जुलाई
July
2025

खंड/Vol. : 50 अंक/Issue : 127

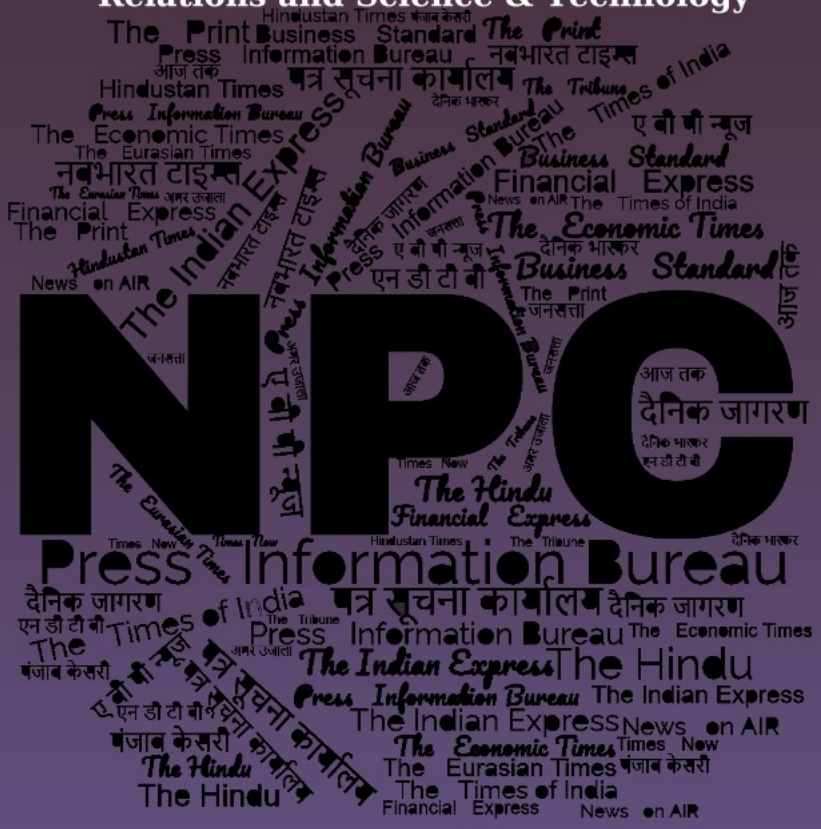
10/07/2025

समाचार पत्रों से चयनित अंश

Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाउस, दिल्ली - 110 054
Metcalfe House, Delhi - 110 054

CONTENTS

Defence News

1000 मीटर की गहराई में बचाव अभियान को अंजाम देगा 'निस्तार'

Source: Dainik Jagran, Dt. 10 Jul 2025

नई दिल्ली, प्रेट्र : रक्षा क्षेत्र में आत्मनिर्भरता की दिशा में एक महत्वपूर्ण कदम उठाते हुए भारतीय नौसेना को विशाखापत्तनम स्थित हिंदुस्तान शिपयार्ड लिमिटेड (एचएसएल) से अपना पहला स्वदेशी रूप से डिजाइन और निर्मित डाइविंग सपोर्ट पोत (डीएसवी) "आइएनएस निस्तार" प्राप्त हुआ है। लगभग 75 प्रतिशत स्वदेशी सामग्री से निर्मित निस्तार समुद्री क्षेत्र में आत्मनिर्भर भारत का एक उत्कृष्ट उदाहरण है। निस्तार के शामिल होने से नौसेना की क्षमताएं उल्लेखनीय रूप से बढ़ गई हैं। समुद्र में 1000 मीटर की गहराई में भी बचाव अभियान को अंजाम देने में सक्षम यह पोत स्वदेशी जहाज निर्माण कौशल को रणनीतिक नौसैनिक उपयोगिता से जोड़ने के साथ-साथ भारत के रक्षा विनिर्माण पारिस्थितिकी तंत्र को भी सुदृढ़ करता है।

- रक्षा क्षेत्र में आत्मनिर्भरता को लगे पंख, नौसेना को मिला पहला स्वदेशी गोताखोरी पोत
- 118 मीटर लंबे इस पोत में अत्याधुनिक उपकरण लगे हैं

स्वदेशी निर्माण में मील का पत्थर

यह जहाज समुद्र में डूबे बचाव पोत (डीएसआरवी) के लिए 'मदर शिप' के रूप में भी काम करेगा ताकि पानी के नीचे किसी पनडुब्बी में आपात स्थिति में कर्मियों को बचाया जा सके। नौसेना प्रवक्ता ने बताया कि 1000 मीटर की गहराई तक गोताखोर निगरानी और बचाव अभियान को सफलतापूर्वक अंजाम देने के लिए इसे रिमोटली आपरेटेड व्हीकल्स से भी लैस किया गया है। उन्होंने कहा कि लगभग 75 प्रतिशत स्वदेशी सामग्री वाले निस्तार की डिलीवरी भारतीय नौसेना के स्वदेशी निर्माण की खोज में एक और मील का पत्थर है।

<< हिंदुस्तान शिपयार्ड लिमिटेड ने मंगलवार को स्वदेश निर्मित पहले डाइविंग सपोर्ट पोत आइएनएस निस्तार को विशाखापतनम में भारतीय नौसेना को सौंपा ● सौ. पीआइबी

नौसेना के एक प्रवक्ता ने कहा कि निस्तार को आठ जुलाई को नौसेना को सौंपा गया। इस पोत को भारतीय नौवहन के मानकों के अनुरूप ही डिजाइन और निर्मित किया गया है जो अत्यधिक विशिष्ट है और गहरे समुद्र में गोताखोरी तथा बचाव अभियान चला सकता है। यह क्षमता दुनिया भर की चुनिंदा नौसेनाओं के पास ही है। यह अत्याधुनिक भारतीय इंजीनियरिंग को प्रदर्शित करता है तथा "मेक इन इंडिया" पहल के तहत स्वदेशी क्षमताओं की ओर नौसेना के निरंतर प्रयास को भी रेखांकित करता है।

*

'Nistar' joins Navy fleet to boost deep sea diving, submarine rescue ops

Source: The Statesman, Dt. 10 Jul 2025

he Indian Navy received, 'Nistar', the first indigenously designed and constructed diving support vessel, which was delivered by Hindustan Shipyard Limited at Visakhapatnam.

he ship's name, 'Nistar', originates from Sanskrit and means liberation, rescue or salvation. The ship, measuring 118 m with a tonnage of nearly 10,000 tons, is installed with state-of-the-art diving equipment and has the capability to undertake Deep Sea Saturation Diving up to 300 m depth. The ship also has a Side Diving Stage for undertaking Diving Operations up to 75 m depth.

A statement from the Naval spokesperson stated that the warship has been designed and built as per classification rules of the Indian Register of Shipping (IRS). The ship is highly specialised and can undertake Deep Sea Diving and Rescue Operations – a capability with select Navies across the globe.

The ship will also serve as the 'Mother Ship' for the Deep Submergence Rescue Vessel (DSRV), to rescue and evacuate personnel, in case of an emergency in a submarine underwater. The ship is equipped with a combination of Remotely Operated Vehicles to undertake Diver Monitoring and Salvage Operations up to a depth of 1000 m.

The delivery of Nistar, with nearly 75 percent indigenous content, is yet another milestone in the Indian Navy's quest for indigenous construction and is in line with the Government of India's vision of Aatmanirbhar Bharat and the Make in India campaign, the statement read.

https://www.thestatesman.com/india/nistar-joins-navy-fleet-to-boost-deep-sea-diving-submarine-rescue-ops-1503455533.html

*

India, Namibia bolster ties, sign pacts on defence, critical minerals

Source: The Tribune, Dt. 10 Jul 2025

India and Namibia on Wednesday signed four key agreements and strengthened bilateral cooperation across sectors ranging from defence to critical minerals, following talks between Prime Minister Narendra Modi and Namibian President Netumbo Nandi-Ndaitwah in Windhoek.

The two sides inked Memorandums of Understanding (MoUs) on setting up an Entrepreneurship Development Centre in Namibia and enhancing collaboration in health and medicine. Other agreements covered cooperation in biofuels and disaster-resilient infrastructure.

Modi, who arrived in Namibia's capital from Brazil on the final leg of his five-nation tour, held delegation-level talks with President Nandi-Ndaitwah at the State House. The leaders reviewed the

full spectrum of bilateral ties, including digital technology, security, agriculture, education and healthcare.

Prime Minister Modi expressed gratitude to Namibia for its condolences and support following the Pahalgam terror attack and the Ahmedabad flight crash. He also acknowledged Namibia's role in 'Project Cheetah', which reintroduced cheetahs to India.

"Our historical ties are rooted in mutual trust and shared values. India is proud to have supported Namibia's struggle for independence, raising its voice at the UNGA as early as 1946. Mahatma Gandhi's ideals continue to inspire both our nations," Modi said during the talks.

Prime Minister Narendra Modi was on Wednesday conferred the Order of the Most Ancient Welwitschia Mirabilis, Namibia's highest civilian honour. The award, instituted in 1995 — five years after Namibia gained independence —recognises distinguished service and leadership. It is named after the Welwitschia Mirabilis, a rare and ancient desert plant endemic to Namibia, symbolising resilience, longevity and the enduring spirit of the Namibian people. This marks the 27th international award conferred on PM Modi and the fourth during his ongoing five-nation tour.

Namibia, rich in natural resources such as uranium, copper, cobalt and rare earths, is an important partner for India's mineral security. Trade between the two countries largely centres on mineral resources, including zinc and diamond processing.

Modi highlighted India's National Critical Minerals Mission and invited Namibia to partner in the initiative. "We can work towards a Critical Minerals Partnership Agreement," he said.

This marks PM Modi's first visit to Namibia, and only the third by an Indian PM to the country in the past 27 years. He was accorded a traditional welcome at Hosea Kutako International Airport and an official ceremonial reception ahead of the talks.

Addressing a Joint Session of Parliament of the Republic of Namibia, the PM said, "Africa must not be just a source of raw material, it must lead in value creation and sustainable growth."

Underlining that India values Africa's role in world affairs, he said the two sides must act together to create a future defined not by power and dominance, but by partnership and dialogue. This marked his third address to a national Parliament in a week, during which he received a standing ovation and sustained applause from members of Namibian Parliament.

He also paid tributes to founding president of Namibia Sam Nujoma and the country's freedom fighters. "It was an Indian Lieutenant General, Dewan Prem Chand, who led the UN peacekeeping force in Namibia," he said.

https://www.tribuneindia.com/news/india/india-namibia-bolster-ties-sign-pacts-on-defence-critical-minerals/

*

Keel Laying of Third Fleet Support Ship for Indian Navy

Source: Press Information Bureau, Dt. 09 Jul 2025

'Keel Laying' ceremony of third Fleet Support Ships (FSS) was held at M/s L&T Shipyard, Kattupalli on 09 Jul 25, in the presence of VAdm Rajaram Swaminathan, Controller Warship Production & Acquisition and senior officials from the Indian Navy, HSL and M/s L&T.

Indian Navy had signed a contract with HSL for acquisition of Five Fleet Support Ships (FSS) in Aug 2023, with deliveries commencing mid-2027.

Showcasing the strength of public-private partnership, HSL has sub-contracted construction of two ships to M/s L&T Shipyard, Kattupalli to effectively utilise the country's shipbuilding capacity and meet stringent timelines for delivery.

On induction, the FSS will bolster the 'Blue Water' capabilities of the Indian Navy through replenishment of Fleet ships at sea. These ships, with a displacement of more than 40,000 tons will carry fuel, water, ammunition and stores that enable prolonged and sustained operations of the fleet at sea, thus enhancing its reach and mobility.

In their secondary role, the ships will be equipped for Humanitarian Aid and Disaster Relief (HADR) operations for evacuation of personnel and expeditious delivery of relief material during natural calamities.

The indigenously designed and built warship is equipped with equipment sourced through Indian OEMs.

This prestigious project will significantly boost the Indian Shipbuilding Industry and is a true champion of GoI initiatives such as Aatmanirbhar Bharat, Make in India and Make for the World.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2143499

*

पाक-चीन-बांग्लादेश की मिलीभगत भारत के लिए खतरा

Source: Jansatta, Dt. 10 Jul 2025

जनसत्ता ब्यूरो
नई दिल्ली, 9 जुलाई।

प्रमुख रक्षा अध्यक्ष जनरल अनिल चौहान ने कहा है कि अपने-अपने हितों को लेकर चीन, पाकिस्तान और बांग्लादेश की मिलीभगत भारत के लिए ठीक नहीं है। इससे भारत की स्थिरता एवं सुरक्षा पर गंभीर प्रभाव पड़ सकता है।

उन्होंने कहा कि हिंद महासागर क्षेत्र के देशों में आर्थिक संकट से 'बाहरी शक्तियों' को अपना प्रभाव बढ़ाने का मौका मिला है, जिससे भारत के लिए संकट पैदा हो सकता हैं। चीन, पाकिस्तान व बांग्लादेश के बीच हितों में संभावित समानता है जिसका भारत की स्थिरता एवं सुरक्षा पर प्रभाव पड़ सकता है। थिंक टैंक 'आब्जर्वर रिसर्च फाउंडेशन' द्वारा मंगलवार को आयोजित कार्यक्रम में अपने संबोधन में जनरल चौहान ने भारत और पाकिस्तान के बीच सात से 10 मई के दौरान हुए सैन्य टकराव का जिक्र किया। उन्होंने कहा कि संभवतः यह पहली बार है, जब दो परमाणु हथियार संपन्न देशों में सीधे तौर पर सैन्य टकराव हुआ। प्रमुख रक्षा अध्यक्ष ने चीन और पाकिस्तान की साठगांठ का जिक्र करते हुए कहा कि पाकिस्तान ने पिछले पांच वर्षों में अपने लगभग 70 से 80 फीसद हथियार और उपकरण चीन से हासिल किए हैं। चीनी सैन्य कंपनियों की पाकिस्तान में वाणिज्यिक देनदारियां हैं।

जनरल चौहान ने कहा कि हिंद महासागर क्षेत्र के देशों में आर्थिक संकट ने 'बाहरी शक्तियों' को अपना प्रभाव बढ़ाने का मौका दे दिया, जिससे भारत के लिए संकट पैदा हो सकता हैं। चीन, पाकिस्तान व बांग्लादेश के बीच हितों में संभावित समानता है जिसका भारत की स्थिरता एवं सुरक्षा पर प्रभाव पड़ सकता है। उनकी यह टिप्पणी ऐसे समय में आई है जब बांग्लादेश की अपदस्थ प्रधानमंत्री शेख हसीना के पिछले वर्ष अगस्त में ढाका से पलायन कर भारत में शरण लेने के बाद से दोनों देशों के बीच संबंधों में खटास आई है।

'आपरेशन सिंदूर' के विभिन्न पहलुओं के बारे में बात करते हुए सीडीएस ने कहा कि साइबर और विद्युत चुंबकीय क्षेत्रों जैसे युद्ध के नए क्षेत्रों को शामिल कर परंपरागत अभियानों में 'दायरे का और अधिक विस्तार' किया जा सकता है। जब भारत और पाकिस्तान के बीच चार दिनों तक सैन्य टकराव जारी रहा, तब उत्तरी सीमा पर चीन की ओर से कोई असामान्य गतिविधि नहीं हुई।

*

Science & Technology News

ISRO successfully conducts hot tests of Gaganyaan propulsion system

Source: The Tribune, Dt. 10 Jul 2025

ISRO has successfully conducted two hot tests of the Gaganyaan Service Module Propulsion System (SMPS) at the space agency's Propulsion Complex in Mahendragiri on July 3. The short-duration tests, lasting 30 seconds and 100 seconds respectively, were aimed at validating the test article configuration, ISRO said in a statement on Wednesday.

"The overall performance of the propulsion system during these hot tests was normal as per pre-test predictions. During the 100s test, simultaneous operation of all Reaction Control System (RCS) thrusters in different modes (steady state; pulsed) along with all Liquid Apogee Motor (LAM) engines was also successfully demonstrated."

"ISRO's Liquid Propulsion System Centre (LPSC) is leading the technology development activities for the Gaganyaan SMPS. SMPS is a critical system of Gaganyaan Orbital Module and is required during orbital maneuvering as well as specific abort scenarios," the space agency said.

It comprises five Liquid Apogee Motor (LAM) engines (each 440N thrust) and 16 Reaction Control System (RCS) thrusters (each 100N thrust). In order to simulate the propulsion system conditions closer to flight, the SMPS test article for these hot tests incorporated improvements based on experience gained from earlier hot tests.

"With the confidence gained through these hot tests, ISRO will conduct a full duration hot test shortly," the statement said.

According to ISRO, the Gaganyaan programme aims to demonstrate India's capability to launch a crewed spacecraft into low Earth orbit, and the experience and knowledge gained from this mission will be crucial for its success.

https://www.tribuneindia.com/news/india/isro-successfully-conducts-hot-tests-of-gaganyaan-propulsion-system/

*

Shubhanshu Shukla turns farmer in space; grows methi

Source: The Pioneer, Dt. 10 Jul 2025

In the final leg of his space sojourn, Indian astronaut Shubhanshu Shukla turned into a farmer, taking photos of 'moong' and 'methi' seeds sprouting in petri dishes and inserting them into a storage freezer on the International Space Station (ISS) as part of a study on how microgravity influences germination and early plant development.

Shukla and his fellow Axiom-4 astronauts have spent 12 days on the orbital lab and they are expected to return to Earth any day after July 10, depending on the weather conditions off the

Florida coast. NASA is yet to announce a date for the undocking of the Axiom-4 mission from the space station. The duration of the Axiom-4 mission docked to the ISS is up to 14 days.

During this time, the crew will conduct a variety of scientific experiments and engage in spacewalks to maintain the ISS. The Axiom-4 mission is part of a broader effort to expand commercial access to space.

Axiom Space, the private company behind the mission, aims to provide services such as research, training, and space tourism. NASA will provide further updates as the undocking date approaches.

“I am so proud that ISRO has been able to collaborate with national institutions all over the country and come up with some fantastic research which I am doing on the station for all the scientists and researchers. It is exciting and a joy to do this,” Shukla said in an interaction with Axiom Space Chief Scientist Lucie Low on Wednesday.

The sprouts experiment is led by two scientists - Ravikumar Hosamani of the University of Agricultural Sciences, Dharwad and Sudheer Siddapureddy of the Indian Institute of Technology, Dharwad. Once returned to Earth, the seeds will be cultivated over several generations to examine changes in their genetics, microbial ecosystems and nutritional profiles, a statement from Axiom Space said.

In another experiment, Shukla deployed and stowed microalgae, which are being investigated for their potential to produce food, oxygen and even biofuels. Their resilience and versatility make them ideal for supporting human life on long-duration missions.

Shukla also captured images for the crop seeds experiment, where six varieties will be grown over multiple generations post-mission. The goal is to identify plants with desirable traits for genetic analysis for sustainable farming in space. Shukla said his research tasks on the space station spanned various domains and disciplines.

“Right from doing stem cell research and looking at the effect of microgravity on seeds, evaluating the cognitive load on astronauts while they are interacting with screens onboard the station. It has been fantastic. I feel proud to be this kind of a bridge between the researchers and the station and do the research on behalf of them,” he said.

“One particular research I am really excited about is stem cell research where scientists are trying to explore whether it is possible to accelerate recovery or growth or repair injury by adding supplements to stem cells. It has been great to work in the Glove Box doing this research for them. I am really excited to be doing this,” Shukla said.

https://www.dailypioneer.com/2025/india/shubhanshu-shukla-turns-farmer-in-space--grows-methi.html

*

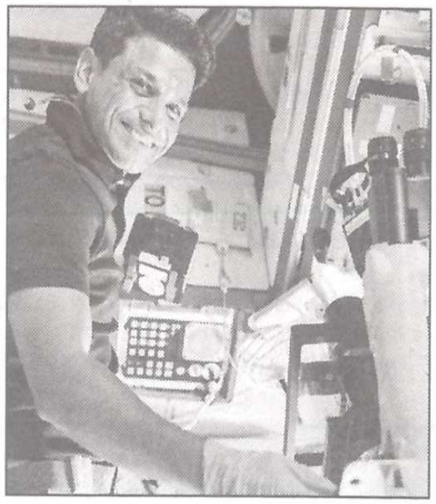
शुभांशु शुक्ला अंतरिक्ष में बने किसान, मेथी और मूंग उगाई

Source: Jansatta, Dt. 10 Jul 2025

जनसत्ता ब्यूरो
नई दिल्ली, 9 जुलाई।

भारतीय अंतरिक्ष यात्री शुभांशु शुक्ला अपने अंतरिक्ष प्रवास के अंतिम चरण में एक किसान की भूमिका में नजर आ रहे हैं। उन्होंने 'पेट्री डिश' में मूंग और मेथी उगाई, इसे अंतरराष्ट्रीय अंतरिक्ष केंद्र (आइएसएस) के फ्रीजर में रखा एवं इनकी तस्वीर साझा की।

शुक्ला ने यह कार्य एक अध्ययन के तहत किया है ताकि पता लगाया जा सके कि सूक्ष्म गुरुत्वाकर्षण अंकुरण और पौधों के प्रारंभिक विकास को कैसे प्रभावित करता है। एक्सिओम-4 यान से अंतरराष्ट्रीय अंतरिक्ष केंद्र पहुंचे शुक्ला और उनके साथी कक्षीय प्रयोगशाला में 12 दिन बिता चुके हैं। उनके फ्लोरिडा तट पर मौसम की स्थिति के आधार पर, 10 जुलाई के बाद किसी भी दिन पृथ्वी पर लौटने की उम्मीद है। अमेरिकी अंतरिक्ष एजंसी नासा ने अब तक आइएसएस से एक्सिओम-4 यान के अलग होने की तारीख की घोषणा नहीं की है। आइएसएस पहुंचे एक्सिओम-4 मिशन की अवधि 14 दिनों तक है। शुक्ला ने बुधवार को एक्सिओम स्पेस की मुख्य वैज्ञानिक लूसी लो के साथ बातचीत में कहा कि मुझे बहुत गर्व है कि इसरो (भारतीय अंतरिक्ष अनुसंधान संगठन) देश भर के राष्ट्रीय संस्थानों के साथ सहयोग करने और कुछ शानदार शोध करने में सक्षम रहा है, जो मैं सभी वैज्ञानिकों और शोधकर्ताओं के लिए आइएसएस पर कर रहा हूं। ऐसा करना रोमांचक और आनंददायक है।



मेथी और मूंग के बीज को अंकुरित करने के प्रयोग का नेतृत्व दो वैज्ञानिकों कर्नाटक के धारवाड़ स्थित कृषि विज्ञान विश्वविद्यालय में कार्यरत रविकुमार होसामणि और यहीं स्थित भारतीय प्रौद्योगिकी संस्थान के सुधीर सिद्धपुरेड्डी कर रहे हैं। एक्सिओम स्पेस की ओर से जारी एक बयान में कहा गया है कि एक बार पृथ्वी पर वापस आने के बाद, बीजों को कई पीढ़ियों तक उगाया जाएगा, ताकि उनके आनुवंशिकी, सूक्ष्मजीवी पारिस्थितिकी तंत्र और पोषण प्रोफाइल में होने वाले बदलावों का पता लगाया जा सके। एक अन्य प्रयोग के तहत शुक्ला सूक्ष्म शैवाल ले गए हैं, जिनकी भोजन, आक्सीजन और यहां तक कि जैव ईंधन उत्पन्न करने की क्षमता की जांच की जा रही है। सूक्ष्म शैवालों के किसी भी परिस्थिति में ढल जाने की क्षमता उन्हें लंबी अवधि के मिशनों में मानव जीवन की मदद के लिए आदर्श बनाती है।

शुक्ला ने बीजों के उगाने के प्रयोग की भी तस्वीरें लीं। इसके तहत मिशन के बाद भी कई पीढ़ियों तक छह किस्में उगाई जाएंगी। इसका लक्ष्य अंतरिक्ष में टिकाऊ खेती के लिए आनुवंशिक विश्लेषण हेतु वांछनीय गुणों वाले पौधों की पहचान करना है। शुक्ला ने कहा कि अंतरिक्ष केंद्र पर उनके अनुसंधान कार्य विभिन्न क्षेत्रों और विषयों में फैले हुए हैं।

एक्सिओम की ओर से जारी बयान में कहा गया है कि एक बार पृथ्वी पर वापस आने के बाद, बीजों को कई पीढ़ियों तक उगाया जाएगा, ताकि उनके आनुवंशिकी, सूक्ष्मजीवी पारिस्थितिकी तंत्र और पोषण प्रोफाइल में होने वाले बदलावों का पता लगाया जा सके।

भारतीय अंतरिक्ष यात्री शुभांशु शुक्ला ने कहा कि मुझे अनुसंधानकर्ताओं और केंद्र के बीच इस तरह का सेतु बनने और उनकी ओर से अनुसंधान करने पर गर्व है।

*

Research needs more funds, less red tape

Source: The Tribune, Dt. 10 Jul 2025

LAST week, the government approved a new Research, Development and Innovation (RDI) scheme with a corpus of Rs 1 lakh crore to boost private sector investment in innovation and commercial R&D in deep tech areas like artificial intelligence (AI). The fund will be meant for long-term financing or refinancing at low interest rates. The finance will be in the form of growth and risk capital for private companies willing to scale up R&D and technology development in strategic areas to serve the national objective of self-reliance. Projects that show a high 'Technology Readiness Level' will be funded, besides those involving the acquisition of technologies of critical or strategic importance.

The need for a new fund was felt because of the poor share of the private sector in R&D for a long time, and overall low investment in R&D. A globally accepted parameter of national commitment to research and innovation is the gross expenditure on R&D or GERD. India's GERD has been abysmally low at 0.64 per cent. The figure has been stagnating and, in fact, has shown a decline from 0.66 per cent in 2019-20. However, it is a matter of consolation that the R&D kitty is going up in absolute terms with the rise in GDP.

Globally, India fares poorly in R&D expenditure. The US leads global R&D spending with nearly $784 billion in 2023, followed by China at $723 billion. Japan is a distant third ($184 billion), followed by Germany ($132 billion), South Korea ($121 billion), the UK ($88 billion) and India ($71 billion), according to data compiled by the World Intellectual Property Organisation.

It has been seen that the private sector drives the R&D expenditure in countries with high figures, including China. In India, however, GERD is mainly driven by the government sector, with the private sector contributing only 36.4 per cent of the total R&D expenditure.

This is not the first time that an initiative has been announced to de-risk private sector investment in high-technology areas. In fact, two poster success stories of the globalisation era – the software revolution and the biotechnology revolution — were seed-funded through state-led schemes. The innovative idea of a Software Technology Park (STP) provided the much-needed help to entrepreneurial software firms in the form of shared satellite data-link facilities, affordable office space and massive tax breaks. Many of these entrepreneurial firms are today's multi-billion-dollar behemoths and have diversified into outsourced R&D and product development. The software sector's contribution to India's GDP is about 8 per cent.

In the same way, the first two biotechnology and vaccine companies — Shanta Biotechnics and Bharat Biotech — were generously funded by the Technology Development Board (TDB) established in the Department of Science and Technology (DST). They, in turn, flourished and made Hyderabad India's vaccine capital. The TDB's contribution to the vaccine industry has been tremendous — the quantum of grants given to private companies has been to the tune of Rs 100 crore in some cases. Later, the Department of Scientific and Industrial Research launched the New Millennium

> We need to boost research in academia to make it attractive for industry collaboration and joint product development.

Indian Technology Leadership Initiative, and the Department of Biotechnology came up with the Biotechnology Industry Research Assistance Council.

It would be wise to build upon the experience gained so far in getting the private sector interested in R&D, and avoid the pitfalls of such schemes. First and foremost, the private sector is always wary of red tape in the execution of such schemes. Therefore, the governance of any such scheme should be nimble. The STP scheme resulted in the exponential growth of the software sector because software parks were governed autonomously and had the participation of the private sector in their administration. The TDB, too, has a lean structure.

In comparison, the new RDI scheme appears to be a governance nightmare. At the top will be the Governing Board of the Anusandhan National Research Foundation (ANRF), chaired by the Prime Minister, to provide 'strategic direction' to the scheme. The Executive Council of the ANRF will approve the guidelines and recommend the scope and type of projects to be funded. Then there will be an Empowered Group of Secretaries chaired by the Cabinet Secretary to decide sectors and types of projects, and conduct performance review. At the bottom of this bureaucratic pyramid would be the DST to implement the scheme. Funding will flow through a two-tiered structure — a Special Purpose Fund (SPF) within the ANRF and several second-level fund managers.

Such a long red tape apart, the RDI amounts to massive duplication of efforts. It is puzzling that the RDI has been formulated when there is a very similar initiative already in place — Deep Tech Fund of Funds with a promised Rs 10,000 crore. The fund is supposed to invest in early development stages of businesses in high-risk fields like AI, biotechnology and quantum computing with a view to achieving self-reliance.

Perhaps aware of this overlap, the government has decided to allow the RDI to contribute money to the Deep Tech Fund of Funds. If one fund funds another, what purpose will it serve? It is also unclear how the RDI scheme will interface with other schemes — National Quantum Mission, AI Mission, National BioPharma Mission, National Green Hydrogen Mission, etc., all aimed at boosting technology development in emerging areas.

If we want the private sector to take up technology development, there is no running away from the basic tenet of collaboration with academia. Research institutions are hubs of fundamental and applied research. Collaborating with them can provide companies early access to breakthrough ideas and technologies as well as a steady pool of trained researchers, engineers and PhD holders who understand emerging technologies. By collaborating from the research stage, companies can shorten the product development cycles. For this, we need to boost research in academia to make it attractive for industry collaboration and joint product development. This is how countries leading in AI, quantum technology, advanced materials, etc. have done it.

*

The Tribune
The Statesman
पंजाब केसरी जनसत्ता
The Hindu
The Economic Times
Press Information Bureau
The Indian Express
The Times of India
Hindustan Times
नवभारत टाइम्स
दैनिक जागरण
The Asian Age
The Pioneer

© The news items are selected by Defence Science Library, DESIDOC from subscribed National Print Newspapers (mainly on DRDO, Defence and Science & Tech).