DAILY CURRENT AFFAIRS 03-05-2024

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Hangor class submarine

Syllabus: GS-2; International Relations

Context

- *Recently, The first Hangor class submarine,* **built by China for Pakistan**, *was launched at a Wuhan shipyard.*
- *This was the first of eight submarines of this class that the Pakistan Navy is set to induct into its fleet by 2028.*

Basic characteristics

- *The Hangor-class, an export variant of the* **Chinese Type 039A Yuan class**, *is a* **diesel-electric attack submarine**, *named after the now decommissioned PNS Hangor, which famously sank Indian frigate* **INS Khukri** *during the 1971 war.*
- *"Diesel-electric" refers to the mode of propulsion — diesel engines power the submarine when surfaced or snorkelling (as they need air to operate), while a battery, charged by the diesel engine, allows the vessel to operate while submerged.*
- *The Hangor-class boasts four diesel engines. It is also equipped with an* **air independent propulsion (AIP) system,** *which significantly increases the submarines' endurance underwater.*
- *Attack submarines are specifically designed for sinking other submarines or surface vessels using torpedoes, or in modern times, cruise missiles.*
- *The Hangor-class has six 21 inch torpedo tubes, and capabilities to launch anti-ship missiles, as well as the* **Babur-3 subsonic cruise missile**, *which has a range of 450 km.*

Comparison with India's Kalavari class

- *Pakistan's Hangor class is the direct counterpart of India's Kalavari class of submarines, based on the French Scorpene-class.*
- *India currently operates six Kalavari class submarines, with three more set to be inducted into service by the early 2030s.*
- *In terms of size, the* **Hangor class is significantly bigger than the Kalavari class,** *which displaces 1,775 tons and is 67.5 m long.*
- *The Hangor class, on the other hand, has a displacement of 2,800 tons, is 76 m in length, 8.4 m in width (at its widest point), and has a draught (depth of the vessel below the waterline) of 6.2 m when on the surface.*
- *While this probably means that the crew of the Pakistani submarines would lead (slightly) more comfortable lives, in shallow, littoral waters, this is a major drawback, with Kalavari class being much more manoeuvrable.*

- *The Pakistani submarine has a reported top speed of 20 knots (37 kmph), same as its independent counterpart.*
- **The Kalavari class, like the Hangor class, runs on diesel-electric propulsion.**
- *However, the models India currently operates do not come with built-in AIP.*
- *This means that in terms of underwater endurance, the Hangor class potentially has an edge on the Kalavari class.*
- *This matters because submarines' USP is their ability to be stealthy — much of which comes from their capability of remaining underwater for extended periods of time.*
- *Conventional diesel-electric submarines need to surface to recharge their batteries after a few days (2-5, depending on the battery used), making them detectable to enemy radar and exhaust fumes sensors.*
- *An AIP system can increase submarines' underwater endurance manifold (upwards of 15-20 days).*
- *The Indian Navy is currently in the process of installing an indigenously developed AIP system to its Kalavari class submarines.*
- *In terms of armament, the Kalavari class carries six 21 inch, German-made torpedoes, and missile systems such as French Exocet anti-ship missiles, and MICA anti-air missiles.*
- *This is likely superior, and more battle tested than Hangor's armament.*
- *Both submarines do not have vertical launch systems (like the ones in India's nuclear Arihant class), which would allow it to carry bigger cruise missiles like the Brahmos-NG.*
- *Both submarine classes carry state of the art sensor suites, although details of Hangor's capabilities in this regard are not out in public.*

Double Taxation Avoidance Agreement (DTAA)

Syllabus : GS-3; Economy

Context

- *India and Mauritius have signed the protocol amending their Double Taxation Avoidance Agreement (DTAA), which now incorporates the Principal Purpose Test (PPT).*
- *This provision serves as a criterion to determine the eligibility of foreign investors to avail benefits under the India-Mauritius DTAA.*

About

- *A Double Taxation Avoidance Agreement (DTAA) is a bilateral agreement between two countries aimed at eliminating the possibility of double taxation on the same income or financial transaction.*
- *Such agreements are crucial for promoting international trade and investment by ensuring that individuals and businesses do not face excessive tax burdens when conducting cross-border activities.*
- *DTAA typically outlines the rules for allocating taxing rights between the two countries involved, along with mechanisms for resolving disputes and exchanging information to prevent tax evasion.*
- *These agreements provide clarity and certainty for taxpayers, encouraging economic cooperation and facilitating the flow of capital across borders.*

The objective of DTAA

- *In the era of globalization, where investors operate across borders, the objective of Double Taxation Avoidance Agreements (DTAAs) is to prevent the occurrence of double taxation.*
- *Double taxation arises when the same income or profit is taxed by two or more countries, leading to financial disincentives and unfairness.*

Working of DTAA

- *DTAA works by allocating the taxing rights over various types of income between the two contracting states.*
- *It typically provides mechanisms such as tax credits, exemptions, and deductions to ensure that the same income is not taxed twice.*
- *Residents of the contracting states can claim relief from double taxation according to the provisions outlined in the agreement.*

Types of income are covered under DTAA

- *DTAA typically covers various types of income, including but not limited to, income from employment, business profits, dividends, interest, royalties, and capital gains.*
- *The agreement usually specifies the criteria for taxation of each type of income, along with the applicable rates and any exemptions or deductions.*

Taxpayers benefits under DTAA

- *DTAA benefits taxpayers by providing clarity and certainty regarding their tax obligations in international transactions.*
- *It helps avoid situations where the same income is taxed twice, thereby reducing the overall tax burden. Additionally, it promotes cross-border trade and investment by eliminating barriers related to double taxation, thereby fostering economic cooperation between the contracting states.*

Advantage of DTAA for individuals or businesses

- *Individuals or businesses can take advantage of DTAA by ensuring that they meet the eligibility criteria outlined in the agreement.*
- *They should correctly determine their tax residency status and declare their income according to the provisions of the agreement.*
- *Claiming benefits under DTAA often requires proper documentation and compliance with reporting requirements, so seeking guidance from tax advisors or authorities is advisable.*

International Taxation and DTAA

- *DTAAs are bilateral agreements signed between countries to address the issue of double taxation. These agreements ensure that income or profits earned by an investor in one country are not subject to taxation in both the home country and the host country.*

Electronic trading platform

Syllabus: GS-3; RBI, Financial Market

Context

- *Recently,* **The Reserve Bank of India proposed a revised regulatory framework** *for Electronic Trading Platforms (ETPs) in the wake of increased integration of the onshore forex market with offshore markets.*
- *Market makers too have been requesting the Reserve Bank to allow access to offshore ETPs offering Indian Rupee (INR) products.*

About - Electronic Trading Platforms (ETPs)

- *ETP refers to* **any electronic system, other than a recognised stock exchange, on which transactions in eligible instruments are contracted**.
- *Eligible instruments mean securities, money market instruments, foreign exchange instruments, derivatives, or other instruments of like nature.*

More about the news

- *The* **'Draft Master Direction - Reserve Bank of India (Electronic Trading Platforms) Directions, 2024'** *said that an entity seeking authorisation as an ETP operator should maintain a minimum net-worth of Rs 5 crore and continue to maintain the minimum net-worth prescribed all times.*

- *Also, the entity should be a company incorporated in India. Further, shareholding by non-residents, if any, in the entity seeking authorisation as an ETP operator should conform to all applicable laws and regulations, including the* **Foreign Exchange Management Act, 1999.**
- *The entity will also have to maintain robust technology infrastructure with a high degree of* **reliability, availability, scalability and security** *in respect of its systems, data and network, appropriate to support its operations and manage the associated risks, the draft said.*
- *No entity, resident or non-resident, can operate an ETP without obtaining prior authorisation of, or having registered with, the Reserve Bank.*

Significance

- *Under the framework, which aimed to* **ensure fair access through transparent, safe, and efficient trading processes, robust trading infrastructures and prevent market abuse**, *13 ETPs operated by 5 operators have since been authorised.*

Biohacking

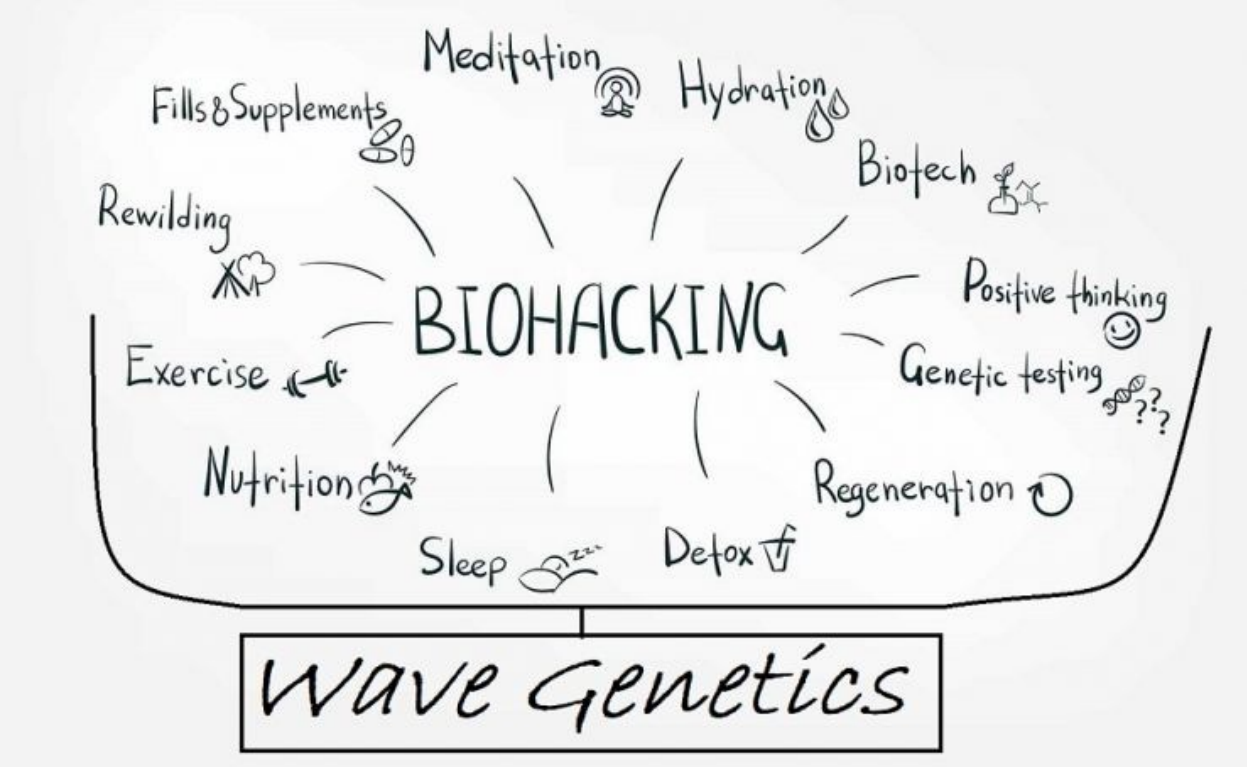
Syllabus: GS-3; Science and Tech

Context

- *Biohacking is picking up in India, with followers trying everything from* **cryotherapy to IV therapy.**

What Is Biohacking?

- *Biohacking is the* **practice of employing methods drawn from fields like biology, genetics, neuroscience and nutrition to enhance physical or mental performance, improve overall health and well-being, or achieve a specific health outcome** *(like weight loss), according to Brea Lofton, a registered dietitian and nutritionist for health and wellness company Lumen.*
- *Sometimes biohacking is also called* **do-it-yourself (DIY) biology.**



What are the different types of biohacking?

- *Biohacking comes in many forms. The three most popular types are nutrigenomics, DIY biology, and grinder.*
- **Nutrigenomics**
  - *Nutrigenomics focuses on* **how the food you eat interacts with your genes.**
  - *This popular, although controversial, type of biohacking is founded on the idea that your body's total genetic expression can be mapped out and optimized by testing how different nutrients affect your healthTrusted Source over time.*
  - *Nutrigenomics also looks at* **how different nutrients affect how you feel, think, and behave.**
- **DIY biology**
  - *DIY biology (or DIY bio) is a type of* **biohacking spearheaded by people with education and experience in scientific fields.**
  - *These biohackers share tips and techniques to help non-experts conduct structured experiments on themselves outside of a controlled experimental environment, like labs or medical offices.*
- **Grinder**
  - *Grinder is a biohacking subculture that sees every part of the* **human body as hack-able.**

- *In general, grinders seek to become "cyborgs" by optimizing their bodies with a* **combination of gadgets, chemical injections, implants,** *and anything else they can put into their body to make it work the way they want it to.*

How does biohacking work?

- *decreasing your risk of developing a disease that you're genetically predisposed to*
- *helping you achieve physical, mental, or emotional changes, such as losing weight or reducing depression symptoms*
- *helping optimize a bodily function, such as your blood pressure or gut bacteria*

What's the difference between biohacking and biotechnology?

- *Biotechnology is a broad term referring to the* **study of biological processes to inform technological advancement.** *Biotechnology can range from using bacterial strains for brewing beer to editing genes using CRISPR.*
- *Advances or learnings in biotechnology often affect experiments in biohacking, and vice versa.*
- *For example, many biohackers use breakthroughs in biotechnology for ideas and data. Biotechnologists also look to experiments done by biohackers to inform directions in biotechnology research.*
- *Grinders tend to be the most active users of biotechnology for biohacking purposes. But habit or diet changes don't require biotechnology.*

Analysing labour on a warming planet

Syllabus: GS-3: Climate Change and its impact.

Context:

- *The International Labour Organization's (ILO) latest report, 'Ensuring safety and health at work in a changing climate', is an urgent call to ensure the future of labour is climate proofed and to address the constantly evolving work environment as the planet warms.*

Major findings of the report:

- *The* **International Labour Organization** *(ILO) released a report titled 'Ensuring safety and health at work in a changing climate'.*

- *The report emphasizes the importance of* **adapting labour practices to climate change**.
- *It highlights that* **over a third of the global population faces excessive heat annually**, *resulting in around 23 million work-related injuries.*
- *The ILO suggests revamping existing* **Occupational Safety and Health-related** *(OSH) protections and laws due to their inability to keep pace with climate change-induced risks.*
- *The goal is to* **prevent worker deaths and injuries** *caused by the changing climate.*

What are the emerging hazards?

- **Excessive heat:** *Exposure to high temperatures, leading to health issues like stress, stroke, and exhaustion.*
- **Solar ultraviolet radiation:** *Radiation from the sun posing risks to outdoor workers.*
- **Extreme weather events:** *Events such as hurricanes, floods, and storms affecting workplace safety.*
- **Workplace air pollution***: Pollution in work environments impacting respiratory health.*
- **Vector-borne diseases***: Diseases transmitted by insects, affecting workers in various sectors.*
- **Agrochemicals:** *Chemicals used in agriculture posing health risks to workers.*

Which sectors are affected?

- **Most affected workers***: Agriculture workers, construction sector workers, conservancy workers, transport and tourism employees.*
- **Impact on gig workers***: Gig employment, such as ride-hailing drivers, delivery workers, and home repair professionals, is highly susceptible to heat-related hazards.*
- **Growth of gig employment***: Gig workers in India constitute about 1.5% of the total workforce, projected to reach 4.5% by 2030.*
- **Susceptibility in India:** *Approximately 80% of India's 2023 workforce of 600 million is vulnerable to heat-related hazards, surpassing the entire current population of South America.*
- **Agriculture:** *Highly susceptible globally, particularly in the developing world where informal farm laborers work with little to no weather protection.*
- **Approximately 45.76% of India's total workforce** *was engaged in agriculture and allied sectors in 2022-23, down from about 20% three decades ago.*
- *Nearly 90% of Indian farmers* **own less than two hectares of land**, *facing financial challenges with many in debt and lacking access to modern agricultural technology.*
- *Many communities have adjusted work timings to early mornings and late evenings to cope with heat, with recommendations for more hydration points, breaks, and rest shelters.*

- **Micro, Small, and Medium Enterprises (MSMEs):** *Employ about 21% of India's workforce, with over 123 million workers.*
- *Despite significant contributions to exports and manufacturing output, the sector faces challenges due to overwhelming informalization, leading to little oversight of worker conditions by* **Occupational Safety and Health (OSH) departments**.
- **Building and Construction:** *Constitutes about 12% of India's workforce, with approximately 70 million workers.*
- *Workers face challenges related to the urban heat island effect, particularly in highly urbanized areas where construction is prevalent.*
- *Construction workers are prone to physical injuries and health hazards related to air pollution, with several Indian cities ranking among the most polluted globally.*

What laws address workplace safety?

- **Factories Act, 1948:** *Regulates working conditions in factories, defining a factory as an enterprise with "10 or more" workers.*
- **Workmen Compensation Act, 1923:** *Provides for compensation to workers for injuries suffered during the course of employment.*
- **Building and Other Construction Workers Act, 1996***: Addresses safety and welfare provisions for workers in the construction sector.*
- **Plantations Labour Act, 1951:** *Governs working conditions in plantations.*
- **Mines Act, 1952:** *Regulates working conditions in mines.*
- **Inter-State Migrant Workmen Act, 1979***: Addresses the employment and working conditions of inter-state migrant workers.*
- **Occupational Safety, Health and Working Conditions Code, 2020** *(OSH Code, 2020): Consolidates and amends various labor laws related to occupational safety and health. Includes provisions from multiple central laws.*
- **Challenges:** *Many MSMEs (Micro, Small, and Medium Enterprises) are not registered under these laws, leaving them outside the scope of governmental inspections and regulatory oversight.*
- **Criticism:** *Some unions criticize the new OSH Code, 2020, for potentially diluting safety and inspection standards.*
- **Enforcement:** *The Union government has not officially notified the enforcement of the OSH Code, 2020, leading to continued reliance on older laws by unions and the judiciary for seeking redress and accountability.*

What do they say about heat hazards?

- **Regulations:** *The Factories Act broadly defines "ventilation and temperature" standards, with States having discretion to set specific standards for different industries.*
- **Existing Rules:** *Rules set decades ago mention maximum wet bulb temperatures and air movement requirements but lack details on thermal comfort based on activity level or provision of air conditioning.*
- **Need for Update:** *With air conditioning still a luxury in many parts of the developing world, including India, there's a need to update regulations to incorporate technological advancements and address evolving production processes.*
- **International Standards:** *Countries like Brazil have regulations specifying work stoppage thresholds based on Wet Bulb Global Temperature (WBGT) for different intensity levels of work.*
- **Worker Concerns:** *Instances like those at the BMW assembly plant highlight worker demands for better hydration options and heat coping measures, which are sometimes dismissed by management.*
- **Diverse Needs:** *Different assembly lines within the same unit may require unique heat coping measures due to factors like toxic fumes in certain areas prohibiting air conditioning.*
- **Corporate Response:** *Some companies provide cold beverages and electrolytes at first aid centers, but responses to inquiries about heat hazards from corporate communication departments may be limited.*
- **Pressure on Unions:** *Unions may face pressure from both management and government bureaucracies regarding their advocacy for worker safety, with accusations of discouraging multinational corporations from expanding operations.*

What about other climate hazards?

- **Weak Implementation:** *Despite attempts to address climate hazards in the OSH 2020 Code, concerns exist regarding its enforcement, particularly with a clause allowing online safety inspections, potentially compromising oversight.*
- **Corruption Allegations:** *Allegations of corruption within OSH departments and bribery of inspectors raise concerns about the effectiveness of digital inspections, which could further weaken oversight.*
- **Amendments Needed:** *Amendments are required to address effluent handling and byproduct disposal, considering their potential health impacts based on temperature.*
- **Case Example:** *Hindustan Unilever's thermometer manufacturing plant in Kodaikanal was shut down in 2001 for disposing mercury-laced waste, leading to serious health issues in the community.*
- **Legal Challenges:** *The case against Unilever highlights challenges in seeking redress under existing laws, such as the Workmen's Compensation Act, 1923, which may be*

insufficient for addressing collective grievances related to institutional negligence or failure to provide thermal comfort in manufacturing units.

- **Need for Collective Redress***: Current laws may not adequately address issues like illness or loss of wages due to reduced productivity resulting from inadequate thermal comfort, highlighting the need for legal reforms to enable collective redress by workers.*

The threat of silicosis:

- **Silicosis:** *A fatal and incurable pulmonary disease caused by exposure to fine particulate matter, commonly referred to as "lung dust," found in coal mines, gem mines (like quartz and diamonds), and stone quarries.*
- **Rising Threat:** *India is expected to see a surge in silicosis cases due to increased coal production and expansion of mines to meet growing power demand.*
- **Legal Case:** *In 2016, the Supreme Court ordered the Gujarat government to compensate the families of 238 victims who died of silicosis while working at a quartz mine in Godhra, highlighting the negligence of bureaucracy in protecting migrant laborers.*
- **Vulnerabilities:** *The case brought attention to the plight of poor migrant laborers who undertake dangerous work underpaid and without adequate protection.*
- **Legal Perspective:** *Senior Advocate Colin Gonsalves, who argued the case, emphasizes the need for stricter enforcement of regulations, such as those outlined in the Factories Act, to ensure worker safety and prevent such tragedies.*
- **Government Oversight:** *Questions are raised about the oversight of government inspectors regarding the lack of dust elimination technology in coal mines, leading to workers' exposure to silica dust.*
- **Compensation Concerns:** *The awarded compensation of ₹3 lakh per family is deemed inadequate considering the loss of the primary breadwinner and the severity of the disease, highlighting the need for more substantial support for affected families.*

Lack of enforcement of laws:

- **Enforcement Issues:** *Inspectors under the Factories Act are responsible for ensuring the implementation of measures to protect employees from silica exposure, but vacancies and lack of training hinder their effectiveness.*
- **Technological Gap:** *Rules under the Factories Act in states like Tamil Nadu and Maharashtra do not mandate the use of silica removal technologies in stone quarries or mines, reflecting a gap in regulations.*
- **Challenges in Oversight:** *Concerns are raised about the influence of private sector management, particularly multinational corporations, on state bureaucrats, potentially affecting inspector competence and enforcement efforts.*

- **Response from Officials:** *While a retired official from Tamil Nadu's Directorate of Industrial Safety and Health denies claims of incompetence and unfilled job posts, he acknowledges the need for regulatory changes and departmental sensitization to address climate-related concerns.*
- **Working Conditions:** *Climate change raises concerns about working conditions, especially in industries like construction where work is often done outdoors. Suggestions include adjusting working hours and providing better hydration and cooling foods.*
- **Overlooked Link:** *The link between labor productivity, human health, and climate change often receives less attention compared to economic and infrastructure resilience.*
- **Need for Regulatory Framework:** *The ILO report emphasizes the importance of establishing a universally accepted regulatory framework to climate-proof work and protect workers' health.*