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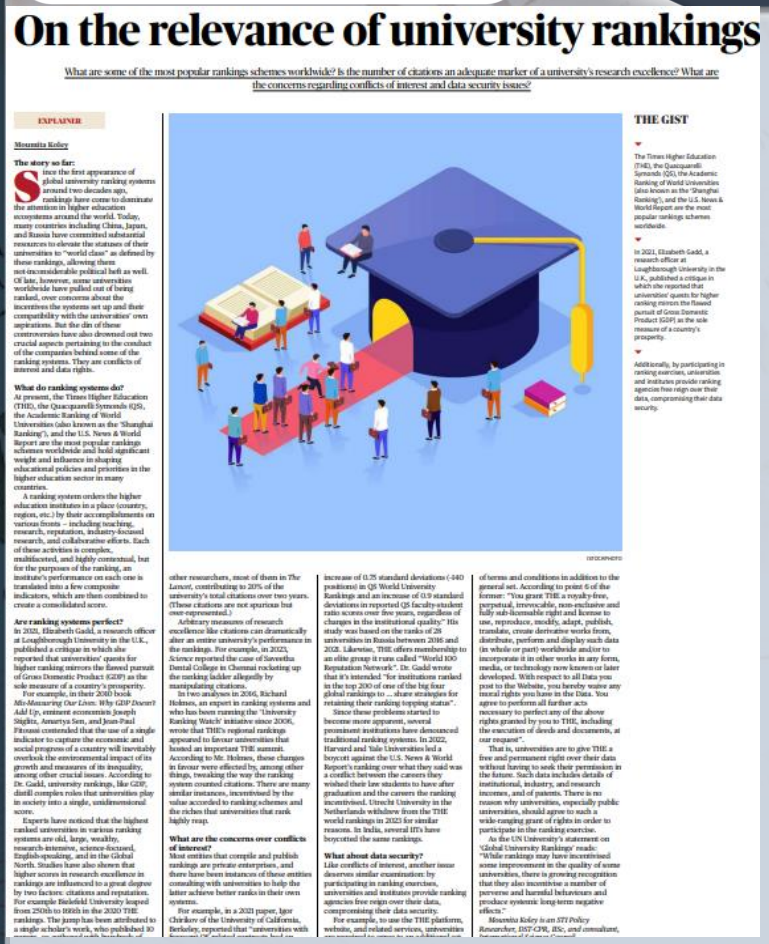
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THE HINDU

Page 8

GLOBAL UNIVERSITY RANKING SYSTEMS

(Syllabus: GS Paper 2 – Social Issues)



On the relevance of university rankings

What are some of the most popular rankings schemes worldwide? Is the number of citations an adequate marker of a university's research excellence? What are the concerns regarding conflicts of interest and data security issues?

EXPLAINER

Moumita Koley

The story so far:

Since the first appearance of global university ranking systems around two decades ago, rankings have come to dominate the attention in higher education ecosystems around the world. Today, many countries including China, Japan, and Russia have committed substantial resources to elevate the statuses of their universities to "world class" as defined by these rankings, allowing them not-inconsiderable political heft as well. Of late, however, some universities worldwide have pulled out of being ranked, over concerns about the incentives the systems set up and their compatibility with the universities' own aspirations. But the clan of these controversies have also drowned out two crucial aspects pertaining to the conduct of the companies behind some of the ranking systems. They are conflicts of interest and data rights.

What do ranking systems do?

At present, the Times Higher Education (THE), the Quacquarelli Symonds (QS), the Academic Ranking of World Universities (also known as the "Shanghai Ranking"), and the U.S. News & World Report are the most popular rankings schemes worldwide and hold significant weight and influence in shaping educational policies and priorities in the higher education sector in many countries.

A ranking system orders the higher education institutes in a place (country, region, etc.) by their accomplishments on various fronts – including teaching, research, reputation, industry-focused research, and collaborative efforts. Each of these activities is complex, multifaceted, and highly contextual, but for the purposes of the ranking, an institute's performance on each one is translated into a few composite indicators, which are then combined to create a consolidated score.

Are ranking systems perfect?

In 2021, Elizabeth Gadd, a research officer at Loughborough University in the U.K., published a critique in which she reported that universities' quests for higher ranking mirrors the flawed pursuit of Gross Domestic Product (GDP) as the sole measure of a country's prosperity.

For example, in their 2010 book *Mis-Measuring Our Lives: Why GDP Doesn't Add Up*, eminent economists Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi contended that the use of a single indicator to capture the economic and social progress of a country will inevitably overlook the environmental impact of its growth and measures of its inequality, among other crucial issues. According to Dr. Gadd, university rankings, like GDP, distill complex roles that universities play in society into a single, unidimensional score.

Experts have noticed that the highest ranked universities in various ranking systems are old, large, wealthy, research-intensive, science-focused, English-speaking, and in the Global North. Studies have also shown that higher scores in research excellence in rankings are influenced to a great degree by two factors: citations and reputation. For example Bielefeld University leaped from 250th to 86th in the 2020 THE rankings. The jump has been attributed to a single scholar's work, who published 10 papers ... co-authored with hyperlinked ... other researchers, most of them in *The Lancet*, contributing to 20% of the university's total citations over two years. (These citations are not spurious but over-represented.)

Arbitrary measures of research excellence like citations can dramatically alter an entire university's performance in the rankings. For example, in 2022, *Science* reported the case of Saveetha Dental College in Chennai rocketing up the ranking ladder allegedly by manipulating citations.

In two analyses in 2016, Richard Holmes, an expert in ranking systems and who has been running the 'University Ranking Watch' initiative since 2006, wrote that THE's regional rankings appeared to favour universities that hosted an important THE summit. According to Mr. Holmes, these changes in favour were effected by, among other things, tweaking the way the ranking system counted citations. There are many similar instances, incentivised by the value accorded to ranking schemes and the riches that universities that rank highly reap.

What are the concerns over conflicts of interest?

Most entities that compile and publish rankings are private enterprises, and there have been instances of these entities consulting with universities to help the latter achieve better ranks in their own systems.

For example, in a 2021 paper, Igor Chirikov of the University of California, Berkeley, reported that "universities with ... increase of 0.25 standard deviations (~440 positions) in QS World University Rankings and an increase of 0.9 standard deviations in reported QS faculty-student ratio scores over five years, regardless of changes in the institutional quality." His study was based on the ranks of 28 universities in Russia between 2016 and 2021. Likewise, THE offers membership to an elite group it runs called "World 100 Reputation Network". Dr. Gadd wrote that it's intended "for institutions ranked in the top 200 of one of the big four global rankings to ... share strategies for retaining their ranking topping status".

Since these problems started to become more apparent, several prominent institutions have denounced traditional ranking systems. In 2022, Harvard and Yale Universities led a boycott against the U.S. News & World Report's ranking over what they said was a conflict between the careers they wished their law students to have after graduation and the careers the ranking incentivised. Utrecht University in the Netherlands withdrew from the THE world rankings in 2023 for similar reasons. In India, several IITs have boycotted the same rankings.

What about data security?

Like conflicts of interest, another issue deserves similar examination: by participating in ranking exercises, universities and institutes provide ranking agencies free reign over their data, compromising their data security.

For example, to use the THE platform, website, and related services, universities ... of terms and conditions in addition to the general set. According to point 6 of the former: "You grant THE a royalty-free, perpetual, irrevocable, non-exclusive and fully sub-licensable right and license to use, reproduce, modify, adapt, publish, translate, create derivative works from, distribute, perform and display such data (in whole or part) worldwide and/or to incorporate it in other works in any form, media, or technology now known or later developed. With respect to all Data you post to the Website, you hereby waive any moral rights you have in the Data. You agree to perform all further acts necessary to perfect any of the above rights granted by you to THE, including the execution of deeds and documents, at our request".

That is, universities are to give THE a free and permanent right over their data without having to seek their permission in the future. Such data includes details of institutional, industry, and research incomes, and of patents. There is no reason why universities, especially public universities, should agree to such a wide-ranging grant of rights in order to participate in the ranking exercise.

As the UN University's statement on 'Global University Rankings' reads: "While rankings may have incentivised some improvement in the quality of some universities, there is growing recognition that they also incentivise a number of perverse and harmful behaviours and produce systemic long-term negative effects."

Moumita Koley is an STI Policy Researcher, DST-CPR, IISc, and consultant, ...

THE GIST

The Times Higher Education (THE), the Quacquarelli Symonds (QS), the Academic Ranking of World Universities (also known as the 'Shanghai Ranking'), and the U.S. News & World Report are the most popular rankings schemes worldwide.

In 2021, Elizabeth Gadd, a research officer at Loughborough University in the U.K., published a critique in which she reported that universities' quests for higher ranking mirrors the flawed pursuit of Gross Domestic Product (GDP) as the sole measure of a country's prosperity.

Additionally, by participating in ranking exercises, universities and institutes provide ranking agencies free reign over their data, compromising their data security.

Context: Since the first appearance of global university ranking systems around two decades ago, rankings have come to dominate the attention in higher education ecosystems around the world.

Global University Ranking Systems

- **About:** It began around one and a half decades ago to discern characteristics of superior higher education institutions.
- **Purpose**: Ranking systems aim to order higher education institutes based on various criteria including teaching, research, reputation, industry-focused research, and collaborative efforts.
- **Three major global university ranking systems**: the Academic Ranking of World Universities (ARWU), the (QSWUR) and the (THEWUR).
- **Complexity of Ranking Criteria**: The performance of institutes is evaluated on complex, multifaceted activities which are translated into composite indicators for ranking purposes.
- **Elizabeth Gadd's Critique (2021)**: Elizabeth Gadd, a research officer at Loughborough University, criticized university ranking systems, likening the pursuit of higher rankings to the flawed reliance on GDP as the sole indicator of a country's prosperity.
- **Critique of Ranking Systems**: These systems face criticism similar to GDP as a sole measure of prosperity, with concerns about oversimplification and overlooking crucial aspects like environmental impact and inequality.
- **Influence of Ranking Factors**: Factors like citations and reputation heavily influence research excellence scores, leading to skewed representations and the dominance of certain institutions.
- **Impact of Arbitrary Measures**: Arbitrary measures like citations can dramatically alter university rankings and may even lead to manipulation, as observed in cases such as Saveetha Dental College.
- **Concerns of Bias and Manipulation**: Instances of bias and manipulation have been observed in ranking systems, including favoritism towards universities hosting ranking summits and adjustments in citation counting methods.

INDIAN EXPRESS

Page 19

GREY ZONE WARFARE
(Syllabus GS Paper 3 – Security)

GREY ZONE WARFARE

The term was recently used by Chief of Defence Staff General Anil Chauhan at the Raisina Dialogue

RISHIKA SINGH
NEW DELHI, MARCH 3

ON THE last day of the 2024 Raisina Dialogue (on February 24), India's Chief of Defence Staff General Anil Chauhan said "grey-zone warfare" was the latest in informal warfare.

During a discussion titled 'The New Wars: Policies, Practices, and Preparation', he gave an example of the situation in the South China Sea, where several countries have extended competing territorial claims, and where occasional confrontations involving small boats have been reported.

In commentaries on China and Taiwan too, the term crops up in descriptions of Chinese actions around the island that it claims as its own.

What is grey zone warfare?

Grey zone warfare generally means a middle space between the black and white of direct conflict and peace.

A blog from the thinktank Atlantic Council quotes Clementine G Starling, a resident fellow in the Transatlantic Security Initiative, as saying, "A multitude of activities fall into this murky in-between — from nefarious economic activities, influence operations and cyberattacks to mercenary operations, assassinations, and disinformation campaigns."

Other experts include economic actions too, such as debt traps and economic sanctions.

Tactics of grey zone warfare became more popular during the Cold War, the phase of intense US-USSR rivalry for ideological and economic dominance after the Second World War in 1945. Since both powers were nuclear-armed, direct conflict could not be risked.

Experts told the thinktank that such methods can also be employed by parties who have not had access to massive resources or power traditionally. Such tactics, thus, can help them gain an advantage over a technically superior adversary more used to conventional warfare.

What can it look like?

Experts from the US and Europe have characterised certain Russian and Chinese actions of late as examples of grey zone warfare.



Taiwan's Lion Islet, with China's Xiamen in the background. China's actions around Taiwan have been termed grey zone warfare. *Reuters*

This includes the Chinese military's presence in the South China Sea. The Philippines is one of the countries which has challenged China's territorial claims extending to over 80 per cent of the region. In December 2023, it termed the presence of more than 135 Chinese maritime militia vessels near a disputed reef as "illegal". It accused China of firing water cannons at its boats and ramming into others, while the Chinese coast guard blamed the Philippines for hitting Chinese boats.

Another example can be found in a recent *Reuters* report, which said, "Taiwan has complained for four years of stepped-up Chinese military action, such as fighters regularly flying over the strait as part of a 'grey zone' strategy to wear down Taiwan with activities that stop short of a full-blown conflict."

In a paper from the foreign policy research institute Pacific Forum, titled 'The Gray Zone Issue: Implications for US-China Relations', a researcher argued that the US has also engaged in similar tactics. These include its economic sanctions against China and imposition of duties on Chinese imports to the US, along with maritime reconnaissance.

What risks does it pose?

A country could be indulging in grey zone warfare only as bait, getting its rival to react in a way that then legitimises military reprisal from its side.

Context: India's Chief of Defence Staff General Anil Chauhan recently emphasized that "grey zone warfare" represents the latest trend in informal warfare during the Raisina Dialogue.

Grey Zone Warfare

- **About**: Grey zone warfare encompasses activities that blur the lines between direct conflict and peace in international relations.
  - It includes a spectrum of actions such as economic subversion, cyberattacks, and disinformation campaigns.
- **Examples of Grey Zone Tactics**: Recent actions by Russia and China have been identified as instances of grey zone warfare.
  - Chinese military presence in the South China Sea exemplifies this concept, especially concerning territorial disputes with countries like the Philippines.
- **The South China Sea Dispute**: The Philippines has contested China's claims in the South China Sea, particularly over disputed reefs.
  - China's presence, including maritime militia vessels, has sparked tensions and accusations of illegal activities.

Why Grey Zone Warfare is Distinct?

- Grey zone tactics pose unique challenges compared to overt conflict.
- Actions are often covert or indirect, necessitating nuanced responses from affected nations.
- Tactics may be aimed at baiting adversaries into escalation or normalizing disputed claims through repeated presence in contested regions.

BUSINESS STANDARD

Page 1

NFRA to engage with companies for better insights

To refer the matter to regulator if lapses found

RUCHIKA CHITRAVANSHI
New Delhi, 3 March

The National Financial Reporting Authority (NFRA) has decided to directly engage with companies, not just auditors, in cases where it finds issues with financial statements, Chairman Ajay Bhushan Pandey told *Business Standard*.

The authority's mandate is to inspect auditors. However, in certain cases, NFRA officials will engage with chief financial officers and audit committees to get a comprehensive understanding of the issues. If any lapses are found, the NFRA will refer the matter to the appropriate regulator.

"The NFRA's mandate is to enforce accounting standards. Dialogue with audit committees and independent directors will help the inspection process and get their input, and not just the auditor's version of things. After all, company is the issuer of financial statements," Pandey said. He said it was necessary to understand the communication between auditors and firms.

In an earlier interview with *Business Standard*, the NFRA chairman had highlighted the significance of effective two-way communication between those charged with governance (TCWG) and auditors. "The audit committee and independent directors should ask auditors the right set of questions instead of simply accepting what they say. Auditors should display professional scepticism. This kind of robust interaction between the auditors and TCWG will enhance the confidence of stakeholders and shareholders in the financial statements accounts of the corporate sector," he had said.

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ILLUSTRATION: AJAY MOHANTY

"DIALOGUE WITH AUDIT COMMITTEES AND INDEPENDENT DIRECTORS WILL HELP THE INSPECTION PROCESS TO GET THEIR INPUT AND NOT JUST THE AUDITOR'S VERSION OF THINGS. AFTER ALL, COMPANY IS THE ISSUER OF FINANCIAL STATEMENTS"

AJAY BHUSHAN PANDEY
Chairman, NFRA

NFRA

(Syllabus: GS Paper 3 – Economy)

Context: The National Financial Reporting Authority (NFRA) has decided to directly engage with companies, not just auditors, in cases where it finds issues with financial statements.

National Financial Reporting Authority (NFRA)

- **About:** NFRA has actively collaborated with the Corporate Data Management (CDM) division of the Ministry of Corporate Affairs (MCA) and three recognized stock exchanges in India.
- **Headquarters**: New Delhi
- **Constitution:** NFRA was established in 2018 by the Government of India under section 132(1) of the Companies Act, 2013, serving as an audit regulator.
- **Background and Establishment**: The decision to form NFRA was prompted by concerns over the role of auditors and the Institute of Chartered Accountants of India in various corporate scandals, including the one at Punjab National Bank.
- **Composition**: NFRA comprises a chairperson, appointed by the Central Government, who must be a person of eminence and possess expertise in accountancy, auditing, finance, or law. Additionally, it includes up to 15 other members.
- **Functions and Duties**
  - **Policy Recommendations**: NFRA recommends accounting and auditing policies and standards for approval by the Central Government.
  - **Compliance Monitoring**: It monitors and enforces compliance with accounting and auditing standards.
  - **Quality Oversight**: NFRA oversees the quality of service of professions associated with ensuring compliance and suggests measures for improvement.
  - **Public Interest Protection**: One of its primary roles is to protect the public interest in financial matters.
- **Powers of NFRA**
  - **Investigation Scope**: NFRA can investigate Public Interest Entities, including listed companies, large unlisted public companies, insurance companies, banking companies, and those engaged in electricity generation or supply.
  - **Penalty Imposition**: In cases of professional misconduct, NFRA has the power to impose penalties ranging from one lakh rupees to five times the fees received for individuals and ten lakh rupees to ten times the fees received for firms.

BUSINESS LINE Mar 3

PRP ACT 2023
(Syllabus: GS Paper 2 – Governance)

New PRP Act 2023 comes into effect, registration of periodicals goes online

Context: The registration of newspapers and other periodicals will be governed by the provisions of the **Press and Registration of Periodicals Act, 2023**, and its Rules, which came into effect recently.

Press and Registration of Periodicals Act, 2023

- **Registration of Periodicals**: The Act provides for the registration of newspapers, periodicals, and books.
  - It **provides for the registration of periodicals,** which include any publication containing public news or comments on public news. Periodicals do **not include books or scientific and academic journals**.
- **Replace to:** Press and Registration of Books Act 1867.
- **Foreign Periodicals**: An exact reproduction of a foreign periodical may be printed in India only with the prior approval of the central government.
- **Press Registrar General**: The Act provides for the central government to appoint a Press Registrar who maintains a register of newspapers.
- **Registration of a Printing Press:** The Act requires a **printing press to be declared before the DM.**
- **Suspension and Cancellation of Registration**: The act allows the Press Registrar General to suspend a periodical's registration for a minimum period of 30 days which can extend to 180 days.
- **The registration may be suspended due to**: (i) registration obtained by furnishing false information, (ii) failure to publish periodicals continuously, and (iii) giving false particulars in annual statements.
- **The Press Registrar General may cancel the registration** (i) a periodical has the same or similar title as any other periodical,
  - (ii) the owner/ publisher has been convicted of a terrorist act or unlawful activity, or for acting against the security of the state.
- **Penalties and appeal:** (i) publishing periodicals without registration (up to five lakh rupees), (ii) failing to furnish annual statement within the specified time (up to Rs 20,000 on first default).

Press Sewa Portal

- **About:** The Act introduces the Press Sewa Portal, an online platform for the registration of newspapers and periodicals across India.
- **Registration Processes**: The Press Sewa Portal replaces manual, multi-step processes, aiming to alleviate hardships faced by publishers due to bureaucratic procedures.
- **Functions**: The portal facilitates various functions such as obtaining registration certificates, transferring ownership, and submitting annual statements, enhancing efficiency and accessibility for publishers.

ALL INDIA RADIO

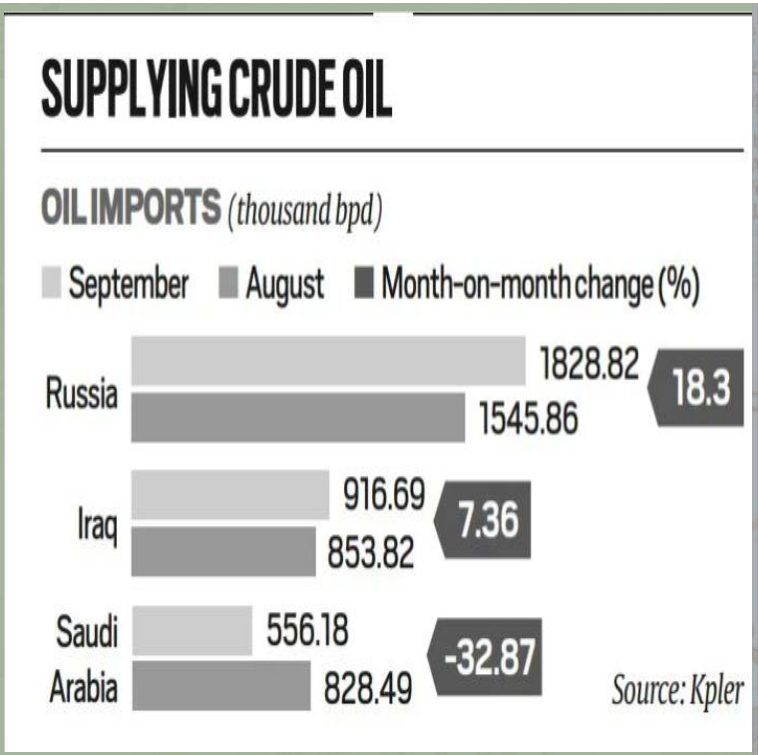
Mar 3

OPEC-PLUS

(Syllabus: GS Paper 2 – IR)

OPEC - Plus members decide to extend oil output cuts of 2.2 million barrels per day to 2nd quarter

Context: Members of the coalition of the world's top oil-producing nations, OPEC - Plus have agreed to extend voluntary oil output cuts of 2.2 million barrels per day into the second quarter.



OPEC-PLUS

- **About**: It is a group of 22 oil-exporting countries which meets regularly to decide how much crude oil to sell on the world market.
- **Aim**: To work together on adjusting crude oil production to bring stability to the oil market.
- At the **core of this group are the 12 members of OPEC** (the Organization of the Oil Exporting Countries), which are mainly Middle Eastern and African countries.
- **Members**: 12 members of OPEC (Saudi Arabia, the UAE, Iran, Iraq, Kuwait, Algeria, Equatorial Guinea, Gabon, Libya, Nigeria, the Republic of the Congo, and Venezuela) and 10 other oil-producing countries (Russia, Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, South Sudan and Sudan).
- **Russia, a major oil producer surpassing** even Saudi Arabia, holds a pivotal position alongside OPEC in shaping worldwide crude oil price trends.

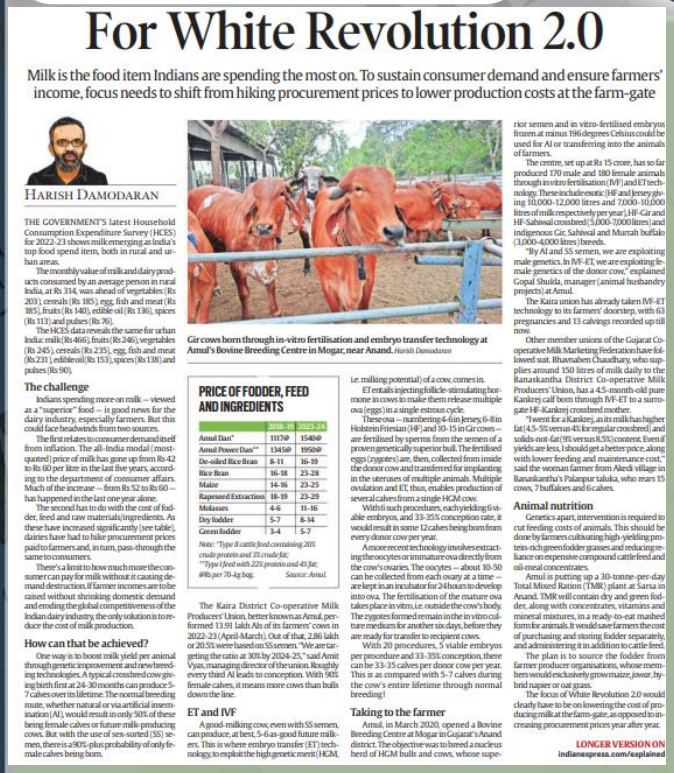
OPEC

- **About**: It is a permanent, intergovernmental organization of 12 countries, created at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. Angola decided to left the grouping in Dec 2023, effective from Jan 2024.
- **Headquarter**: Vienna, Austria.
- **Aim**: To regulate oil supply with the aim of stabilizing the global oil price, thus preventing volatility that could negatively impact the economies of both oil-producing and oil-importing nations.

INDIAN EXPRESS Page 19

WHITE REVOLUTION

(Syllabus: GS Paper 3 – Economy)



For White Revolution 2.0

Milk is the food item Indians are spending the most on. To sustain consumer demand and ensure farmers' income, focus needs to shift from hiking procurement prices to lower production costs at the farm-gate

HARISH DAMODARAN

THE GOVERNMENT'S latest Household Consumption Expenditure Survey (HCES) for 2022-23 shows milk emerging as India's top food spend item, both in rural and urban areas.

The monthly value of milk and dairy products consumed by an average person in rural India, at Rs 314, was ahead of vegetables (Rs 203); cereals (Rs 185), egg, fish and meat (Rs 185), fruits (Rs 140), edible oil (Rs 136), spices (Rs 113) and pulses (Rs 76).

The HCES data reveals the same for urban India: milk (Rs 466), fruits (Rs 246), vegetables (Rs 245), cereals (Rs 235), egg, fish and meat (Rs 231), edible oil (Rs 153), spices (Rs 138) and pulses (Rs 90).

The challenge

Indians spending more on milk — viewed as a "superior" food — is good news for the dairy industry, especially farmers. But this could face headwinds from two sources.

The first relates to consumer demand itself from inflation. The all-India modal (most-quoted) price of milk has gone up from Rs 42 to Rs 60 per litre in the last five years, according to the department of consumer affairs. Much of the increase — from Rs 52 to Rs 60 — has happened in the last one year alone.

The second has to do with the cost of fodder, feed and raw materials/ingredients. As these have increased significantly (see table), dairies have had to hike procurement prices paid to farmers and, in turn, pass-through the same to consumers.

There's a limit to how much more the consumer can pay for milk without it causing demand destruction. If farmer incomes are to be raised without shrinking domestic demand and eroding the global competitiveness of the Indian dairy industry, the only solution is to reduce the cost of milk production.

How can that be achieved?

One way is to boost milk yield per animal through genetic improvement and new breeding technologies. A typical crossbred cow giving birth first at 24-30 months can produce 5-7 calves over its lifetime. The normal breeding route, whether natural or via artificial insemination (AI), would result in only 50% of these being female calves or future milk-producing cows. But with the use of sex-sorted (SS) semen, there is a 90%-plus probability of only female calves being born.

Gir cows born through in-vitro fertilisation and embryo transfer technology at Amul's Bovine Breeding Centre in Mogar, near Anand. *Harish Damodaran*

PRICE OF FODDER, FEED AND INGREDIENTS

	2018-19	2023-24
Amul Dan*	1117@	1540@
Amul Power Dan**	1345@	1950@
De-oiled Rice Bran	8-11	16-19
Rice Bran	16-18	23-28
Maize	14-16	23-25
Rapeseed Extraction	18-19	23-29
Molasses	4-6	11-16
Dry fodder	5-7	8-14
Green fodder	3-4	5-7

*Note: *Type B cattle feed containing 20% crude protein and 3% crude fat;*
***Type I feed with 22% protein and 4% fat;*
@Rs per 70-kg bag. Source: Amul.

The Kaira District Co-operative Milk Producers' Union, better known as Amul, performed 13.91 lakh AIs of its farmers' cows in 2022-23 (April-March). Out of that, 2.86 lakh or 20.5% were based on SS semen. "We are targeting the ratio at 30% by 2024-25," said Amit Vyas, managing director of the union. Roughly every third AI leads to conception. With 90% female calves, it means more cows than bulls down the line.

ET and IVF

A good-milking cow, even with SS semen, can produce, at best, 5-6 as-good future milkers. This is where embryo transfer (ET) technology, to exploit the high genetic merit (HGM, i.e. milking potential) of a cow, comes in.

ET entails injecting follicle-stimulating hormone in cows to make them release multiple ova (eggs) in a single estrous cycle.

These ova — numbering 4-6 in Jersey, 6-8 in Holstein Friesian (HF) and 10-15 in Gir cows — are fertilised by sperms from the semen of a proven genetically superior bull. The fertilised eggs (zygotes) are, then, collected from inside the donor cow and transferred for implanting in the uteruses of multiple animals. Multiple ovulation and ET, thus, enables production of several calves from a single HGM cow.

With 6 such procedures, each yielding 6 viable embryos, and 33-35% conception rate, it would result in some 12 calves being born from every donor cow per year.

A more recent technology involves extracting the oocytes or immature ova directly from the cow's ovaries. The oocytes — about 10-50 can be collected from each ovary at a time — are kept in an incubator for 24 hours to develop into ova. The fertilisation of the mature ova takes place in vitro, i.e. outside the cow's body. The zygotes formed remain in the in vitro culture medium for another six days, before they are ready for transfer to recipient cows.

With 20 procedures, 5 viable embryos per procedure and 33-35% conception, there can be 13-15 calves per donor cow per year. This is as compared with 5-7 calves during the cow's entire lifetime through normal breeding!

Taking to the farmer

Amul, in March 2020, opened a Bovine Breeding Centre at Mogar in Gujarat's Anand district. The objective was to breed a nucleus herd of HGM bulls and cows, whose superior semen and in vitro-fertilised embryos frozen at minus 196 degrees Celsius could be used for AI or transferring into the animals of farmers.

The centre, set up at Rs 15 crore, has so far produced 170 male and 180 female animals through in vitro fertilisation (IVF) and ET technology. These include exotic (HF and Jersey giving 10,000-12,000 litres and 7,000-10,000 litres of milk respectively per year), HF-Gir and HF-Sahiwal crossbred (5,000-7,000 litres) and indigenous Gir, Sahiwal and Murrah buffalo (3,000-4,000 litres) breeds.

"By AI and SS semen, we are exploiting male genetics. In IVF-ET, we are exploiting female genetics of the donor cow," explained Gopal Shukla, manager (animal husbandry projects) at Amul.

The Kaira union has already taken IVF-ET technology to its farmers' doorstep, with 63 pregnancies and 13 calvings recorded up till now.

Other member unions of the Gujarat Co-operative Milk Marketing Federation have followed suit. Bhavnaben Chaudhary, who supplies around 150 litres of milk daily to the Banaskantha District Co-operative Milk Producers' Union, has a 4.5-month-old pure Kankrej calf born through IVF-ET to a surrogate HF-Kankrej crossbred mother.

"I went for a Kankrej, as its milk has higher fat (4.5-5% versus 4% for regular crossbred) and solids-not-fat (9% versus 8.5%) content. Even if yields are less, I should get a better price, along with lower feeding and maintenance cost," said the woman farmer from Alesh village in Banaskantha's Palanpur taluka, who rears 15 cows, 7 buffaloes and 6 calves.

Animal nutrition

Genetics apart, intervention is required to cut feeding costs of animals. This should be done by farmers cultivating high-yielding protein-rich green fodder grasses and reducing reliance on expensive compound cattle feed and oil-meal concentrates.

Amul is putting up a 30-tonne-per-day Total Mixed Ration (TMR) plant at Sarsa in Anand. TMR will contain dry and green fodder, along with concentrates, vitamins and mineral mixtures, in a ready-to-eat mashed form for animals. It would save farmers the cost of purchasing and storing fodder separately, and administering it in addition to cattle feed.

The plan is to source the fodder from farmer producer organisations, whose members would exclusively grow maize, jowar, hybrid napier or oat grass.

The focus of White Revolution 2.0 would clearly have to be on lowering the cost of producing milk at the farm-gate, as opposed to increasing procurement prices year after year.

LONGER VERSION ON indianexpress.com/explained

Context: The government's latest Household Consumption Expenditure Survey (HCES) for 2022-23 shows milk emerging as India's top food spend item, both in rural and urban areas.

Key Point of Report

- **Monthly Expenditure**: In rural India, an average person spends Rs 314 monthly on milk and dairy products, surpassing spending on vegetables (Rs 203), cereals, egg, fish & meat, fruits, edible oil, spices, and pulses.
- **Urban Preferences**: The HCES data for urban India indicates a similar trend, with monthly expenditures on milk leading at Rs 466, followed by fruits, vegetables, cereals, egg, fish & meat, edible oil, spices, and pulses.
- **Positive Impact on Dairy Industry**: The rising trend of increased spending on milk, often considered a "superior" food, brings positive news for the dairy industry and farmers.
- **Inflation Concerns**: The first challenge stems from consumer demand impacted by inflation, with the all-India modal price of milk rising from Rs 42 to Rs 60 per litre in the last five years, particularly witnessing a significant increase from Rs 52 to Rs 60 in the last year alone.

White Revolution

- **About**: Dr. Verghese Kurein was the visionary behind the White Revolution, establishing key institutions like Gujarat Cooperative Milk Marketing Federation Ltd and the National Dairy Development Board (NDDB).
- **NDDB's Role**: The White Revolution, led by NDDB in the 1970s, relied on village milk producers' cooperatives as its foundation.
- **Phases of the Revolution:**
  - **Phase I (1970-1980)**: Financed by the European Union, this phase saw the sale of butter oil and skimmed milk powder, laying the groundwork for the revolution.
  - **Phase II (1981-1985)**: Marked by an expansion of milk sheds and outlets, it established a self-sustaining system involving millions of milk producers and thousands of village cooperatives.
  - **Phase III (1985-1996):** This phase focused on expanding dairy cooperatives, enhancing the program, and fortifying the infrastructure for procuring and marketing increasing milk volumes.
- **Objectives**: To boost milk production, creating what was metaphorically described as "a flood of milk."

Significance

- **Empowering Farmers:** The revolution empowered dairy farmers to control their own development, managing the resources they generate.
- **Global Impact**: India's success in the White Revolution led to becoming the world's largest milk producer in 2016-17, currently contributing 22% of global milk production.

PIB Mar 3

WORLD WILDLIFE DAY
(Syllabus: GS Paper 3 – Env and Eco)

PM greets wildlife enthusiasts on World Wildlife Day

Context: The Prime Minister of India, greeted the wildlife enthusiasts on the World Wildlife Day.

World Wildlife Day

- **About:** The day is dedicated to celebrating the world's wild animals and plants, acknowledging their vital contributions to our lives and the overall health of the planet.
- **Annual Celebration**: The International Day of Wild Fauna and Flora is observed every year on March 3, emphasizing global awareness and appreciation for biodiversity.
- **Origin:** World Wildlife Day was initially proposed by Thailand to the United Nations General Assembly in 2013.
- **Official Designation**: The United Nations General Assembly officially adopted a resolution on December 20, 2013, designating March 3rd as World Wildlife Day.
- **Significance**: The chosen date holds significance as it marks the birthday of CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which was signed in 1973.
- **Theme 2024**: Connecting People and Earth: Discovering Innovations for Wildlife
- **Theme 2023**: Partnerships for Wildlife Conservation.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

- **About**: Resolution adopted in 1963 at a meeting of members of the International Union for Conservation of Nature (IUCN).
- **Entry into Force**: CITES entered into force on 1 July 1975.
- **Legally Binding Nature**: CITES is legally binding on state parties to the convention, which are obliged to adopt their own domestic legislation to implement its goals.
- **Aim**: To ensure that international trade in specimens of wild animals and plants does not threaten their survival.
    - It accords varying degrees of protection to more than 35,000 species of animals and plants.

HINDUSTAN TIMES

Mar 3

Nhava Sheva Port

(Syllabus: GS Paper 3 – Economy)

Customs seize Karachi-bound consignment at Nhava Sheva port

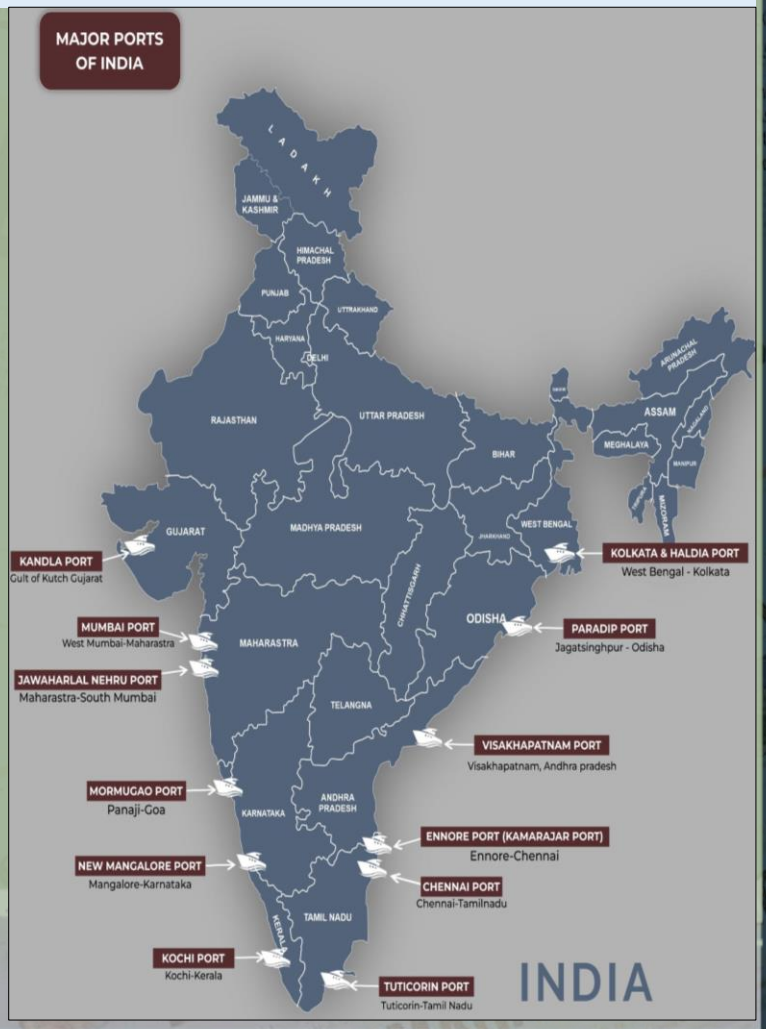
Context: Customs officials recently seized a dual-use consignment on a Karachi-bound ship at **Nhava Sheva port**, suspecting it could be used for Pakistan's nuclear programs.

Nhava Sheva Port or Jawaharlal Nehru Port (JNPT)

- **Location**: The Port of Nhava Sheva is situated to the **east of the Port of Mumbai**, approximately six nautical miles away across Thane Creek on the Arabian Sea.
- **Administrative Control:** Commonly referred to as the **Jawaharlal Nehru Port**, it is administered by the **Jawaharlal Nehru Port Trust.**
- **Busiest Port Status**: Regarded as the busiest port in India, handling nearly half of the country's imports and exports.
- **Entry Channel**: The Port of Nhava Sheva and the Port of Mumbai share a common entry channel spanning about 21 kilometers (33.9 miles) with a depth ranging from 10.1 to 11 meters (33 to 36 feet).
- **Importance:**
  - It is the second largest container port in India after Mundra Port.
  - It is also the terminal of the Western Dedicated Freight Corridor.

Major Ports of India:

- **India has 13 major ports** - Deendayal (Kandla), Mumbai, Mormugao, New Mangalore, Cochin, Chennai, Ennore (Kamarajar), Tuticorin (V O Chidambaranar), Visakhapatnam, Paradip and Kolkata (including Haldia) and Jawaharlal Nehru Port.



ALL INDIA RADIO Mar 3

INS GARUDA

(Syllabus: GS Paper 3 – Security)

Indian Navy to commission newly inducted MH 60R Seahawk multi-role helicopter at INS Garuda in Kochi

Context: The Indian Navy recently announced the commissioning of the newly inducted **MH 60R Seahawk multi-role helicopter** at **INS Garuda** in Kochi.

INS Garuda

- **Historic Commissioning**: INS Garuda (ICAO: VOCC) stands as the **oldest operational air station** of the Indian Navy, commissioned on 11 May 1953 in Kochi, Kerala.
- **Strategic Location**: Situated adjacent to INS Venduruthy and the Southern Naval Command headquarters, INS Garuda serves as a pivotal naval air training center and operational base.

Cradle of Naval Aviation: INS Garuda holds a prestigious position as the birthplace of naval aviation in India, nurturing the growth of air capabilities within the Indian Navy.

- **70 Years of Service**: Celebrating 70 years of illustrious service to the Indian Navy, INS Garuda remains a premier Naval Air Station within the Southern Naval Command.
- **Home of Pioneering Aircraft**: Hosting the first amphibious aircraft of the Indian Navy, the Sealanders, INS Garuda has evolved into a comprehensive air base operating some of the most advanced air assets of the Indian Navy.
- **Historical Significance**: The term "Garuda" in the naval context traces back to the Royal Navy's establishment of 'HMS Garuda,' a dedicated Aircraft Repair Yard, in Peelamedu, Coimbatore, in 1942.
- **Decommissioning of 'HMS Garuda'**: The Royal Navy's 'HMS Garuda' in Peelamedu, Coimbatore, marked the initial use of the term "Garuda" in naval operations, serving as an aircraft repair yard until its decommissioning on 01 September 1946.

TIMES OF INDIA

Mar 3

INS JATAYU

(Syllabus: GS Paper 3 – Security)

New naval base at Minicoy to be commissioned on March 6

Context: A small naval base INS Jatayu will be commissioned at Minicoy on March 6, as part of the government's plan to incrementally boost military presence and security infrastructure in the Arabian Sea.

INS Jatayu

- **Strategic Naval Base**: INS Jatayu becomes the second Naval base in Lakshadweep after INS Dweeprakshak in Kavaratti.
- **Enhancing Navy's Presence**: Commissioning of INS Jatayu strengthens Indian Navy's foothold in Lakshadweep islands, extending operational surveillance, reach, and sustenance.
- **Capacity Building and Development**: Its establishment ushers in a new era of capacity building and comprehensive development of the island territories.
- **Security Infrastructure**: The event signifies a crucial milestone in the Navy's commitment to augment security infrastructure at the strategically vital Lakshadweep Islands.

Significance of the Naval Detachment

- **Enhanced Operational Capability**: Basing an independent Naval unit with necessary infrastructure and resources enhances the overall operational capability of the Indian Navy in the islands.
- **Expanded Operational Reach**: The base facilitates Indian Navy's operational efforts towards Anti-Piracy and Anti-Narcotics Operations in the Western Arabian Sea, serving as the first responder and improving connectivity with the mainland.

Minicoy Islands

- **Location**: Minicoy Island, the southernmost tip of Lakshadweep, rests 398 kilometers (215 nautical miles) southwest of Kochi, India.
- **Dimensions and Proximity**: With a land area of 4.80 square kilometers, Minicoy boasts one of the largest lagoons in Lakshadweep.
- **Lies between**: The island neighbors the bustling 9° Channel, a crucial shipping route, and lies approximately 130 kilometers north of the Maldivian archipelago.

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