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Media Platform Bill: Australia

Why in News

Australia has **reached out to India** among several countries, including Canada, France and the UK, in a move to amid a faceoff over compensation for sharing news content from media companies on their platforms.

- Australia's proposed law, **News Media and Digital Platforms Mandatory Bargaining Code Bill 2020**, mandates a bargaining code that aims to force Google and Facebook to compensate media companies for using their content.
- The Bill is expected to **set a precedent in regulating social media** across geographies.

Key Points

- **Background:**

- The **Australian Competition and Consumer Commission (ACCC)**, in its **2019 report**, Digital Platforms Inquiry, noted that there was a **fundamental imbalance in the power between news media and internet platforms**.
- Specifically , the report said these platforms had “**substantial bargaining power** in relation to many news media businesses.”
- It highlighted that **media regulation hardly applied to platforms**, though they have been increasingly playing much the same role as the media. The last two decades have also seen the **tremendous rise of the platforms and sharp decline of the traditional news media**.
- The **Australian government**, reportedly sensing **how important it was to have a strong and independent media environment in a democracy**, asked the ACCC to come up with a draft code, which it did in July 2020.
- After some changes, the **Treasury Laws Amendment (News Media and Digital Platforms Mandatory Bargaining Code) Bill** was introduced in December 2020.

- **Australia’s Media Platform Bill:**

- **Payment to News Outlets:** Big tech and social media giants like Facebook and Google will have to pay local news outlets for using their content.
 - **Big Tech firms will have to negotiate** how much they pay local publishers and broadcasters for content that appears on their platforms.
- **Provision of Arbitration and Fine:** An arbiter is mandated to adjudicate if no agreement is reached and there are also **provisions of heavy fines** if agreements are not done.

- **The Issue Involved:**

- The **media industry is already benefiting from traffic routed to them by the digital platforms**, and that the proposed rules would **expose the Internet companies to “unmanageable levels of financial and operational risk”**.
- Journalism is a public good and a pillar of democracy. **Digital platforms piggyback on its content without sharing the associated costs**. The **subsequent diversion of advertising revenue** has undermined traditional media, particularly regional newspapers.
- **Paying for news feed in itself appears to be less of an issue** for the tech giants, given that **Google agreed to pay news publications in France**.
Google **signed a deal with a group of French publishers** to make **digital copyright payments** for online news content.
- **The fight in Australia** is in fact, **centred on how much control these companies would be able to retain on their payout process** - operational aspects such as deciding the quantum of payments for news feed sources, and having to reveal changes in their algorithms.
 - **France has specifically linked payments to copyright**, without putting a forcing device into the agreements.
 - **Australia’s code**, on the other hand, is almost entirely **focused on the bargaining power of news outlets vis-à-vis the tech majors**, and has some coercive features as well.

- **The Case of India:**

- Policymakers have , which are positioned in a way that service providers cannot reach customers except through these platforms.
- A substantial **discussion on the impact of intermediary platforms on the health of news media outlets is yet to begin** in any meaningful way.
- According to a FICCI-EY report for 2020, there are **300 million users of online news sites**, portals and aggregators in the country.
 - It makes up approximately 46% of Internet users and 77% of smartphone users in India at the end of 2019.
 - With 282 million unique visitors, **India is the second largest online news consuming nation after China**.
- In India, **digital advertising spends in 2019 grew 24%** year-on-year to Rs. 27,900 crore, according to EY estimates, and are expected to grow to Rs. 51,340 crore by 2022.
- In India, the **news aggregators are not mandated to make payments to publishers**.
News aggregator is an online platform or a software device that collects news stories and other information as that information is published and organizes the information in a specific manner.

Way Forward

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- **India presents a unique media market** which reflects the country's diversity. For example, media platforms span multiple languages. Therefore, while the Australian development is of special importance to India, it need not provide an ideal template for the way forward.
 - **Digital platforms** have brought about **huge social gains** by democratising access. However, their **growing size and revenue models have also had adverse effects**, such as spread of fake news. It is this fallout that **governments should try to mitigate, to safeguard democracy.**

Source: IE

Conclusive Land Titling

Why in News

Recently, as many States have failed to send in their feedback on a **Model Bill on Conclusive Land Titling**, the Centre has warned that their agreement would be presumed. The Bill was **prepared by the NITI Aayog.**

The Framework

- **Digital land records** will facilitate switch 
- **Draft legislation** will propose that states move from presumptive to conclusive system
- **Unified legal framework** being finalised to allow govt-backed land ownership 

How will it help?

- **Reduce** land related litigations
- **Farmers** to get easy access to credit
- **Land** acquisition to get easier
- **Real estate** transactions to become more transparent
- **Title holders** to be eligible for compensation from govt

Key Points

- **Land Titling:**

It is the generic term used to describe the **programs implemented by the government** to enable individuals and government to **efficiently trade in rights in land and property.**

Recently, the **Supreme Court** held that a **citizen's right to own private property is a human right.**

- **Current System in India/Presumptive Land Titling:**

- **About:**

India currently follows a system of presumptive land titling. It means that **land records are maintained, with information on possession, which is determined through details of past transactions.**

- **Ownership:**

It is established on the **basis of current possession.**

- **Registration:**

- Registration of land is actually a registration of transactions, such as **sale deeds, records of inheritance, mortgage and lease.**
- Holding registration papers **does not actually involve the government or the legal framework** guaranteeing the ownership title of the land.

- **Conclusive Land Titling:**

- **About:**

Under a conclusive land titling system, **land records designate actual ownership.**

- **Ownership:**

The title is **granted by the government**, which takes the responsibility for accuracy.

- **Dispute Settlement:**

Once a title is granted, any other **claimant will have to settle disputes with the government**, not the title holder.

- **Compensation:**

The **government may provide compensation to claimants in case of disputes**, but the title holder is not in any danger of losing ownership.

- **Need and Benefits of Conclusive Land Titling:**

- **Reduce Litigations:**

The conclusive system will **drastically lower litigation related to land.**

- According to a 2007 **World Bank** study on 'Land Policies for growth and poverty reduction', **land-related disputes** accounted for **two-thirds of all pending court** cases in India.
- A **NITI Aayog** study on strengthening arbitration estimated that **disputes on land or real estate take an average time of 20 years** in the courts to be resolved.

- **Reduced Risk:**

Once conclusive titling is in place, investors who want to purchase land for business activities will be able to do so **without facing the constant risk that their ownership may be questioned** and their entire investment may go to waste.

Right now, because land titles are based on transactions, people have to keep the entire chain of transaction records, and a dispute on any link in that chain **causes ambiguity in ownership.**

- **Reduction in Black Marketing:**

Ambiguity in ownership also results in a **black market for land transactions**, which deprives the government of **taxes.**

- **Speeding up Development:**

- Land disputes and unclear titling also create **hurdles for infrastructure development and housing construction**, leading to costly delays and inefficiency. In cities, urban local bodies depend on property taxes that can be levied properly only if there is clear ownership data available.
- Long-running court cases currently create hurdles for investment in many sectors of the economy.

- **Facilitation of Easy Credit:**

- In rural areas, the need is even more acute. Access to **agricultural credit is dependent on the ability to use land as collateral.**
- Without being able to prove their ownership of land and access formal credit from banks, **small and marginal farmers are often left at the mercy of unscrupulous moneylenders**, entrenching themselves in a mountain of debt.

- **Model Bill on Conclusive Land Titling:**
 - **Power to State Governments:**

It will provide state governments **power to order for establishment, administration and management** of a system of title registration of immovable properties.
 - **Land Authorities:**
 - Land Authorities to be set up by each State government, which will appoint a **Title Registration Officer (TRO)** to prepare and publish a draft list of land titles based on existing records and documents.

This will be considered a valid notice to all potential claimants interested in the property, who will have to file their claims or objections within a set period of time.
 - If disputing claims are received, the TRO will verify all the relevant documents and refer the case to a **Land Dispute Resolution Officer (LDRO)** for resolution.

However, **disputes** which are already **pending in courts cannot be resolved in this way.**
 - Having considered and resolved all the disputed claims, **the Land Authority will publish a Record of Titles.**
 - **Land Titling Appellate Tribunals:**
 - Over a three-year period, these titles and the **decisions of the TRO and the LDRO can be challenged before Land Titling Appellate Tribunals**, which will be set up under the law.
 - After a **three-year period**, entries in the Record of Titles will be considered conclusive proof of ownership.
 - **Special Bench of High Court:**

A special bench of High court shall be designated **to deal with appeals against the orders passed by the Land Titling Appellate Tribunal.**
- **Challenge:**
 - The biggest challenge is that land **records have not been updated** for decades, especially in rural and semi-urban areas.
 - Land records are often in the name of the grandparents of the current owner, with **no proof of inheritance.**
 - Unless they are based on updated records, **conclusive land titles could create even more problems.**

Way Forward

- Comprehensive **village-level surveys with community involvement** are a necessary precursor to the land titling process. Relying on current records or even satellite imagery will not provide the same accuracy as actual, **on-the-ground, local surveys.**

- It is imperative that the country has **an integrated system or repository of land record for urban and rural areas** which comprehensively covers agricultural, infrastructure, residential and industrial land.

Source:TH

Making Peace with Nature: UNEP Report

Why in News

The **United Nations Environment Programme (UNEP)** has released the '**Making Peace with Nature**' report, **ahead of the fifth session of the UN Environment Assembly (UNEA-5)**.

The Report explains how **climate change, biodiversity loss and pollution add up to three self-inflicted planetary emergencies** that are closely interconnected and put the well-being of current and future generations at unacceptable risk.

Key Points

- **Findings:**
 - **Planetary Emergencies:**
 - **Climate Change:** Climate change is **increasing the chances of the Arctic Ocean being ice-free** in summer, further disrupting ocean circulation and Arctic ecosystems.

Climate change **drives changes in wildfires** and water stress and combines with biodiversity loss to **degrade land and enhance drought** in some regions.
 - **Biodiversity Loss:**
 - More than one million of the estimated 8 million plant and animal species are increasingly at risk of extinction.
 - **Coral reefs are particularly vulnerable to climate change** and are projected to decline to 10-30% of their former cover at 1.5°C of warming and to less than 1% at 2°C of warming, compromising food provision, tourism and coastal protection.
 - **Pollution:**
 - Every year, nine million people die prematurely due to pollution.
 - Up to **400 million tons of heavy metals**, solvents, toxic sludge and other industrial wastes enter the world's waters annually.
 - **Widening Inequalities:**
 - Human prosperity is strained by widening inequalities, whereby the **burden of environmental decline weighs heaviest on the poor and vulnerable** and looms even larger over **today's youth and future generations**.
 - **Inequity in economic growth has left 1.3 billion people poor.**
 - **Performance over SDGs:**
 - Current and projected changes in climate, biodiversity loss and pollution make achieving the **Sustainable Development Goals (SDGs)** even more challenging.
 - The current mode of development **degrades the Earth's finite capacity** to sustain human well-being.
 - **Performance over Different Targets:**
 - Society is **failing to meet most of its commitments to limit environmental damage**.
 - Society is not on course to achieve **land degradation neutrality, Aichi Targets** and targets of the **Paris Agreement**.

- **Suggestions:**
 - **Human knowledge, ingenuity, technology and cooperation** can transform societies and economies and secure a sustainable future.
 - Given the interconnected nature of climate change, loss of biodiversity, land degradation, and air and water pollution, it is essential that these problems are **tackled together**.
 - Governments must **scale up and accelerate** action to meet the **Paris Agreement** goals and limit dangerous climate change.
 - **Economic and financial systems** can and must be transformed to lead and power the shift toward sustainability.
 - **Moving to circular economic systems** that reuse resources, reduce emissions and weed out the chemicals and toxins that are causing millions of premature deaths – all while creating jobs.

United Nations Environment Programme

- **About:** The UNEP is a leading global environmental authority established on 5th June 1972.
- **Functions:** It sets the global environmental agenda, promotes the sustainable development within the **United Nations** system, and serves as an authoritative advocate for global environment protection.
- **Major Reports:** **Emission Gap Report**, **Adaptation Gap Report**, **Global Environment Outlook**, Frontiers, Invest into Healthy Planet.
- **Major Campaigns:** Beat Pollution, UN75, World Environment Day, Wild for Life.
- **Headquarters:** Nairobi, Kenya.

United Nations Environment Assembly

- The United Nations Environment Assembly (UNEA) is the **governing body of the UN Environment Programme**.
- It is the world's highest-level decision-making body on the environment.
- It **meets biennially** to set priorities for global environmental policies and develop international environmental law.
- It was **created in June 2012**, during the United Nations Conference on Sustainable Development, also referred to as RIO+20.

Source: DTE

Declining Rainfall in Cherrapunji

Why in News

A recent study that looked at the **rainfall pattern in the past 119 years** found a **decreasing trend at Cherrapunji (Meghalaya) and nearby areas.**

- The village of **Mawsynram in East Khasi Hills district of Meghalaya** has beaten Cherrapunji to become the **wettest place in the world.** Mawsynram receives over 10,000 millimetres of rain in a year.
- Mawsynram is located around **81 km by road from Cherrapunji** however the straight line distance between the two is **15.2 km.**



Key Points

- **Reduction in Rainfall:**
The **annual mean rainfall** for the period **1973–2019** showed **decreasing trends** of about **0.42 mm per decade.**
It was statistically significant along seven stations (**Agartala, Cherrapunji, Guwahati, Kailashahar, Pasighat, Shillong and Silchar**).

- **Reasons:**
 - **Rising Temperature:**

The **changes in the Indian Ocean temperature** have a **huge effect** on the rainfall in the region.

Increasing sea surface temperatures in the tropical Indian Ocean region was pointed out by the **first climate change assessment report** published by the Union Ministry of Earth Sciences in June 2020.
 - **Increased Human Activities:**

The satellite data showed that there was a **reduction in the vegetation area** in northeast India in the past two decades, implying that human influence also plays an important role in the changing rainfall patterns.

 - The traditional way of cultivation known as **Jhum cultivation or shifting cultivation** is now decreased and being replaced by other methods.
 - There is sizable **deforestation** in the region. The study saw the **decrease in vegetation cover and increase in the areas of cropland** mainly from the year 2006 onwards.
 - The analysis showed **reductions in vegetation** with **104.5 sqkm lost per year**.
 - On the other hand, there were **significant increases in cropland** (182.1 sqkm per year) and **urban and built-up lands** (0.3 sqkm per year) during the period 2001–2018.
- **Significance of Studying the North-East Region:**
 - Since north-east India is mostly hilly and is an extension of the Indo-Gangetic Plains, the **region is highly sensitive to changes** in regional and global climate.
 - It has to be noted that the **first signs of the effect of climate change** will be evident for the extreme cases such as the rainfall at Cherrapunji.
 - North-east India has the **highest vegetation cover** in India and includes **18 biodiversity hotspots of the world**, indicating the importance of the region in terms of its greenery and **climate-change sensitivity**.

Reason for High Rainfall in Cherrapunji and Mawsynram

- **Cherrapunji (elevation 1313 m) and Mawsynram (elevation 1401.5 m)** are located on the southern slopes of the east Khasi Hills in Meghalaya.
 - Meghalaya is a mountainous state with **numerous valleys and highland plateaus**.
 - **Elevation** in the plateau region ranges between **150 m to 1,961 m**, with the central part comprising the Khasi Hills with the highest elevations.
- The rainfall in Cherrapunji-Mawsynram is **caused by the orography favouring a monsoon wind regime**.

- The northward moving moist winds from the Bay of Bengal passing over the plains of Bangladesh are **forced to converge in the narrow valleys of the Khasi Hills** with orography providing forced ascent that causes condensation, formation of clouds resulting in rain on the windward side of the slope.

Shifting Cultivation

- Shifting cultivation, locally called 'Jhum', is a widely practiced system of crop cultivation among the indigenous communities of North-east India. The practice, also known as **slash-and-burn agriculture**, is when farmers clear land by slashing vegetation and burning forests and woodlands to create clear land for agricultural purposes.
- This provides a **very easy and very fast method** of the preparation of the land for agriculture.
- The bush and the weeds can be removed easily. The **burning of waste materials provides needed nutrients for the cultivation.**
- It **gives** a family its **food, fodder, fuel, livelihood** and is closely linked to their identity.
- Because of cutting of forests and trees, this practice **leads to soil erosion and may also affect the course of rivers.**

Source:TH

Status of WASH in Healthcare Facilities in India: CDDEP

Why in News

A recent research from **Center for Disease Dynamics, Economics and Policy (CDDEP)**, USA, has estimated the cost of ensuring WASH and taking related steps for infection prevention and control for one year in healthcare facilities across India.

CDDEP aims to use research to support better decision-making in health policy.

WASH

- WASH is an acronym that **stands for the interrelated areas of Water, Sanitation and Hygiene.**
- The **World Health Organisation (WHO) WASH Strategy** has been developed in response to Member State Resolution (WHA 64.4) and the 2030 Agenda for Sustainable Development (SDG 3: Good Health and Well Being, SDG 6: Clean Water And Sanitation).

- It is a **component of WHO's 13th General Programme of Work 2019–2023** which aims to contribute to the health of three billion through multisectoral actions like better emergency preparedness and response; and one billion with **Universal Health Coverage (UHC)**.
- It also takes on board the need for progressive realization of the human rights to safe drinking-water and sanitation, adopted by the **UN General Assembly** in July 2010.

Key Points

- **Need for Study:**
 - **Inadequate Healthcare And Sanitation Facilities:** A 2019 joint global baseline report by WHO and UNICEF had pointed out that globally, one in four healthcare facilities lacked basic water servicing and one in five had no sanitation service and 42% had no hygiene facilities at point of care.
 - **Economic Importance of Sanitation:** A 2012 WHO report had calculated that for every dollar invested in sanitation, there was USD 5.50 to be gained in lower health costs, more productivity and fewer premature deaths.
 - **Fatalities due to Improper Implementation of the WAH Strategy:**
 - A WHO document on WASH in healthcare facilities points out that 8,27,000 people in low- and middle-income countries die as a result of inadequate water, sanitation and hygiene each year.
 - Also, death of 2,97,000 children under five years can be prevented each year if better WASH could be provided.
- **Objectives of the Study:**

To determine the cost-effectiveness of WASH interventions to reduce healthcare-associated infections among mother and neonates across the Indian healthcare system.

- **Findings:**
 - **Cost Estimates:** Improving WASH across the public healthcare facilities in India and maintaining this for a year would cost Rs. 2567 crores approximately in capital costs and Rs. 2095 crores in recurrent expenses.
 - **Costly Interventions:** Providing clean water, linen reprocessing and sanitation.
 - **Least Expensive Interventions:** Hand hygiene, medical device reprocessing and environmental surface cleaning.
 - **Healthcare Associated Infections:**
 - Inadequacies in providing WASH and also lack of infection prevention and control can lead to healthcare associated infections.
 - **Causative Agents:** The pathogens like *Acinetobacter baumannii*, *Enterococcus faecalis*, *Escherichia coli*, *Salmonella typhi*, *Streptococcus pneumoniae* have been found to be causative agents of healthcare associated infections because of their **ability to develop resistance to antibiotics**.
 - **Common Healthcare Associated Infections:** Central-line-associated bloodstream infections, Catheter-associated urinary tract infections, Surgical site infections and Ventilator-associated pneumonia.
- **Importance of the Study:**
 - **Suggests Suitable Strategies:** Findings show that addressing gaps in WASH across the Indian healthcare system is not only within the realm of possibility in terms of affordability – when compared to other national health campaigns – but can also be combined with other national efforts to address health priorities such as **antimicrobial resistance**.

It also highlights the need for a concerted effort from local bodies, State and Central governments to sustainably **address quality and inequality issues in WASH provision**.
 - **Improve Healthcare Policy Framing:** The intersection between WASH, infection prevention and control and antimicrobial resistance is unique in that it offers policy makers an opportunity to address multiple overlapping problems through interventions on WASH in healthcare facilities.

Source:TH

International Mother Language Day

Why in News

Every year, the **United Nations Educational, Scientific and Cultural Organization (UNESCO)** celebrates **21st February as International Mother Language Day** to promote mother tongue-based multilingual education.

- The theme of the 2021 celebrations, “Fostering multilingualism for inclusion in education and society,” recognizes that languages and multilingualism can advance inclusion, and the **Sustainable Development Goals** focus on leaving no one behind.
- The world has over 7,000 languages whereas India alone has about 22 officially recognized languages, 1635 mother tongues, and 234 identifiable mother tongues.

Key Points

- **About the International Mother Language Day:**
 - UNESCO declared 21st February as International Mother Language Day **in 1999** and World has been celebrating the same since 2000. The day **also commemorates a long struggle by Bangladesh to protect its mother language Bangla.**
 - The resolution to mark 21st February as the International Mother Language Day was **suggested by Rafiqul Islam**, a Bangladeshi living in Canada. He proposed the said date to commemorate the **1952 killings in Dhaka during the Bangla Language Movement.**
 - The initiative is aimed at preserving and promoting mother languages. The aim is to protect the diverse culture and intellectual heritage of different regions of the world.
- **Related Data:**
 - According to the United Nations (UN), **every two weeks, a language disappears** and the world loses an entire cultural and intellectual heritage.
 - Due to globalization, the rush for learning foreign languages for better job opportunities is a major reason behind the disappearance of mother languages.
 - At least **43% of the estimated 6000 languages spoken in the world are endangered.**
 - Only a few hundred languages have been genuinely given a place in education systems and public domain. Also, 40% of the global population does not have access to education in a language they speak or understand.
 - **Less than a hundred languages are used in the digital world.**
- **Global Efforts for Protection of Languages:**
 - The UN has designated the period between **2022 and 2032 as the International Decade of Indigenous Languages.**
 - Earlier, the **United Nations General Assembly** had proclaimed 2019 as the International Year of Indigenous Languages (IYIL).
 - The **Yuelu Proclamation, made by UNESCO at Changsha (China)** in 2018, plays a central role in guiding the efforts of countries and regions around the world to protect linguistic resources and diversity.

- **India's Initiatives:**

- The recently announced **National Education Policy 2020** has given maximum attention to the development of mother tongues.
 - The policy recommends that as far as possible, the medium of instruction shall be, at least till class 5, (preferably up to grade 8 and beyond) mother tongue / vernacular / regional language.
 - Instructions in mother tongue empowers students with the subject and language of their choice. It will help in building a truly multilingual society in India, improve attendance and learning outcomes, and the ability to learn new languages.
- **The Commission for Scientific and Technical Terminology (CSTT)** is providing publication grants towards the publications of University Level Books in regional languages.

It was established in 1961 to evolve technical terminology in all Indian Languages.
- The **National Translation Mission (NTM)** is being implemented through the Central Institute of Indian Languages (CIIL), Mysore under which the text books of various subjects prescribed in Universities and Colleges are being translated in all languages of the Eighth Schedule.
- **“Protection and Preservation of Endangered Languages”** scheme for conservation of threatened languages.
- The **University Grants Commission (UGC)** also promotes regional languages in higher education courses in the country and supports nine Central Universities under the scheme “Establishment of Centre for Endangered Languages in Central Universities”.
- Other Initiatives by the Government of India include the **Bharatavani project** and the proposed setting up of a **Bharatiya Bhasha Vishwavidyalaya (BBV)**.

Further, the Vice President has highlighted other areas for the use of local languages, i.e. in administration, court proceedings, higher and technical education, etc.
- Recently, an initiative **Namath Basai** by Kerala State Government has proved to be very beneficial in educating children from tribal areas by adopting vernacular languages as medium of instruction.
- Google's Project **Navlekha** uses technology to protect mother language. The project is aimed at increasing the online content in Indian local languages.

Related Constitutional and Legal Provisions

- **Article 29 of the Constitution (Protection of interests of minorities)** gives all citizens right to conserve their language and prohibits discrimination on the basis of language.

- **Article 120 (Language to be used in Parliament)** provides for use of Hindi or English for transactions of Parliament but gives the right to members of Parliament to express themselves in their mother tongue.
- **Part XVII of the Indian Constitution deals with the official languages in Articles 343 to 351.**
 - **Article 350A (Facilities for instruction in mother-tongue at primary stage)** provides that it shall be the endeavour of every State and of every local authority within the State to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups.
 - **Article 350B (Special Officer for linguistic minorities):** The President should appoint a special officer for linguistic minorities to investigate all matters relating to the constitutional safeguards for linguistic minorities and to report to him. The President should place all such reports before the Parliament and send to the state government concerned.
- **The Eighth Schedule** recognises following 22 languages: Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.
- **Right to Education (RTE) Act, 2009** says that the medium of instruction shall, as far as practicable, be in a child's mother tongue.

Source: PIB

Silver Antimony Telluride: A Material to Tap Waste Heat

Why in News

Scientists at the **Bengaluru-based Jawaharlal Nehru Centre for Advanced Scientific Research**, have found a new material, **Silver Antimony Telluride (AgSbTe₂)**, that can help in tapping waste heat produced by all kinds of domestic and industrial appliances, and use it to accomplish other useful work.

Basically, the material will **exploit the benefits of thermo-electric effect**. The thermo-electric effect **involves the process by which heat is transformed to electrical energy**.

Key Points

- **Background:**

- Traditionally, the **thermo-electric effect has been demonstrated** and utilised **by using two different metals** joined together, and **by mechanically maintaining two different temperatures** at the ends. But **such materials do not offer efficient or economical solutions.**

Further, most materials that conduct electricity, also happen to be good conductors of heat. That means that **there would not be any significant temperature difference between the two ends** of the material for very long.

- To date, the most efficient thermoelectric materials **use lead as a major constituent element**, but lead has very **adverse environmental impacts** such as air pollution and also causes human health issues.

- **About Silver Antimony Telluride:**

- It is a **nanomaterial** compound synthesised from **Silver, Antimony and Tellurium.**

- A crystalline solid, it has free electrons that help in conduction of electricity but its lattices (arrangement of atoms) are rather inflexible, and vibrate quite slowly thereby inhibiting the propagation of heat.

Thus, it is a **good conductor of electricity but a bad conductor of heat**, a property **important for Thermo-electric effect.**

- There are **a variety of potential applications.** Industrial processes and power plants, along with all kinds of domestic appliances, produce ample amounts of waste heat that can be utilised to do significant amounts of work.

The heat from the laptop, for example, can be used to charge a mobile phone. Or, that from the phone can be used to charge a small watch.

- **Challenge:**

The energy conversion is not a very efficient process. Typically, **not more than 15 to 20% of the waste heat can be utilised.**

Source: IE
