

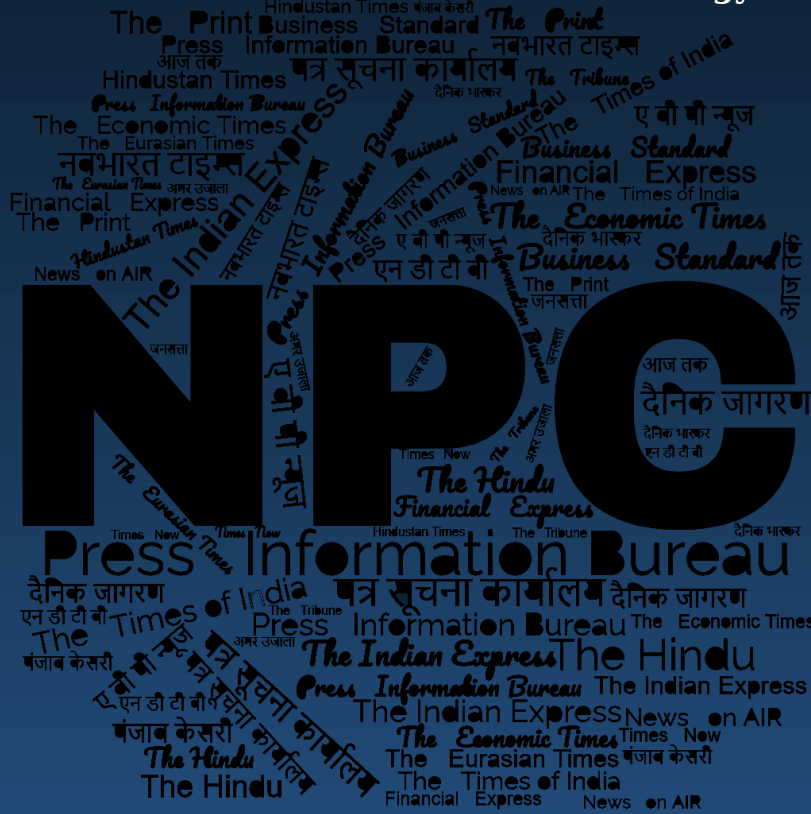
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समाचार पत्रों से चयित अंश Newspapers Clippings

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Press Information Bureau
Government of India

Ministry of Defence

Mon, 22 Apr 2024

AFMS & IIT Delhi Ink MoU for Collaborative Research & Training

Armed Forces Medical Services (AFMS) signed a Memorandum of Understanding (MoU) for collaborative research and training with Indian Institute of Technology (IIT) Delhi on 22 April 2024. The MoU was signed by Director General Armed Forces Medical Services Lt Gen Daljit Singh and Director IIT Delhi Prof Rangan Banerjee. The scope of this MoU includes undertaking research and innovation to develop novel medical devices and focus on solving health issues specific to serving soldiers in varied terrains.

IIT Delhi has a robust biomedical research ecosystem which is ideal for providing the technical expertise required for research into the diverse medical challenges faced in the Armed Forces, including rehabilitation of amputees. Under the ambit of this MoU, faculty exchange program, joint academic activities and development of joint PhD programmes will also be planned.

On this occasion, DGAFMS Lt Gen Daljit Singh informed that AFMS is dedicated to provide highest level of medical care to soldiers and collaboration with institutes of national importance like IIT is a significant step towards this commitment. Director IIT Delhi Prof Rangan Banerjee commented that this MoU is full of possibilities for research and training beneficial to the nation and the Armed Forces.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2018465>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 22 Apr 2024

INSV Tarini Returns Triumphant after Historic Transoceanic Expedition by Indian Navy's Women Officers

The Indian Naval Sailing Vessel (INSV) Tarini has returned triumphant to her base port at Goa on 21 Apr 24 after a historic transoceanic expedition of nearly two months duration.

The expedition was undertaken in double-handed mode by Lt Cdr Dilna K and Lt Cdr Roopa A, women officers of the Indian Navy. Their exceptional journey marks a historic milestone as they become the first from India to accomplish such a feat.

The expedition was Flagged off from Goa by renowned circumnavigator and their mentor Cdr Abhilash Tomy (Retd) on 28 Feb 24. After 22 days of navigating through the unpredictable elements of the Indian Ocean, INSV Tarini arrived at Port Louis, Mauritius, on 21 Mar 24. This historic moment was celebrated with a series of events where the officers had the privilege of interacting with government officials from the Mauritius Coast Guard and the Indian High Commission. In a gesture of camaraderie and collaboration, the vessel also undertook a training sortie with personnel from the Mauritius Coast Guard embarked, strengthening bilateral ties and fostering goodwill between the two maritime nations.

Following a hectic schedule at Port Louis, Lt Cdr Dilna K and Lt Cdr Roopa the officers prepared to embark on their return journey to Goa. Departing on 30 Mar 24, the officers faced continuous challenges posed by heavy winds, adverse sea states, and rough seas. Their indomitable spirit and steadfast resolve propelled them forward, guiding INSV Tarini safely back to Goa on 21 Apr 24.

Their accomplishments underscore the Indian Navy's commitment to promoting gender equality and empowering women in the maritime domain. Undeterred by the challenges encountered during their expedition, the officers demonstrated exceptional seamanship and resilience, embodying the spirit of adventure and exploration.

The two officers now prepare for their next monumental voyage, a circumnavigation of the globe (Sagar Parikrama - IV expedition) on INSV Tarini scheduled to commence in Sep this year.

This remarkable achievement will not only inspire but also pave way for future generations of personnel especially women in the Indian Navy to volunteer for challenging maritime adventure activities.

INSV Tarini was flagged in by Commanding Officer INS Mandovi and Naval Station Commander North Goa at the boat pool of INS Mandovi, in presence of naval personnel and families of Station Mandovi, symbolizing the collective achievement and camaraderie within the Indian Navy.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2018460>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 22 Apr 2024

Raksha Mantri Shri Rajnath Singh Visits Siachen, the World's Highest Battlefield; Carries out On-the-Ground Assessment of the Security Situation

**Commends soldiers for protecting the nation with valour & determination in extreme
weather & tough terrain**

**“Acts of bravery & iron-clad will of our soldiers in the icy Siachen glacier will always inspire
future generations”**

Raksha Mantri Shri Rajnath Singh, on April 22, 2024, visited Siachen, the world's highest battlefield, to carry out a first-hand assessment of the security situation. He also interacted with the

soldiers deployed in the extreme weather & tough terrain conditions. The Raksha Mantri was accompanied by Chief of the Army Staff General Manoj Pande; General Officer Commanding-in-Chief, Northern Command Lieutenant General MV Suchindra Kumar; and General Officer Commanding, 14 Corps Lieutenant General Rashim Bali.

Post the aerial reconnaissance, the Raksha Mantri landed at a forward post at an altitude of 15,100 feet, and was given a detailed brief on the operational readiness in the Siachen Glacier & the prevalent security situation. He also discussed the aspects associated with the operational challenges with the Commanders on ground.

Addressing the soldiers, Shri Rajnath Singh lauded them for walking on the virtuous path of protecting the motherland with valour and determination in extreme conditions. He emphasised that the nation will remain forever indebted to the Armed Forces personnel, as due to their sacrifices, every citizen feels safe. “We are leading a peaceful life as we have an assurance that our brave soldiers stand steadfast at the borders. In the times to come, when the history of national security is written, the acts of bravery & iron-clad will of our soldiers in the icy cold glacier will be remembered with pride. It will forever be an inspiration for future generations,” he said.

The Raksha Mantri described Siachen as not an ordinary land, but a symbol of India’s sovereignty and determination. He stated that just as Delhi is India’s national capital, Mumbai is the financial capital and Bengaluru is the technology capital; Siachen is the capital of courage, grit & determination.

The nation recently celebrated the 40th anniversary of the success of Operation Meghdoot. Shri Rajnath Singh termed the operation, which was launched by the Indian Army in Siachen on April 13, 1984, as a golden chapter of the country’s military history. “The success of Operation Meghdoot is a matter of pride for all of us,” he said.

On the occasion, the Raksha Mantri also laid a wreath at the Siachen War Memorial, as a mark of solemn tribute to the bravehearts who have made the supreme sacrifice in service of the Motherland.

It may be recalled that Shri Rajnath Singh visited Leh on March 24, 2024 and celebrated Holi with the troops. He was scheduled to visit Siachen, but it was postponed due to adverse weather conditions. From Leh, the Raksha Mantri had spoken with the soldiers posted in Siachen over phone and told them that he will soon visit the world’s highest battlefield & interact with them. Thus with today’s visit, Shri Rajnath Singh fulfilled his promise despite his busy schedule.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2018433>

ThePrint

Mon, 22 Apr 2024

Navy Conducts XPOL 2024 for Greater Maritime Security, more Preparedness

The Indian Navy conducted the XPOL 2024 exercise to validate the procedures for ensuring the readiness of the Navy to meet the maritime security challenges in the region, a PIB press release stated.

The exercise was conducted in multiple phases, including combat training in a realistic scenario during the Tactical Phase and successful conduct of various firings during the Weapon Phase.

The exercise aimed to assess the Indian Navy's ability to deliver ordnance on target and reaffirmed its capability to enhance maritime domain awareness in a realistic scenario. It also witnessed participation from IAF, Andaman & Nicobar Command, and Coast Guard, indicating the high degree of interoperability among the services.

The successful conclusion of the XPOL 2024 exercise will help in enhancing the readiness of the Indian Navy to respond effectively to the maritime challenges in the region. It also reaffirms the Navy's resolve to meet the growing security challenges in the maritime domain.

<https://theprint.in/defence/navy-conducts-xpol-2024-for-greater-maritime-security-more-preparedness/2052155/>

ThePrint

Mon, 22 Apr 2024

CDS Anil Chauhan Departs for France to Strengthen Bilateral Defence Ties

Chief of Defence Staff (CDS) General Anil Chauhan Sunday departed for France on an official visit. The visit is aimed at strengthening the bilateral defense ties between the two countries.

During his visit, General Anil Chauhan is scheduled to meet with the senior civil and military leadership of France.

He will also visit the French Space Command, and the Land Forces Command, and interact with student officers of the Army and Joint Staff Course at Ecole Militaire (School of Military).

The CDS will also pay a visit to a few renowned defense companies in France such as Safran Group, Naval Group, and Dassault Aviation.

As part of his visit, General Anil Chauhan will also lay a wreath at the Neuve Chapelle Memorial and the Indian Memorial at Villers-Guislain to honour the brave Indian soldiers who fought and died during the First World War.

<https://theprint.in/defence/cds-anil-chauhan-departs-for-france-to-strengthen-bilateral-defence-ties/2051325/>

mint

Mon, 22 Apr 2024

India-EU to Hold Security and Defence Consultations in early May

India and the European Union are expected to hold their bilateral security and defence consultations in New Delhi in early May, with new dialogue on space security and boosting defence industry collaboration. according to persons aware of the matter.

During the first talks in 2022, the two sides discussed security matters relating to the Indo-Pacific, Europe and India's neighbourhood.

“During the consultations, the two sides also discussed various means of increasing India-EU cooperation on maritime security, implementation of the European code of conduct on arms export to India's neighborhood, cooperation in co-development and co-production of defence equipment including India's participation in PESCO," India's mission in Brussels said in 2022.

PESCO refers to the EU's Permanent Economic and Security Cooperation Organization, which was launched in 2017. The body was set up to boost planning and cooperation between EU member states to improve the continent's military and security capabilities.

Since Russia's invasion of Ukraine in 2022, the European Union has placed more emphasis on the continent's lack of preparedness for a security crisis. Cooperation with India's defence industry, which has close defence ties with major EU powers like France, could be an area of interest for both sides.

Growing cooperation

Over the last few years, the EU's security cooperation with India has increased considerably. In 2020, the EU and India released a joint roadmap to 2025, which focused on strengthening military to military relations and cooperation on counter-piracy, peacekeeping, nuclear proliferation and disarmament. The two sides have launched dialogues on maritime security and defence in addition to existing forums on cyber security and counter-terrorism. The EU also appointed a defence attache to its mission in New Delhi in November 2023.

In October 2023, India and the EU held their first joint naval exercises in the Gulf of Guinea.

The 27-nation alliance has also started a series of initiatives to strengthen security cooperation with nations in the Indo-Pacific region. The goal of the EU's CRIMARIO initiative is to give Indo-Pacific nations better maritime domain awareness capabilities.

The Enhancing Security in and with Asia (ESIWA) program, sponsored by the EU, strengthens collaboration in the areas of cyber security, maritime security, and counterterrorism. India and the EU collaborate on the initiative.

“You are likely to see an increase in the EU's security and defence cooperation with India and greater engagement across the Indo-Pacific," EU Special Envoy for the Indo-Pacific Richard Tibbels told Mint in an earlier interview. This includes cooperation on space security

“Cooperation on space security issues should also certainly be explored between India and the EU as we both have high stakes in the space domain," he added.

<https://www.livemint.com/news/india/indiaeu-to-hold-security-and-defence-consultations-in-early-may-11713775359700.html>



Mon, 22 Apr 2024

Global Defence Budget: How much India, Pakistan and China Spend on Military? Top 10 List

Global military spending reached \$2,443 billion in 2023, marking a significant 6.8 per cent increase from the previous year and the most significant year-on-year rise since 2009, according to new data from the Stockholm International Peace Research Institute (SIPRI). The average military spending per person was the highest since 1990, at \$306.

The surge in military spending can be attributed largely to the ongoing conflict in Ukraine and rising tensions in regions like Asia, Oceania and the Middle East, the report said.

SIPRI report on global military spending | Key points

- In 2023, total military expenditure accounted for 2.3 per cent of the global gross domestic product (GDP), reflecting the significant financial resources allocated to defence worldwide.
- The world's five largest military spenders in 2023 were the United States, China, Russia, India, and Saudi Arabia, collectively constituting 61 per cent of global military spending.
- Russia's military spending surged by 24 per cent in 2023, reaching an estimated \$109 billion, equivalent to 5.9 per cent of Russia's GDP.
- Ukraine emerged as the eighth largest military spender in 2023, increasing its defence expenditure by 51 per cent to \$64.8 billion, accounting for 37 per cent of its GDP.
- Military expenditure by NATO member states totalled \$1341 billion in 2023, representing 55 per cent of global spending. Eleven NATO members met the alliance's 2 per cent of GDP military spending target in 2023, an increase of four from the previous year.

Top 10 countries with highest military spending in 2023

1. United States: \$916 billion
2. China: \$296 billion (estimated)
3. Russia: \$109 billion (estimated)
4. India: \$83.6 billion
5. Saudi Arabia: \$ 75.8 billion (estimated)
6. United Kingdom: \$74.9 billion
7. Germany: \$66.8 billion
8. Ukraine: \$64.8 billion
9. France: \$61.3 billion
10. Japan: \$50.32 billion

'India spent the highest ever on procuring Made-In-India arms'

- India ranked fourth globally in military expenditure in 2023, totalling \$83.6 billion, marking a 4.2 per cent increase from 2022 and a substantial 44 per cent rise from 2014.
- The surge in India's military spending was primarily due to escalating personnel and operations costs, comprising nearly 80 per cent of the total military budget for 2023, the report said.
- According to the report, this increase aligns with the government's focus on enhancing the operational readiness of the armed forces, particularly amidst ongoing tensions with neighbouring countries like China and Pakistan.

During the same period, Pakistan's military spending dropped to \$8.5 billion in 2023, a decrease of \$13 billion, relegating it to the 30th position globally. However, China's military expenditure grew by \$6 billion, allowing it to retain its second position.

- Despite the rise in overall spending, capital outlays for military procurement remained relatively consistent, accounting for around 22 per cent of the budget in 2023, the report added.

• Notably, a significant portion of these procurement funds, approximately 75 per cent, was allocated to domestically produced equipment, marking the highest level ever recorded and a notable increase from the previous year.

<https://www.hindustantimes.com/world-news/global-defence-budget-how-much-india-pakistan-and-china-spend-on-military-top-10-list-101713785722168.html>

नवभारत टाइम्स

Mon, 22 Apr 2024

चीन ने हथियारों के लिए खोल दिया खजाना, लगातार 29 वें साल बढ़ाया सैन्य बजट, भारत को कितना बड़ा खतरा?

दुनियाभर के देशों में रक्षा बजट में वृद्धि और हथियारों खरीद की होड़ बढ़ी है। स्वीडन के शोध संस्थान स्टॉकहोम इंटरनेशनल पीस रिसर्च इंस्टीट्यूट (एसआईपीआरआई) ने साल 2023 के विभिन्न देशों के रक्षा बजट पर रिपोर्ट जारी की है। रिपोर्ट कहती है कि दुनिया में सेना पर खर्च के मामले में दुनिया के दूसरे नंबर के देश चीन का 2023 में रक्षा बजट 296 बिलियन डॉलर का रहा है। इससे पिछले साल यानी 2022 के मुकाबले चीन ने सैन्य खर्च में छह प्रतिशत की वृद्धि की है। यह चीन के सैन्य खर्च में साल-दर-साल लगातार 29 वीं बढ़ोतरी थी। यानी बीते 29 साल से चीन अपनी सेना पर खर्च लगातार बढ़ा रहा है। बीते साल एशिया और ओशिनिया क्षेत्र में कुल सैन्य खर्च का आधा हिस्सा चीन का था।

भारत समेत चीन के कई पड़ोसियों ने भी अपने सैन्य खर्च में बढ़ोतरी की है। सैन्य खर्च बढ़ाने में कुछ पड़ोसी चीन से आगे हैं लेकिन भारत की वृद्धि चीन से कम है। रिपोर्ट के मुताबिक, भारत ने 2022 के मुकाबले 2023 में 4.2 प्रतिशत की बढ़ोतरी की। भारत का सैन्य खर्च 83.6 बिलियन डॉलर का रहा है। जापान और ताइवान के सैन्य खर्च में 2023 में 11 फीसदी की बढ़ोतरी हुई है। वहीं साउथ कोरिया का सैन्य खर्च 2023 में 1.1 फीसदी ही है। चीन के सैन्य खर्च में बढ़ोतरी भारत के लिए भी चिंता का सबब है क्योंकि चीन की विस्तारवादी नीति लगातार पड़ोसी देशों के साथ तनाव की वजह बनती रही है।

2009 के बाद सबसे तेज बढ़ोतरी

एसआईपीआरआई की रिपोर्ट कहती है कि विश्व सैन्य व्यय 2023 में लगातार नौवें वर्ष बढ़कर कुल 2443 बिलियन डॉलर तक पहुंच गया है। 2023 में सैन्य खर्च में 6.8 प्रतिशत की वृद्धि हुई जो 2009 के बाद से साल-दर-साल सबसे तेज वृद्धि थी। इसने वैश्विक सैन्य खर्च को अब तक के उच्चतम स्तर पर पहुंचा दिया। अमेरिका ने 2023 में 916 बिलियन डॉलर का सैन्य खर्च किया है, जो सबसे ज्यादा है। अमेरिका के बाद चीन है। अमेरिका और चीन के बाद 2023 में सबसे ज्यादा सैन्य खर्च करने वाले देशों में तीसरे नंबर पर रूस चौथे नंबर पर भारत और पांचवे स्थान पर सऊदी अरब है।

2023 में वैश्विक सैन्य खर्च में वृद्धि को मुख्य रूप से यूक्रेन में चल रहे युद्ध और एशिया और ओशिनिया और पश्चिम एशिया में बढ़ते भू-राजनीतिक तनाव के लिए जिम्मेदार ठहराया जा सकता है। सभी पांच भौगोलिक क्षेत्रों में सैन्य खर्च बढ़ा है। यूरोप, एशिया और ओशिनिया और पश्चिम एशिया में खर्च में बड़ी वृद्धि दर्ज की गई है।

<https://navbharattimes.indiatimes.com/world/china/china-allocated-296-billion-to-military-in-2023-increase-six-percent-from-2022-india-budget-83-billion/articleshow/109498564.cms>

Biden will Send Air Defence Weapons, Artillery after Approval: Zelenskyy

President Joe Biden told Ukrainian President Volodymyr Zelenskyy on Monday the US will send badly needed air defence weaponry once the Senate approves a massive national security aid package that includes \$61 billion for Ukraine.

Zelensky said in a posting on X that Biden also assured him that a coming package of aid would also include long-range and artillery capabilities. Ukraine is awaiting US Senate approval after the House this weekend approved the \$95 billion package that also includes aid for other allies.

It comes after months of delay as some Republican lawmakers opposed further funding for Ukraine and threatened to oust Speaker Mike Johnson, R-La., if he allowed a vote to take place.

Kyiv badly needs new firepower as Moscow has stepped up its attacks against an outgunned Ukraine. The Senate is expected to vote on the package this week, and Biden has promised to quickly sign it into law.

Zelenskyy said he and Biden also discussed Russia's air terror using thousands of missiles, drones and bombs including a strike on the Kharkiv TV tower just minutes before they spoke.

Russia clearly signals its intention to make the city uninhabitable, Zelenskyy said

Russia has exploited air defence shortages in Kharkiv, Ukraine's second-largest city, to pummel the region's energy infrastructure and harm its 1.3 million residents. Some officials and analysts warn it could be a concerted effort by Moscow to shape conditions for a summer offensive to seize the city.

The White House in a statement confirmed that Biden told Zelenskyy that his administration will quickly provide significant new security assistance packages to meet Ukraine's urgent battlefield and air defense needs as soon as the Senate passes the national security supplemental and he signs it into law."

President Biden also underscored that the US economic assistance will help maintain financial stability, build back critical infrastructure following Russian attacks, and support reform as Ukraine moves forward on the path of Euro-Atlantic integration, according to the White House.

Meanwhile, a bipartisan delegation of US Congress members on Monday met with Zelenskyy in Kyiv. The delegation included Reps. Tom Kean Jr., R-N.J., Nathaniel Moran, R-Texas, Bill Keating, D-Mass., and Madeleine Deane, D-Pa.

Kean told reporters we know that the needs of Ukraine are urgent and US aid is crucial to stem the tide of Russia's assaults. Kean said Biden should use the authority in the bill to quickly deliver to Ukraine the weapons that it has requested, including the longer-range Army Tactical Missile System, known as ATACMS.

Zelenskyy said that he discussed with the US lawmakers Ukraine's need for artillery shells, long-range missiles, electronic warfare equipment, unmanned aerial vehicles, combat aviation and support in developing the Ukrainian defence industry. They also discussed Ukraine's bid to eventually join NATO, US participation in an international conference in Switzerland in June aimed at charting a path toward peace in Ukraine, and other issues.

https://www.business-standard.com/world-news/biden-will-send-air-defence-weapons-artillery-after-approval-zelenskyy-124042300108_1.html

The Tribune

Tue, 23 Apr 2024

China's Military Tech under Lens after Poor Show in Conflicts; Exports Dip

Chinese military technology has come under the scanner, especially over its ineffectiveness during the Russia-Ukraine and Israel-Iran conflicts.

Important technologies of UAVs and missiles Iran used in the April 13 offensive against Israel had Chinese parentage. Almost 99 per cent of the 300 missiles and drones were shot down by Israel with support from US and UK.

From Beijing's perspective, its military technology has actually been used in a real war scenario. However, the ineffectiveness of Iran's attack would be watched by several countries planning to buy weapons and military technologies from China.

The Sweden-based think tank Stockholm International Peace Research Institute (SIPRI), in its March 10 report, indicated that China's military exports are dipping.

Sources said to bypass western sanctions, China has resorted to approaching North Korea, which is anyway sanctioned by the West, to route sensitive technologies and weapons to Iran and Russia. China supplied Iran 150-km CSS-8 missiles and is now helping it in the production of anti-ship cruise missiles. Iran is reportedly developing a new 1,500-km missile, 'Zelzal-3', based on Chinese technology. The SIPRI report said, "The five largest exporters of arms during the period 2019-2023 were the USA, France, Russia, China and Germany. They accounted for 75 per cent of all arms exports. While the US and French arms exports rose, those from Russia, China and Germany fell," the report said.

China accounted for 5.8 per cent of total global arms exports in 2019-23. "Its arms exports decreased by 5.3 per cent between two five years' blocks — 2014-18 and 2019-23," the report stated. A whopping 61 per cent of Chinese arms exports went to Pakistan. Bangladesh, Thailand and Myanmar are other buyers.

China supplied 19 per cent of arms to Sub-Saharan African countries, but the 2019-2023 period saw Chinese exports coming down by 23 per cent.

Pakistan has complained about engines and radars on board warships supplied by China. Pakistan faces problems with made-in-China fighter jets too. Bangladesh, Myanmar, Algeria, Kenya and Nigeria also faced issues with Chinese weapons.

Meanwhile, on April 19, the Foreign Ministers of the Group of Seven (G7) countries at a meeting in Italy expressed "strong concern" over the transfer of material and weapon components from Chinese businesses to Russia for its military offensive in Ukraine.

<https://www.tribuneindia.com/news/india/chinas-military-tech-under-lens-after-poor-show-in-conflicts-exports-dip-613540>

North Korea Launches 'Several' Ballistic Missiles towards East Coast

South Korea's military reported that North Korea launched "several" ballistic missiles towards the sea off its east coast on Monday. Japanese authorities, including the government and coast guard, also confirmed the launch, noting that the projectiles appeared to be ballistic missiles and landed outside Japan's exclusive economic zone.

According to Japan's NTV broadcaster, the launched projectile was identified as a short-range ballistic missile, as stated by a Japanese government official. South Korea's Joint Chiefs of Staff indicated that the launches likely involved several short-range ballistic missiles launched from an area near Pyongyang, the North Korean capital, but did not offer further specifics.

The missile launches occurred amidst discussions between South Korea's top military officer, Admiral Kim Myung-soo, and General Stephen Whiting, the commander of US Space Command, regarding North Korea's satellite development and its increasing military collaboration with Moscow. This cooperation has raised concerns, especially after suspicions emerged that North Korea might have supplied arms to Russia for its involvement in the Ukraine conflict, although both countries deny these allegations.

Recent activities suggest North Korea's continued missile development efforts. The country recently announced the test-firing of a strategic cruise missile and a new anti-aircraft missile. Additionally, in April, North Korea tested a new hypersonic missile as part of its ongoing efforts to develop solid-fueled missiles across its arsenal.

Despite United Nations Security Council resolutions prohibiting North Korea from developing ballistic missiles, the regime has persistently pursued such capabilities, asserting its sovereign right to self-defense.

<https://timesofindia.indiatimes.com/world/rest-of-world/north-korea-launches-several-ballistic-missiles-towards-east-coast/articleshow/109496221.cms>

Science & Technology News

Glaciers Melting at Unprecedented Rates in Indian Himalayan Region: ISRO

The Himalayan mountains, often called the "Third Pole" due to their vast glaciers and snow cover, are highly vulnerable to global climate change impacts both physically and societally. Isro Monday said that new research analysing decades of satellite imagery has revealed that glaciers across the

Indian Himalayan region have been melting at alarming rates, leading to the significant expansion of glacial lakes.

Research conducted worldwide has consistently shown that glaciers across the globe have been experiencing unprecedented rates of retreat and thinning since the onset of the industrial revolution in the 18th century.

“...This retreat leads to the formation of new lakes and the enlargement of existing ones in the Himalayan region. These bodies of water, created by the melting of glaciers, are known as glacial lakes and play a crucial role as freshwater sources for rivers in the Himalayan region. However, they also pose significant risks, such as Glacial Lake Outburst Floods (GLOFs), which can have devastating consequences for communities downstream,” Isro said in a statement on Monday.

For the research, Isro used satellite data from 1984 to 2023, which shows that of the 2,431 glacial lakes larger than 10 hectares identified in 2016-17 across river basins, a staggering 676 lakes have grown markedly since 1984. This includes 130 lakes within India — 65 in the Indus basin, seven in the Ganga basin, and 58 in the Brahmaputra basin.

The changes have been drastic, with 601 of the expanding lakes more than doubling in size. Ten lakes grew 1.5 to 2 times larger, while 65 expanded 1.5 times. The analysis found many of the bulging lakes at higher elevations, with 314 between 4,000-5,000 metres and 296 above 5,000 metres.

The glacial lakes are categorised based on their formation process into four broad categories, namely Moraine-dammed (water dammed by moraine), Ice-dammed (water dammed by ice), Erosion (water dammed in depressions formed by erosion), and other glacial lakes.

“Among the 676 expanding lakes, the majority of them are Moraine-dammed (307) followed by Erosion (265), other (96), and Ice-dammed (8) glacial lakes, respectively,” Isro said.

One example is Ghepang Ghat lake in Himachal Pradesh, which has grown 178% larger from 36.49 to 101.3 hectares between 1989-2022 at a rate of nearly 2 hectares per year.

As glaciers rapidly melt, the swelling lakes not only indicate monumental environmental changes but also elevate risks of glacial lake outburst floods that can unleash devastating flooding downstream into mountain communities.

<https://timesofindia.indiatimes.com/india/glaciers-melting-at-unprecedented-rates-in-indian-himalayan-region-isro/articleshow/109505281.cms>

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