

### NEWSPAPER HIGHLIGHT

The Union Home Ministry has informed the Lok Sabha that 11 States and one Union Territory have boundary disputes between them. It added that “occasional protests and incidents of violence are reported from some of the disputed border areas”. “There are boundary disputes arising out of demarcation of boundaries and claims and counter-claims over territories between Andhra Pradesh-Odisha, Haryana-Himachal Pradesh, Union Territories of Ladakh-Himachal Pradesh, Maharashtra-Karnataka, Assam-Arunachal Pradesh, Assam-Nagaland, Assam-Meghalaya, Assam-Mizoram,” Minister of State for Home Nityanand Rai said in a written reply in the Lok Sabha.

The Supreme Court upheld the Government’s mandate to broaden three Himalayan highways, considered crucial by the Ministry of Defence (MoD) for quick troop build-up along the India-China border. The three National Highways — Rishikesh to Mana, Rishikesh to Gangotri and Tanakpur to Pithoragarh — act as feeder roads to the northern border with China. They are part of the Char Dham Highway project. The highways will now be developed in accordance with the double lane with paved shoulder (DLPS) system. “This court in judicial review cannot second guess the infrastructural needs of the armed forces,” a Bench led by Justice D.Y. Chandrachud said in a judgment.

India’s wholesale inflation accelerated to a new high of 14.2% in November from 12.5% in October, led by a surge in primary food inflation that hit a 13month high and a continued uptick in mineral, fuel and power, as well as oil and gas prices. Economists termed November’s record wholesale inflation numbers — the eighth month in a row that India has seen doubledigit inflation — a negative surprise. Expectations that the tax cuts on fuel announced last month by the Union Government could provide some relief to producers grappling with high commodity and freight costs were largely belied.

The Asian Development Bank (ADB) has marginally lowered its growth projection for the Indian economy to 9.7% in 2021-22, from 10% estimated in September. The bank cited the lower than expected 8.4% growth in the July to September quarter and expects supply chain

### ATLANTIFICATION

1.A recent study has found that Atlantification started at the beginning of the 20th century. The Arctic has warmed by 2 degrees Celsius since 1900. Long ago, the Arctic and the Atlantic oceans existed in harmony, with warm and salty Atlantic waters gently flowing into the Arctic. The Arctic had a layered nature - sea ice on top, cool freshwater in the middle, and warm, salty water at the bottom - that helped hold the boundary between the polar ocean and the warmer Atlantic. But everything changed when the larger Atlantic Ocean began flowing faster than the Arctic Ocean could accommodate.

2.This weakened the distinction between the layers and transformed Arctic waters into something closer to the Atlantic. This process is called Atlantification. It is part of the reason why the Arctic is warming faster than any other ocean. Atlantification is not a new invasion of the Arctic. But what’s new is that the properties of the Arctic are changing.

3.New Study Recent study found that the researchers **extracted a yardlong sediment core from the seafloor of Kongsfjorden, a glacial fjord in the east end of the Fram Strait. [Fram Strait is a gateway between the Norwegian archipelago Svalbard and Greenland, where Arctic and Atlantic waters mingle.]** This sediment archived 800 years of historical changes in Arctic waters. Researchers sliced up the core at regular intervals and identified the samples’ foraminifera - single-celled organisms that build intricate shells around themselves using minerals in the ocean.

4.Process - **When foraminifera die, their shells drift to the seafloor and accumulate in layers of sediment. The creatures are crucial clues in sediment samples; by identifying which foraminifera are present in a sample and analyzing the chemistry of their shells, scientists can glean the properties of past oceans.** Researchers noticed a sudden, massive increase in the concentration of foraminifera that prefer salty environments - a sign of Atlantification, around 1907 give or take a decade.

5.This is far earlier than anyone had documented. Additionally, a molecular biomarker could pinpoint a specific year, 1916, when coal mining began in Kongsfjorden. Since the foraminiferal shift occurred just before this marker, the researchers estimate Atlantification began. The authors are not sure of the precise reasons behind the early Atlantification. If human influences are the cause, the whole system is much more sensitive to greenhouse gases than we previously thought.

### SATELLITE BROADBAND SERVICE

1.Broadband essentially means a wide bandwidth, high-capacity data transmission technique, using a broad range of frequencies.Satellite Service is super-fast and does not need wires or towers to connect to the World Wide Web. Advantage - High-speed internet services can be provided in remote areas (in the middle of the ocean, in rugged unreachable terrain such as the Himalayas), where terrestrial networks cannot be set up. This is especially pertinent to India (with a wide range of geography), given that 20-25% of the Indian population resides in areas where it is extremely hard for terrestrial operators to set up shop.

2.**Availability in India - Now, VSAT operators offer satellite broadband services at a very limited capacity in India in a few remote locations.** The utilisation of satellite services is restricted to minimal applications - such as disaster management, defence, scientific locations, etc. Key hurdles are high latency of these services, which means that real-time transmission is hard. 3.But this hurdle can be overcome with the ISRO’s high throughput Geostationary Equatorial Orbit (GEO) satellites, which can beam high-speed internet up to 300 gigabytes per second. The launch of the constellation of Low earth orbit (LEO) satellites very close to the earth’s surface will reduce the latency of satellite broadband. Example - Elon Musk’s Starlink, Sunil Bharti Mittal backed OneWeb and the Canadian satellite major Telesat.

factors such as chip shortages and rising semiconductor prices to continue to suppress growth.

Srinagar district has emerged as a hotbed of militancy in Kashmir this year, with a significant rise in the number of “encounters” from the “zero militancy” figures and a small number of shootouts in 2020. The district also recorded the highest number of alleged targeted killings of policemen and civilians, including members of the minority community. In 2020, according to official data, 20 militants were killed in nine encounters. In 2021, the summer capital of Jammu and Kashmir saw around 20 encounters and shootouts in and around the city.

India voted against a draft resolution at the United Nations Security Council (UNSC) linking climate to security, saying it was an attempt to shift climate talks from the United Nations Framework Convention on Climate Change (UNFCCC) to the Security Council and a “step backward” for collective action on the issue. The resolution was sponsored by Ireland and Niger, and it did not pass, with 12 UNSC members voting for it, India and Russia voting against it and China abstaining.

Chief Justice of India N.V. Ramana on Tuesday promised to take up with the Supreme Court Collegium the demand for more women judges. “The demand for higher representation beyond 50% on the Bench in view of backlog of under representation of women is taken note of. I promise to take up your demand with my Brothers in the Collegium,” the CJI told an audience of women Supreme Court and High Court judges and senior lawyers.

Nearly 53% of persons arrested under the Unlawful Activities (Prevention) Act (UAPA) in 2018, 2019 and 2020 were below the age of 30, the Union Home Ministry (MHA) informed Lok Sabha. In a written reply, Minister of State for Home Nityanand Rai said the UAPA has been amended in the past keeping in view the requirement and “presently no amendments in the UAPA are under consideration.”

The European Union imposed sanctions on Russian private military contractor Wagner Group on Monday as well as on eight individuals and three other energy companies in Syria accused of helping to finance the mercenaries in Ukraine, Libya and Syria.

Time magazine named Tesla founder and space entrepreneur Elon

## LOG4SHELL VULNERABILITY

1.A new vulnerability named Log4Shell is being touted as one of the worst cyber security flaws to have been discovered. Log4Shell vulnerability, which is officially known as CVE-2021-44228, is a critical log4j Vulnerability. [CVE number is the unique number given to each vulnerability discovered across the world].

2.**This vulnerability impacts an open-source logging library Log4j2 version (common logging library used by applications across the world).** Logging lets developers see all the activity of an application. Tech companies (like Apple, Microsoft, Google), enterprise applications (from CISCO, CloudFare, Amazon and others) and even government agencies all rely on this open-source logging library.

3.Log4Shell vulnerability could allow a remote hacker to control java-based web servers and launch arbitrary ‘remote code execution’ (RCE) attacks on a system with software using the log4j2 Java library.

4.It could potentially let the users to run malicious software on a device or servers. It allows a hacker to take control of a system. The flaw can be exploited either over HTTP or HTTPS (the encrypted version of browsing), which adds to the problems.

## GRAMIN AGRICULTURAL MARKETS

1.The government programme to convert 22,000 rural haats into Gramin Agricultural Markets (GrAMs) had barely 6% of the conversion target, since its launch in 2019. In the Budget announcement 2018-19, the Government of India has announced to upgrade the existing 22,000 rural haats into GrAMs.

2.**Gramin Agricultural Markets (GrAMs) are village level retail agricultural markets in India, which help farmers in selling their produce locally.** These markets are in close proximity of the farm gate that promote and service a more efficient transaction of the farmers’ produce across the agricultural sub-sectors. GrAMs will facilitate the retail agricultural marketing in the country.

3.**Objectives - The farmer-producers may sale their agri-produce directly to the consumers without having to go through the market regulations.** Aggregation of small lots of farmer-producers through an institutional mechanism for gaining enhanced bargaining power and subsequent sale either at the GrAMs via an online trade platform.

4.Ministry of Rural Development (MoRD) will strengthen physical infrastructure of these GrAMs using Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other Schemes. Further, the Government has announced to set up of an Agri-Market Infrastructure Fund with a corpus of Rs. 2000 crore for developing and upgrading agricultural marketing infrastructure in the 22000 GrAMs. GrAMs will be linked to e-NAMs to sell their produce nationally.

## ROUDRAM RANAM RUDHIRAM

1.Director SS Rajamouli is all set for the release of his upcoming period drama titled Roudram Ranam Rudhiram which is officially titled RRR. Set in the 1920s, RRR is said to be a fictional story based on the lives of tribal freedom fighters Alluri Sitarama Raju and Komaram Bheem.

2.About Alluri Sitaram Raju: In 1922, Indian revolutionary Alluri Sitaram Raju led the Rampa Rebellion against the British raj for their imposition of the 1882 Madras Forest Act, which severely restricted the free movement of the tribal community within their own forests. Under the implications of this Act, the community was unable to fully carry out the traditional Podu agricultural system, which involved shifting cultivation. The armed struggle came to a violent end in 1924, when Raju was captured by police forces, tied to a tree, and shot by a firing squad. His heroics resulted in him being titled manyam veerudu, or ‘the hero of the jungle’.

3.About Kinaram Bheem: Born in Telangana’s Adilabad district in 1901, Bheem was a member of the Gond community and grew up in the populated forests of the Chanda and Ballapur kingdoms. Komaram Bheem had escaped from prison to a tea plantation in Assam. Here, he heard about the rebellion being led by Alluri, and found a new sense of inspiration to protect the Gond tribe to which he belonged.

4.**Rampa Rebellion: The Rampa Rebellion of 1922, also known as the Manyam Rebellion, was a tribal uprising, led by Alluri Sitarama Raju in Godavari Agency of Madras Presidency, British India.** It began in August 1922 and lasted

**Musk as person of the year, capping a roller-coaster 2021 for the technology magnate.**

until the capture and killing of Raju in May 1924.