh Chitrabhanu (Imphal Review of Arts and the Politics), Donald Sairem (Hueiyen Lanpao), Ng Thomas (Imphal Free Press), L Kamaljit (Sanaleibak), Donald Takhell (Imphal Review of Arts and the Politics), Ricky Angkang (IFP Ukhrul correspondent), Nongmaithem Debrani (The People's Chronicle), Ksh Ganga (All India Radio Imphal), and Khumanthem Gentle (SKTV).

The sub-themes for the current year's fellowship program are focused on three related areas: climate and agriculture, climate and health, and climate and water. The fellows are expected to come up with stories from the ground based on actualities supported with authentic data and first hand information from the field. The stories generated are expected to have implications on policy planning for climate-related issues at the State level.

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