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MK Yadav Sir

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India is now third largest producer of solar power

Jacob Koshy
NEW DELHI

In 2023, India overtook Japan to become the world's third-highest producer of solar power, said a report by international energy analytics agency Ember on Wednesday. India generated 113 billion units (BU) of solar power in 2023 compared to Japan's 110 BU.

In terms of installed power capacity, which includes sources of renewable and non-renewable energy, India at 73 gigawatt (1 GW is one billion watts) ranks fifth in the world while Japan is at third place

(83 GW), according to data computed by Ember.

While reflective of the rising share of solar power in India's energy mix, the power produced per year can vary due to fluctuations in a country's power demand and local circumstances which lead to a gap between the installed capacity and actual power produced.

Large gap

Data from government think-tank, NITI Ayog suggest that as of May 2024, solar power while making up 18% of India's total installed electricity of 442

GW, made up only 6.66% of the power actually produced - reflecting the gap between potential and actuals.

Power demand in Japan decreased by 2% (2 BU) in 2023 after rising in 2021 and 2022, thus allowing India to overtake Japan. While it is unclear if this trend will sustain next year, as surpassing the next country - the United States which is in the second spot - will require India to more than double its current solar production and exceed 228 BU.

The leading producer of solar power in the world is

China which produced 584 BU of solar power in 2024 - more than the next four countries combined - the United States, Japan, Germany and India.

'Future has arrived'

Globally however, renewable sources of energy made up 30% of global electricity produced. Renewables have expanded from 19% of global electricity in 2000, driven by an increase in solar and wind power, to 30% in 2023. China was the main contributor in 2023, accounting for 51% of the additional global solar generation and 60%

of new global wind generation. Combined with nuclear, the world generated almost 40% of its electricity from low-carbon sources in 2023.

Ember forecasts fossil fuel generation to drop in 2024 and the trend to continue in other years, suggesting that 2023 might be the year when the fossil fuel production may have "peaked" globally.

"The renewables future has arrived," said Dave Jones, Ember's director of global insights. "Solar in particular is accelerating faster than anyone thought possible."

India's Status in Solar Power

- **Solar Capacity:** Installed solar energy capacity increased by 30 times in the last 9 years, reaching 81.81 GW as of Mar 2024.
- **Solar Potential:** India's solar energy potential is estimated to be 748 GWp according to the National Institute of Solar Energy (NISE).
- **Vision 2030: A Renewable Revolution:** India's vision for 2030 emphasizes renewable energy dominance and green growth to combat climate change and facilitate energy transition.
- **Net Zero Carbon by 2070:** Aiming for long-term sustainability, India aspires to achieve net zero carbon emissions by 2070, demonstrating its commitment to environmental stewardship.

SOLAR ENERGY IN INDIA

(Syllabus: GS Paper 3 – Env & Eco)

Context: A report by international energy analytics agency Ember recently revealed that in 2023, **India surpassed Japan to claim the position of the world's third-largest producer of solar power.**

Key findings

- **India's Ranking:** India ranks fifth globally in installed power capacity, with a capacity of 73 gigawatts (GW), encompassing both renewable and non-renewable sources.
- **Japan's Installed Power Capacity:** Japan holds the third position globally in installed power capacity, with 83 GW, according to data compiled by Ember.
- **Solar Power Contribution in India:** Solar power constitutes 18% of India's total installed electricity capacity of 442 GW as of May 2024, but it contributes only 6.66% to the actual power produced, as per Niti Ayog data.
- **China's Dominance in Solar Power Production:** China stands as the leading producer of solar power globally, generating 584 billion units (BU) in 2024, surpassing the combined production of the United States, Japan, Germany, and India.
- **Growth of Solar Generation:** Global solar generation experienced exponential growth, surpassing six times its 2015 levels by 2023. India, in particular, saw a 17-fold increase in solar generation during the same period.
 - The share of solar generation in India's electricity mix surged from 0.5% in 2015 to 5.8% in 2023.

Do marriages need to be registered? What happens if they aren't?

APURVA VISHWANATH
NEW DELHI, MAY 8

THE SUPREME Court last week ruled that a Hindu couple who had appeared before it had "never acquired the status of husband and wife," as they had registered their marriage under the Hindu Marriage Act, 1955 (HMA) before performing wedding rituals. The SC ruled that the couple, who had filed divorce cases, need not get a divorce because they were never married in the first place. The apex court's observations spotlight various issues on the registration and solemnization of a marriage, and its necessity.

What is a solemnized marriage?
Solemnizing a marriage refers to the performance of an official marriage ceremony, with appropriate rituals.
In India, marriage is largely governed by a gamut of personal laws, and the Special Marriage Act, 1954 (SMA). Though codified

through statute, these personal laws are essentially practices ordained by religion, with each religion having its own set of requirements for a marriage – a marriage is "valid" when these requirements are met.

For instance, for Hindus and Christians, marriage is a sacrament, or a religious bond. Rituals such as kanyadaan and saptpadi (sapt phere) solemnize a Hindu marriage. Section 7 of the HMA codifies these requirements, and names saptpadi as an essential ritual.

For Christians, a ceremony in church based on local customs is regarded as a valid marriage. For example, for some Tamil Christians, this involves tying of a thali – a chain with a cross on the pendant in church. Under Muslim law, however, marriage is a contractual obligation. A valid marriage requires the consent of both parties, in writing, and in the presence of witnesses. In practice, this entails both parties giving local consent, and signing a *nikahnama* (an Islamic marriage contract) in the presence of witnesses and a qazi.

And what are solemnized marriages?

The registration of a marriage after it is solemnized as per rituals is different from a "registered" marriage.

Terms like "court marriage" or "registered marriage" refer to a non-religious or civil marriage under the SMA, which is a secular law. A marriage performed under this law is essentially a solemnization in court (a registrar's office) without any rituals.

However, marriages under personal laws (such as HMA) become valid only after the performance of rituals prescribed by religion. A marriage without any rituals is only valid under the SMA. Section 8 of the HMA gives power to the state to register marriages solemnized as per the requirements of Section 7. Similarly, the Indian Christian Marriage Act, 1872, provides the procedure for the solemnization of Christian marriages and their registration.

For Muslims, a *nikahnama* issued by a qazi outlines the terms of the marriage.

Although not a public registration under a statute, this registration form is widely adopted. Apart from this, several states have their own laws for the registration of Muslim marriages and divorce.

What if a marriage is not registered?
Although there is a central legislation on marriage registrations – the Births, Deaths and Marriages Registration Act, 1886 – it does not have a robust application to marriage. Unlike the effort to record births and deaths, States have their own laws, and in some states like Karnataka and Delhi, registration of a marriage is mandatory.

A certificate of marriage registration is useful for various official purposes where the spouses need to declare that they are married – for instance, applying for a spousal visa or joint medical insurance. However, not registering a marriage cannot be the sole ground to declare it invalid – since registering a marriage itself does not make it valid.

When the validity of a marriage is contested, then a marriage certificate alone is not enough to prove the marriage. An exception to this is a certificate under the SMA which is "conclusive" proof of marriage. Section 13(2) of the SMA states that "on a certificate being entered in the Marriage Certificate Book by the Marriage Officer, the Certificate shall be deemed to be conclusive evidence of the fact that a marriage under this Act has been solemnized and that all formalities respecting the signatures of witnesses have been complied with".

In Muslim and Christian marriages too, registration takes place almost immediately after solemnization, which makes for more reliable evidence. This is unlike a Hindu wedding, where the priest performing the ceremony does not routinely certify the marriage.

However, in law, there exists a general presumption of marriage when a man and woman have cohabited continuously, even if there is no direct evidence of marriage.

Section 114 of the Indian Evidence Act states that "the Court may presume the existence of any fact which it thinks likely to have happened, regard being had to the common course of natural events, human conduct and public and private business, in their relation to the facts of the particular case."

A valid marriage as per rituals might be key in determining who is a rightful spouse when there are claims by multiple cohabiting partners. These aspects become crucial in bigamy trials and inheritance suits. In a bigamy case, a man has to prove that one of his marriages is not valid to not be charged for marrying twice. In an inheritance case, the validity of a marriage is questioned to disinherit a spouse. Evidence of a valid marriage can be proof of performing a valid marriage as per rituals (through photos, witnesses etc.); and proof of long cohabitation as spouses through acceptance by family, friends or even children. A marriage certificate has corroborative value in these cases, but cannot be counted as evidence in itself.

Registered Marriages

- **Definition:** It refers to the legal validation of a marriage through official registration after it has been solemnized.
- **Legal Framework:** Marriages under laws like the Special Marriage Act (SMA) are recognized as valid without religious rituals, often performed in a registrar's office.

- Section 8 of the Hindu Marriage Act grants authority to states for registering marriages performed according to Section 7 requirements, ensuring legal recognition.

- **Validity under Personal Laws:** Marriages governed by personal laws, such as the Hindu Marriage Act (HMA), require the performance of religious rituals for validation.
- **Solemnization Requirements:** Marriages without any rituals are deemed valid only under the Special Marriage Act (SMA).

What if a marriage is not registered?

- **Constitutional Framework:** Entry 5 of the Concurrent List in the Constitution's Seventh Schedule deals with marriage and divorce, and Entry 30 deals with vital statistics including registration of births and deaths.
- **Legal Implications:** Both these subjects jointly or separately deal with the registration of marriages, emphasizing its legal significance.

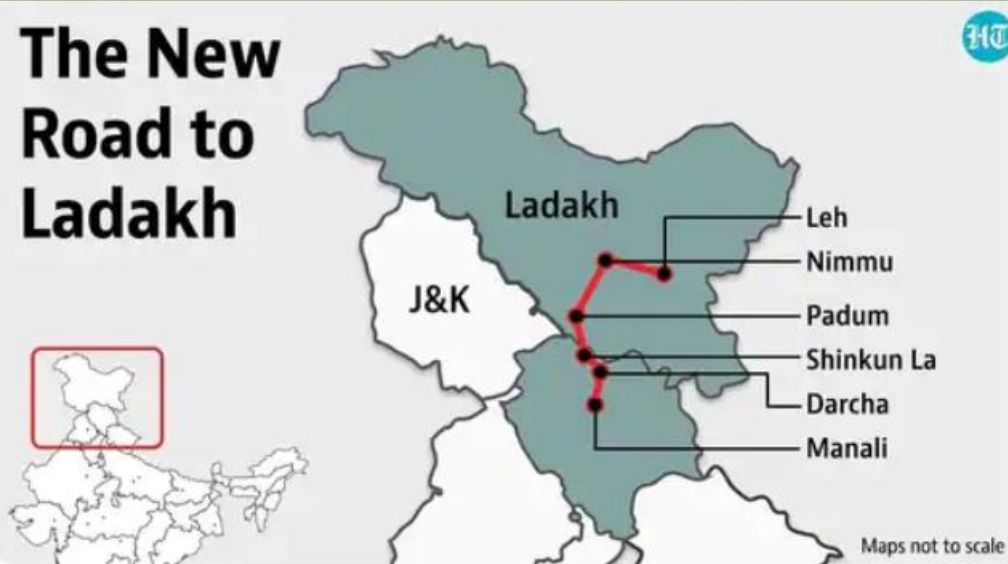
Context: Recently, the Supreme Court ruled that despite possessing an official marriage certificate, a Hindu couple before the Court had "never acquired the status of husband and wife," highlighting various issues on marriage registration and solemnization, emphasizing their necessity.

Solemnized Marriage

- **Definition:** Solemnizing a marriage refers to conducting an official marriage ceremony with appropriate rituals.
- **Legal Framework in India:** Marriage in India is primarily governed by personal laws and the Special Marriage Act, 1954 (SMA).
- **Personal Laws:** In India personal laws are based on religious practices, with each religion having its own marriage requirements.
- **Validity:** A marriage is considered valid when it meets the requirements prescribed by the respective personal laws or the SMA.
- **Examples:**
- **Hindu:** Rituals such as kanyadaan, panigrahana and saptpadi, or other local customs solemnize a Hindu marriage.
- **Muslims:** A valid marriage requires the consent of both parties, in writing, and in the presence of witnesses.
- **Christians:** A ceremony in the Church based on local customs is regarded as a valid marriage.

BRO to complete 2 roads near China border, start work on world's highest tunnel

The New Road to Ladakh



Border Roads Organisation (BRO)

- **About:** It is a road construction executive force in India that provides support to Indian Armed Forces formed on 7 May 1960.
- **Motto:** Guided by the motto "Shramena Sarvam Sadhyam".
- **Nodal Agency:** Ministry of Defence.

Context: The Border Roads Organisation (BRO) is preparing to commence the construction of the Shinkun La Tunnel.

Shinkun La Tunnel

- **About:** It is an upcoming motorable passage situated beneath the 16,580 feet high Shinku-La pass.
- **Location:** Positioned on the Nimu-Padam-Darcha Road link, it connects Himachal's Lahaul Valley and Ladakh's Zaskar Valley.
- **Length:** 4.25 Km
- **Part of:** Project Yojak
- **Connectivity:** This tunnel will offer all-weather road access to Ladakh, serving as the shortest route to its border regions.
- **Authority:** The Border Roads Organization (BRO)
- **Strategic Significance:** Expected to optimize transportation of heavy machinery to key strategic locations like Kargil, Siachen, and the Line of Control (LOC), potentially reducing travel distances by about 100 km.
- **Security:** Traffic movement within the tunnel will be shielded from long-range artillery or missile threats from neighboring countries, enhancing security.

WHY VIETNAM WANTS US TO CHANGE ITS 'NON-MARKET ECONOMY' STATUS

ALIND CHAUHAN
NEW DELHI, MAY 8

VIETNAM HAS been pushing the Biden administration to change its "non-market economy" classification to "market economy" to avoid high taxes imposed by the United States on the goods imported from the Southeast Asian country.

Communist Vietnam has been on Washington's list of non-market economies for more than two decades — a list which comprises 12 countries, including Russia and China.

The US Department of Commerce is currently reviewing Vietnam's status. The review is set to end by late July.

What are 'non-market economies'?

The US designates a country as a non-market economy based on several factors. These are: if the country's currency is convertible; if wage rates are determined by free bargaining between labour and management; if joint ventures or other foreign investment are allowed; whether the means of production are owned by the state; and if the state controls the allocation of resources and price and output decisions. Other factors like human rights are also considered.

The 'non-market economy' label allows the US to impose 'anti-dumping' duties on goods imported from designated countries. In international trade, dumping refers to when a country's export prices are intentionally set below domestic prices, thereby inflicting harm to industries in the importing country. Anti-dumping duties compensate for the difference between the imported goods' export price and their normal value.

The level of anti-dumping duties is determined by relying on a third country — say, Bangladesh in Vietnam's case — which is classified as a 'market' economy. The US would then assess the value of a product to be imported from Vietnam based on what it is worth in Bangladesh — and then assume that this is the supposed production cost to a Vietnamese company.



Assembly line at a garment factory in Ho Chi Minh City. *The NYT*

Why does Vietnam want the 'market economy' status?

Vietnam has argued that it has recently implemented economic reforms which should get its name off the non-market economies list.

The country does meet a number of criteria for the status to be changed. For instance, Vietnam allows foreign investment, and wages are determined by free negotiations between workers and management, according to a report by the Center for Strategic and International Studies (CSIS), a Washington-based think tank.

The change in status will help Vietnam get rid of the anti-dumping duties, making its products more competitive in the US market.

What are the challenges?

US steelmakers and the American Shrimp Processors' Association have asked the Biden administration to not change Vietnam's status, citing the country's restrictions on land ownership, its weak labour laws, and lower shrimp duties.

Also, eight US senators and 31 members of the House of Representatives have claimed that the change in Vietnam's status "would aid Chinese state firms that have invested heavily in Vietnam, by letting them more easily circumvent US tariffs on their goods," according to a report by Reuters.

Context: Vietnam has been pushing the USA to quickly change its "non-market economy" classification to "market economy", in a bid to avoid high taxes imposed by the US on the goods imported from the Southeastern country.

Non-Market Economies

- **About:** Non-market economies are countries where the government plays a significant role in economic activity, often influencing prices and production decisions.
- **Factors:**
 - Convertibility of currency.
 - Wage determination through free bargaining.
 - Permission for foreign investment like joint ventures.
 - Ownership of means of production by the state.
 - State control over resource allocation, prices, and output decisions.
 - Consideration of factors like human rights may also play a role.
- **Anti-Dumping Duties Imposition:** The non-market economy label enables the imposition of "anti-dumping" duties by the US on goods imported from designated countries.
- **Dumping in International Trade:** Dumping occurs when a country's export prices are deliberately set below domestic prices, potentially harming industries in the importing country.
- **Purpose:** Anti-dumping duties aim to compensate for the difference between the export price of imported goods and their normal value.
- **Determining Anti-Dumping Duties:** The level of anti-dumping duties is determined by comparing the product's value in a third country, often a market economy like Bangladesh, rather than considering the costs provided by the company from the non-market economy like Vietnam.

India got \$111bn in remittances in 2022, first to go past \$100bn mark

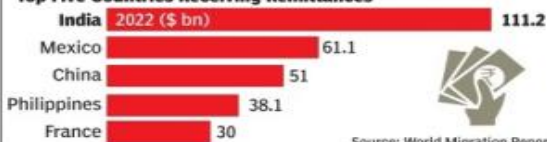
Lubna Kably | TNN

Mumbai: India is the origin of the largest number of international migrants — nearly 18 million, with large diasporas in the UAE, US and Saudi Arabia. And it continues its march as the top country receiving remittances from its diaspora: the figure crossed \$110 billion in 2022.

According to the World Migration Report, 2024, released in Dhaka on Wednesday by the UN's International Organisation for Migration, India, Mexico and China were the top three remittance recipient countries in 2022, followed by the Philippines, France and Pakistan. India

MONEY FLOW

Top Five Countries Receiving Remittances



Source: World Migration Report

received \$111 billion, the first country to reach and even surpass the \$100-billion mark. In 2020, it had received \$83 billion. Mexico, with inward remittances of \$61 billion, was the second-largest recipient; in the previous year it had replaced China to occupy the second spot and

continued to hold sway.

The report points out that international remittances have recovered from the dip in 2020 due to the pandemic. Migrants sent an estimated \$831 billion in international remittances globally in 2022.

► Migration corridors, P 11

Remittance

- **About:** It is comprised of worker's remittances, compensation of employees, and migrants' transfers as documented in the IMF Balance of Payments.
- **Worker's Remittances:** These are current transfers made by migrants who are regarded as residents in the source country.
- **Significance for Low and Middle-Income Countries:** Remittances serve as a crucial source of household income in low and middle-income nations.

Context: India, recently noted as the origin of the largest number of international migrants, nearly 18 million, maintains significant diasporas in the UAE, US, and Saudi Arabia, while also leading as the top recipient of remittances as per **World Migration Report, 2024**.

Key Findings of World Migration Report, 2024

- **Released by:** The International Organization for Migration (IOM).
- **Leading Remittance:** According to the World Migration Report 2024, India, Mexico, and China were the top three recipients of remittances in 2022.
- **India's Remittances:** India led in 2022 remittances, surpassing USD 111 billion, with substantial contributions from Southern Asia, Pakistan, Bangladesh, and Gulf States.
- **Challenges Faced by Migrant Workers:** Migrant workers encounter challenges such as financial exploitation and workplace mistreatment, particularly in the Gulf Cooperation Council (GCC) States.
- **Top Migrant Origin:** India emerged as the top migrant origin, receiving \$111 billion in 2022, with Mexico (\$61 billion) and China (\$51 billion) following suit. Migration corridors data was analyzed, highlighting the Indian diaspora's presence in the UAE, US, and Saudi Arabia.

Rain gods, cloud-seeding not the answers to forest fires, SC tells Uttarakhand

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Wednesday told the Uttarakhand government that rain gods or cloud-seeding would not douse the forest fires that had claimed five lives in the State.

"Cloud-seeding or depending on rain gods is not the answer. You (Uttarakhand government) have to take preventive measures," Justice Sandeep Mehta, who is part of the two-judge Bench headed by Justice B.R. Gavai, told counsel appearing for Uttarakhand.

The State downplayed the forest blaze in court, assuring that the emergency was over.

"We don't know. But we will surely examine if the emergency is over or not," Justice Gavai replied.

The court listed the case for detailed hearing on Wednesday.

The Uttarakhand government submitted that forest fires were not peculiar to Uttarakhand. "All over the world there are forest fires... There is a peak



An IAF helicopter conducts a Bambi Bucket operation to douse the forest fire, in Pauri Garhwal district on Wednesday. PTI

IAF continues to douse forest fires in the State

The Hindu Bureau
NEW DELHI

The Indian Air Force (IAF) continued to help Uttarakhand in dousing forest fires on Wednesday.

"In response to the raging forest fires at the Pauri Garhwal sector in

Uttarakhand, the IAF provided relief by undertaking Bambi Bucket operations by its Mi17 V5 helicopters. Eight sorties of the helicopter were taken for over four hours in which 17,700 litres of water was dumped to douse the fire," IAF said.

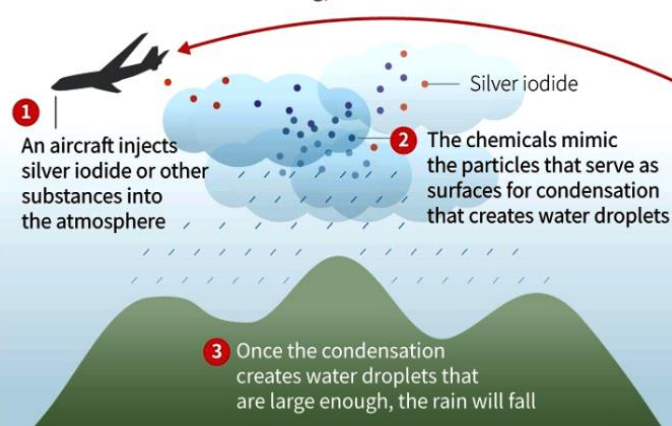
every four years," the State counsel said.

The State government said it has maintained a high level of vigilance.

According to the government counsel, there have been 398 incidents of forest fire since November 2023.

Cloud seeding

Traditional method of rainmaking, in use since the 1940s



Context: The Supreme Court recently informed the Uttarakhand government that rain gods or cloud-seeding would not extinguish the forest fires responsible for five deaths in the state.

Cloud Seeding

- **About:** It is a weather modification technique that improves a cloud's ability to produce rain or snow by introducing tiny ice nuclei into certain types of subfreezing clouds.
- **Cloud Seeding Methods**
- **Static Cloud Seeding:** It involves the dispersion of a chemical, like silver iodide, into clouds. This substance acts as a crystal around which moisture can condense, enhancing the efficiency of rain clouds in releasing water.
- **Dynamic Cloud Seeding:** It focuses on amplifying vertical air currents, promoting increased water passage through clouds, resulting in more rainfall. This method employs up to 100 times more ice crystals compared to the static approach [source: Cotton].
- **Hygroscopic Cloud Seeding:** It utilizes salts dispersed through flares or explosives in the lower sections of clouds. These salts grow in size as they merge with water.
- **Process of Cloud Seeding:**
 - Weather forecasters monitor atmospheric conditions and identify suitable clouds for seeding based on precipitation patterns.
 - This technique can increase rainfall by up to 30-35% in clear conditions and 10-15% in more humid conditions.

Benefits of Cloud Seeding

- Create more winter snowfall and lead to more mountain snowpack
- Enhance the natural water supply to communities

Transforming manufacturing

Dependence on PLI should be contained

Intending to formulate a production-linked incentive (PLI) scheme for electronics-component manufacturing, the Ministry of Electronics and Information Technology, as reported by this newspaper, has asked various stakeholders to share information related to India's disabilities against competing countries, export potential, major buyers of components and sub-assemblies, and foreign and domestic firms planning to set up manufacturing plants in the country. The government aims to increase capacity, enhance cost-effectiveness, and create a component ecosystem worth \$75 billion over the next five years. Past evidence, however, begs the question of whether PLI can help transform India's manufacturing ecosystem.

Amid increased US-China tensions, India aims to become part of the China-plus-One strategy of large multinational corporations. In this context, PLI, essentially a production-subsidy scheme, seeks to expand domestic production capacities in different sectors. While the PLI scheme is the closest India has to an industrial policy, evidence so far suggests that its success is limited. Except for the PLI scheme for manufacturing mobile phones in India, multinationals seem reluctant to establish a significant manufacturing base in the country. Even in the case of iPhones being manufactured in India, which has done reasonably well, most of the components are being produced elsewhere. Notably, two of Apple's vendors, Wistron and Pegatron, have withdrawn from India.

Overall investment remains far from what was initially expected in other sectors where PLI schemes were launched, including high-efficiency solar photovoltaic modules, automobiles, and textiles, which were expected to gain scale. Unfortunately, India's industrial strategy, instead of being harnessed to generate productive employment and boost export potential, is tilting towards import substitution. The PLI scheme shortlists firms and provides subsidies of 4-6 per cent, based on conditions like investment and production. It can be argued that PLI-induced investment has been unable to create the scale of employment needed, especially in low-skill manufacturing. PLI for textiles is a case in point. Textile is a labour-intensive sector with a tremendous scope for job creation. However, the growth of investment in this sector remains slower than anticipated. As 16th Finance Commission Chairman Arvind Panagariya also noted recently, PLI is not a tool for overall industrialisation. It can expand export potential and bring in benefits perhaps in a few sectors and should not be used to subsidise every industry.

The idea of import substitution and creating a few national champions has also led to increased tariff protection, an impediment for firms aiming to be part of global value chains. Integrating with global value chains is critical for industrial production and exports. Since inception, expenditure on the PLI scheme has been a fraction of the planned outlay. Also, in principle, it interferes with market functioning and increases bureaucratic control. Therefore, before including new sectors in the PLI scheme, the government would do well to study how the scheme has worked thus far. Giving large firms production subsidies and tariff protection will not be enough to push industrial production and exports in the long run. What India needs are deeper reforms. Strong and resilient infrastructure, which has improved significantly in recent years, a reliable trade policy with low tariff rates, a skilled and employable workforce, and an investor-friendly business environment remain the key to industrial development.

Context: The Ministry of Electronics and Information Technology recently solicited input from stakeholders to develop a production-linked incentive (PLI) scheme for electronics-component manufacturing, aiming to address India's competitive disadvantages compared to other nations.

Production-Linked Incentives

- **About:** It is a form of performance-linked incentive to give companies incentives on incremental sales from products manufactured in domestic units.
- **Total outlay:** INR 1.97 Lakh Crores.
- **Aim:**
 - Boosting the manufacturing sector and to reduce import.
 - To create national manufacturing champions.
 - To create 60 lakh new jobs, and an additional production of 30 lakh crore during next 5 years.
- **The purpose:**
 - To attract investments in key sectors and cutting-edge technology.
 - Ensure efficiency and bring economies of size and scale in the manufacturing sector.
 - Make Indian companies and manufacturers globally competitive.
- **Key sectors:** Schemes across 14 key sectors, like telecommunication, white goods, textiles, manufacturing of medical devices, automobiles, speciality steel, food products, high-efficiency solar PV modules, advanced chemistry cell battery, drones, and pharma etc.

Production Linked Incentive Scheme

- **About:** It is a next version of PLI for IT Hardware for Enhancing India's Manufacturing Capabilities and Enhancing Exports.
- **Objective:** Broadening and deepening of the manufacturing ecosystem by encouraging the localisation of components and sub-assemblies and allowing for a longer duration to develop the supply chain within the country.

REVISED NATIONAL FOREST POLICY

(Syllabus: GS Paper 3 – Env and Eco)

Combating forest fires in focus on Day 1 of UN forum; India shares revised National Forest Policy

UN Forum on Forests

- **About:** It advocates for the management, conservation, and sustainable development of various forest ecosystems worldwide.
- **Establishment:** 2000 by the United Nations Economic and Social Council (ECOSOC).
- **Headquarters:** New York
- **Objective:** UNFF serves as a key platform within the UN system for addressing forest-related issues.
- **Membership:** Member States of the United Nations and specialized agencies, fostering global collaboration and cooperation in forest management.
- **India's Role:** India holds a significant position in the UNFF as a founding member.

Context: India recently presented its updated National Forest Policy at the 19th United Nations Forum on Forests convened in New York, United States.

Revised National Forest Policy

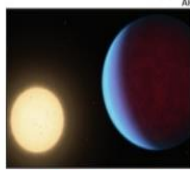
- **Integrated Approach:** India advocates for an integrated approach to forest fire prevention and management.
- **Technology Adoption for Fire Monitoring:** India shares its experience with technology adoption, including remote sensing for near-real-time fire monitoring.
 - The utilization of online portals for forest fire reporting is highlighted.
- **Ecosystem-Based Restoration:** India emphasizes ecosystem-based approaches for post-fire restoration.
- **Global Standards for Forest Certification:** India suggests creating universally accepted global standards for forest certification.
 - There's a need to evaluate current certification programs against these universal standards.
- **Operationalization of Global Fire Management Hub**
 - India proposes operationalizing the Global Fire Management Hub by the UN Environment Programme (UNEP) and FAO.
 - The hub aims to create a platform for sharing knowledge and experience in mitigating forest fires internationally.
 - **National Forest Policy 1988:** To uphold environmental stability and maintain ecological balance, including atmospheric equilibrium, crucial for the survival of all life forms, including humans, animals, and plants.

Scorching, rocky planet twice Earth's size found to have thick atmosphere

A thick atmosphere has been detected around a planet that's twice as big as Earth in a nearby solar system, scientist reported Wednesday. The so-called super Earth — known as 55 Cancri e — is among the few rocky planets outside our solar system with a significant atmosphere, wrapped in a blanket of carbon dioxide and carbon monoxide. Exact amounts are unclear. Earth's atmosphere is a blend of nitrogen, oxygen, argon and other gases. "It's probably the firmest

evidence yet that this planet has an atmosphere," said Ian Crossfield, an astronomer who was not involved with the research, published in the journal *Nature*. Super Earth refers to a planet's size — bigger than Earth but smaller than Neptune. The boiling temperatures on this planet — which can reach as hot as 2,300°C — mean that it is unlikely to host life.

Instead, scientists say the discovery is a promising sign that other such rocky planets with thick atmospheres could



SEARCH FOR HOME-LIKE PLANET

An illustration depicting 55 Cancri e orbiting its star. Scientists say that the discovery is a promising sign that other such rocky planets with thick atmospheres could exist that may be more hospitable

exist that may be more hospitable. The exoplanet 41 light years away is eight times heavier than Earth and circles its star Copernicus so closely that it has permanent day and night sides. A light-year is nearly 9.7 trillion kms. Its surface is encrusted with magma oceans.

To identify the makeup of its atmosphere, researchers studied Webb Space Telescope observations before and after the planet passed behind its star. They separated the light emitted from the planet versus

its star and used the data to calculate the planet's temperature. There's evidence the planet's heat was being distributed more evenly across its surface — a party trick atmospheres are known for. Gases from its magma oceans may play a key role in holding its atmosphere steady. Exploring this super Earth may also yield clues to how Earth and Mars might have evolved. "It's a rare window," said Renyu Hu from Nasa's Jet Propulsion Lab, who was part of the research. ^{AP}

Related News

- Recently another planet has been discovered which is being called Kh2-18b.
- **Kh2-18b**
- **About:** It is an exoplanet that has astronomers excited about the possibility of life.
- **Ocean-Covered Super-Earth:** This planet is much bigger than Earth, with a radius about 2.6 times larger, and it's believed to be covered in a vast ocean.
- **Biosignature Hunt:** Scientists are particularly interested in finding a specific gas called dimethyl sulfide (DMS) in K2-18b's atmosphere.
- **A Potential Sign of Life:** The interesting thing about DMS is that on Earth, it's mainly produced by living organisms, like marine phytoplankton. So, finding DMS on K2-18b could be a strong sign that life exists there.

Context: Scientists recently reported the discovery of a thick atmosphere surrounding a, exo-planet (55 Cancri E) twice the size of Earth in a nearby solar system.

55 Cancri - Discovery in a Nearby Solar System

- **About:** It is classified as a "super Earth" due to its size, being larger than Earth but smaller than Neptune, is an exo-planet orbiting a Sun-like host star 55 Cancri A. .
- **Thick Atmosphere Detected:** Scientists report the detection of a thick atmosphere around a planet twice the size of Earth in a neighboring solar system.
- **Composition of the Atmosphere:** The atmosphere of 55 Cancri consists primarily of carbon dioxide and carbon monoxide, although precise quantities remain unclear.
 - This differs from Earth's atmosphere, which primarily comprises nitrogen, oxygen, argon, and other gases.
- **Firm Evidence of an Atmosphere:** According to astronomer Ian Crossfield, the discovery represents strong evidence of the presence of an atmosphere around 55 Cancri.
- **Boiling Temperatures and Life Possibility:** Despite its atmospheric presence, the extreme temperatures on 55 Cancri, which can soar as high as 2,300°C, make it highly unlikely to support life as we know it.

The India-Nepal border issue

The Prachanda cabinet's decision to put a map showing areas in India as part of its territory on a new currency note has drawn a strong reaction from New Delhi, and is seen as provocative by many in Nepal. What is the history of this disagreement, and of the efforts at its resolution?



YUBRAJ GHIMIRE

NEPAL'S CABINET last week decided to put a map on its Rs 100 currency note showing certain areas administered by India in Uttarakhand as part of its territory, provoking External Affairs Minister's Jaishankar to say that such "unilateral measures" by Kathmandu would not change the reality on the ground.



The territorial dispute is about a 372-sq-km area that includes Limpiadhura, Lipulekh, and Kalapani at the India-Nepal-China trijunction in Uttarakhand's Pithoragarh district. Nepal has claimed for long that these areas belong to it both historically and evidently.

The map was adopted by consensus in Nepal's Parliament four years ago. The Prime Ministers of India and Nepal have agreed to have the boundary issue examined and settled through diplomatic channels. Following the Nepal cabinet's decision, Jaishankar said on May 4 that "discussions about our boundary matters [are ongoing] through an established platform", but it would appear that Kathmandu is not happy with the pace and urgency of that process.

Unlike in 2020, when the new map was adopted, the May 7 decision to put it on the currency note has met with scepticism and criticism in Nepal.

Genesis of the issue

The Treaty of Sugauli at the end of the Anglo-Nepalese War of 1814-16 resulted in Nepal losing a chunk of territory to the East India Company. Article 5 of the treaty took away the jurisdiction of Nepal's rulers over the land to the east of the Kali River.

Buddhi Narayan Shrestha, an expert on boundaries, said that maps issued by the British Surveyor General of India in 1813, 1821, 1827, and 1836 showed the Kali River as originating in Limpiadhura. The next map, published in 1878, used the name of the river in its local language: "Kali Yangtse".

The map that was published in 1920-21 retained the name Kali Yangtse — but it identified a different "Kali". This new Kali was

shown as a stream originating from a temple site, and joining the main stream about a kilometre downstream. However, the last map issued by the British before they left India in 1947 showed the initial position of the Kali River originating in Limpiadhura, Shrestha said.

According to Shrestha, villages in this area — Gunj, Nabhi, Kati, and Kalapani, also known as Tula Myarang and Nabhidang — were covered by the Nepal government census until 1962, and the people paid land revenue to the government in Kathmandu. However, the situation changed after the war between India and China that year.

Bishwambhar Thapa, a former Home Minister of Nepal who is now 93, said India's Prime Minister Jawaharlal Nehru approached King Mahendra of Nepal asking for permission to use Kalapani, which was strategically located close to the trijunction, as a base for the Indian Army.

Dr Bhekh Bahadur Thapa, who served as Nepal's Foreign Minister in 2005-06 and as Ambassador to India during 1997-2003, said that even though Indian officials claimed outright the suggestion of New Delhi, conveyed through then Foreign Secretary Jaishankar, that Nepal's new constitution should be delayed until the concerns of the Trij parties were addressed.

The 134-day blockade of Nepal that began in September 2015 created significant distrust against India, and K P Sharma Oli, who took over as Prime Minister that year, quickly moved to sign a trade and transit agreement with China in order to create a fall-back source for the supply of essential goods.

In July 2020, Prime Minister Azal Bhatti Bajaj assured the visiting Nepal PM K P



Nepal's Prime Minister Pushpa Kamal Dahal Prachanda with Prime Minister Narendra Modi. From Nithi Pandey

Koirala that India had no interest in even an inch of Nepali territory — however, the mechanism led by the two foreign secretaries did not make progress.

The visit of Prime Minister Narendra Modi to Nepal in 2014 gave rise to hopes of a resolution of all contentious issues. He and his Nepali counterpart, Sushil Prasad Koirala, agreed to set up a boundary working group for speedy settlement of the border issue in Kalapani and Susta, a 145-sq-km area that had fallen on the Indian side after the River Gandak changed course.

After returning from India on June 3 last year, Nepal's Prime Minister Pushpa Kamal Dahal Prachanda claimed that Modi had assured him that the border issue would be sorted out at the earliest; however, there was no mention of this in the official statement at the end of the official visit.

Frictions in bilateral ties

The goodwill of the 2005-14 period when India mediated the transition of the Hindu Kingdom into a secular federal republic, evaporated in 2015 after the Maoists rejected outright the suggestion of New Delhi, conveyed through then Foreign Secretary Jaishankar, that Nepal's new constitution should be delayed until the concerns of the Trij parties were addressed.

The 134-day blockade of Nepal that began in September 2015 created significant distrust against India, and K P Sharma Oli, who took over as Prime Minister that year, quickly moved to sign a trade and transit agreement with China in order to create a fall-back source for the supply of essential goods.

In February 2018, Oli, chairman of the Communist Party of Nepal (Unified Marxist-Leninist), returned as Prime Minister with a massive mandate in the first election held under the new constitution. In 2020, he took the lead to build the consensus in Parliament for Nepal's new map that formally included the 372 sq km in Uttarakhand, and pledged to bring it back.

India decried Nepal's "cartographic aggression" as unacceptable, but said the issue would have to be sorted out through diplomatic channels, on the basis of evidence. It is noteworthy that the cabinet decision on printing the new Rs 100 notes has come less than two months after Oli's party joined the ruling coalition in Nepal.

While the manifesto of Oli's CPN (UML) promised to bring these areas into Nepal, successive governments in Kathmandu have over the years taken up issues of "border encroachment" with both India and China. Rajeshwar Acharya, Nepal's former Ambassador to China, said,

2024 direction from 2020

Unlike 2020, when the new map was adopted by Parliament, there is no visible consensus on putting the map on the currency note. The UML and Prachanda's CPN (Maoist Central) are together in the ruling coalition, but the Nepal Congress, the main opposition and largest party in Parliament is yet to make a statement on this issue.

Chairman of Nepal's economic advisor, President Ram Chandra Poudel and a former Governor of Rashtriya Bank, Nepal's central bank, has described the cabinet decision a "unwise" and "provocative". Many others too, believe the issue should be settled through dialogue without actions that may invite extreme steps by India. However, based on a preliminary assessment, the government appears hopeful that with better road connectivity with China, the hardship of Nepal in the event of a 2015-like blockade will be far less.

Nepal sorted out its boundary issues with China in the early 1960s through bilateral meetings of the boundary commissioner. Nepal's former Prime Minister Kirtanadas Bhatt had once quoted his Chinese counterpart Qiao Guo-fu as saying that border issues, if left unresolved, turn into problems for the future generations that are difficult to address.

Despite the in-principle agreement on resolution through an appropriate platform based on evidence, India and Nepal have not used a timeframe or called a meeting for that purpose.

INDIA-NEPAL BORDER DISPUTE

(Syllabus: GS Paper 2 – IR)

India-Nepal Border Dispute

- **About:** The territorial dispute is about a 372-sq-km area that includes Limpiadhura, Lipulekh, and Kalapani at the India-Nepal-China trijunction in Uttarakhand's Pithoragarh district.
- Nepal has claimed for long that these areas belong to it both historically and evidently.
- **Kalapani Dispute:**
 - **Sovereignty Claims:** Both India and Nepal lay claim to the Kalapani area, situated strategically at the trijunction of India-Nepal-China.
 - **Border Dispute:** India administers the region, while Nepal contests this control, advocating for a different border delineation based on river geography.
- **Lipulekh Pass Dispute:**
 - **Geopolitical Significance:** Lipulekh Pass, adjacent to the trijunction, is pivotal for trade and pilgrimage, notably facilitating the route to Kailash Mansarovar.
 - **Territorial Claims:** Nepal asserts ownership of the pass, contrasting India's stance, which aligns it with the Indian state of Uttarakhand.

Historical Context

- **Treaty of Sugauli (1814-16):** Nepal lost territory to the East India Company, including areas east of the Kali River, as per Article 5 of the treaty.
- **Historical Mapping Perspectives**
 - **Early British Maps (1819-1856):** British Surveyor General maps showed the Kali River originating in Limpiadhura, indicating Nepal's historical jurisdiction.
- **Final British Map (1947):** The last British map before Indian independence reaffirmed the original position of the Kali River originating in Limpiadhura, supporting Nepal's historical claim.

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