

PERFECT 7

**Weekly
Current Affairs**

A New Initiative of Dhyeya IAS

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Ministry of Health & Family Welfare
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**Vinay Kumar Singh****CEO and Founder****DHYEYA IAS****Q H Khan****Managing Director****DHYEYA IAS**

The guiding philosophy of the institute, throughout, has been creation of knowledge base. Dhyeya IAS inculcates human values and professional ethics in the students, which help them make decisions and create path that are good not only for them, but also for the society, for the nation, and for the world as whole. To fulfill its mission in new and powerful ways, each student is motivated to strive towards achieving excellence in every endeavor. It is done by making continuous improvements in curricula and pedagogical tools. The rigorous syllabi not only instills in them, a passion for knowledge but also attempts to teach them how to apply that knowledge in real-life situations. The programmes lay emphasis on well-rounded personality development of the students and also in inculcating the values of honesty and integrity in them.

Dhyeya IAS is an institution that aims at the complete development of the student. Our faculty are hand-picked and highly qualified to ensure that the students are given every possible support in all their academic endeavors. It is a multi-disciplinary institution which ensures that the students have ready access to a wide range of academic material.

Our brand of education has broad horizons as we believe in exposure. Our students are encouraged to widen their knowledge base and study beyond the confinements of the syllabus. We aim to lend a gentle guiding hand to make our students recognize their inner potential and grow on their own accord into stalwarts of tomorrow's society.

**Qurban Ali****Chief Editor****DHYEYA IAS****(Ex Editor- Rajya Sabha TV)**

With immense pleasure I would like to inform you that the new version of '**Perfect 7**', from the Dhyeya IAS, is coming with more information in a very attractive manner. Heartily congratulations to the editorial team. The '**Perfect 7**' invites a wider readership in the Institute. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of the teacher is to nurture the skills and talents of the students as a facilitator. This magazine is going to showcase the strength of our Institute. Let this be a forum to exhibit the potential of faculties, eminent writers, authors and students with their literary skills and innovative ideas.

Please do visit our website **www.dhyeyaias.com** and our youtube channel for regular and updated information on current affairs.

**Ashutosh Singh****Managing Editor****DHYEYA IAS**

We have not only given the name '**Perfect 7**' to our magazine, but also left no stone unturned to keep it 'near to perfect'. We all know that beginning of a task is most challenging as well as most important thing. So we met the same fate.

Publishing '**Perfect 7**' provided us various challenges because from the beginning itself we kept our bar too high to ensure the quality. Right from the very first issue we had a daunting task to save aspirants from the 'overdose of information'. Focusing on civil services exams '**Perfect 7**' embodies in itself rightful friend and guide in your preparation. This weapon is built to be precise yet comprehensive. It is not about bombardment of mindless facts rather an analysis of various facets of the issues, selected in a systematic manner. We adopted the 'Multi Filter' and 'Six Sigma' approach, in which a subject or an issue is selected after diligent discussion on various levels so that the questions in the examination could be covered with high probability.

Being a weekly magazine there is a constant challenge to provide qualitative study material in a time bound approach. It is our humble achievement that we feel proud to make delivered our promise of quality consistently without missing any issue since its inception.

Your suggestions and popular demands have inspired us to come up with a coloured edition of '**Perfect 7**' on this pious festival of colours. May this version of '**Perfect 7**' instill a new energy and a new spirit in you. We wish that the bond of affection between you and Dhyeya IAS is reaches a new height.

PREFACE



On the joyous occasion of Holi, Dhyeya family has decided to bring a new colourful and vibrant version of **'Perfect 7'** – a panacea for current affairs. Just like vividness of colours, newer version of **'Perfect 7'** will add positive and dynamic energy in your preparation.

'Perfect7' is an outstanding compilation of current affairs topics as per the new pattern of Civil Service examination (CSE). It presents weekly analysis of information and issues (national and international) in the form of articles, news analysis, brain boosters, PIB highlights and graphical information, which helps to understand and retain the information comprehensively. Hence, **'Perfect 7'** will build in-depth understanding of various issues in different facets.

'Perfect7' is our genuine effort to provide correct, concise and concrete information, which helps students to crack the civil service examination. This magazine is the result of the efforts of the eminent scholars and the experts from different fields. **'Perfect 7'** is surely a force multiplier in your effort and plugs the loopholes in the preparation.

We believe in environment of continuous improvement and learning. Your constructive suggestions and comments are always welcome, which could guide us in further revision of this magazine.

Omveer Singh Chaudhary

Editor
Dhyeya IAS

As a proud jewel of Dhyeya IAS, **'Perfect 7'** now comes in a new coloured avatar. **'Perfect 7'** is a quintessential part of your preparation strategy for Civil Services Examination. A regular and manageable dose of current affairs will now reach you in new format, making it more reader friendly. Our humble attempt to serve you is surely rewarded by your appreciations. It encourages us to innovate and provide the best as per our ability.

A dedicated team of experts at Dhyeya IAS toils night and day to make your dream of Civil Services come true. I heartily thank and express my gratitude to the esteemed readers and all the people involved in making this magazine a shining star in the galaxy of Dhyeya IAS.

Rajat Jhingan

Editor
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(Broadcasted on YouTube & Dhyeya-TV)

7

IMPORTANT ISSUES

01

Pradhan Mantri Ujjwala Yojana : Journey So Far

Why in News?

According to the report of the Parliamentary Committee on Petroleum, only three States and five Union Territories (UTs) have become kerosene-free, though the government in September 2019 met the target of eight crore LPG connections under the Pradhan Mantri Ujjwala Yojana (PMUY).

Introduction

The Central Government has recently claimed that the target of PMUY has been achieved and has closed the scheme claiming it to have met its said objectives and a successful scheme.

But, the report points to the gap between the continuing use of kerosene and the claim of 97% LPG coverage nationwide. The allocation for the scheme has been cut down by 58% from Rs. 2,724 crore during 2019-20 to Rs. 1,118 crore during 2020-21. The Petroleum Ministry informed the committee that the government had met the target on September 7, 2019, and 96.9% coverage had been achieved nationwide, except in Jammu and Kashmir. The Ministry said the scheme was no longer running, and the present allocation was meant to meet the arrears in the reimbursement of expenditure.

The 97% coverage has been calculated by dividing the number of

households — it stand at 2850.5 lakh as on February 1 this year — and the domestic LPG consumers, at 2772.2 lakh.

About PMUY

Pradhan Mantri Ujjwala Yojana has been launched with an objective to provide LPG connections to 5 crore women belonging to the Below Poverty Line (BPL) families over a period of 3 years starting from Financial Year (FY) 2016-17. Later, the government had decided to increase the target from 5 crore to 8 crore to be achieved by FY 2019-20. The main objective of the scheme is to provide clean fuel solution to poor households especially in rural areas. Use of fossil fuels and conventional fuel like cow-dung, firewood, etc., has serious implications on the health of rural womenfolk and children. This scheme is implemented by Ministry of Petroleum & Natural Gas.

Key Features

- (i) LPG connection is released in the name of adult woman of the poor family, subject to the condition that no LPG connection exists in the name of any family member of the household and fulfilling other terms and conditions.
- (ii) Initially, the beneficiaries under PMUY were identified either from Socio- Economic Caste Census (SECC) list or from seven other

identified categories. Subsequently, government has extended the benefit to all left out poor families under PMUY subject to fulfilment of terms & conditions.

- (iii) Under the Scheme, cash assistance upto Rs 1600/- for providing new LPG connection is provided by the Central Government.
- (iv) The beneficiary bears the cost of Hot Plate and purchase of first refill. The beneficiary has the option to take Hot Plate or purchase first refill or the both on loan basis from Oil Marketing Companies (OMCs) at zero interest and the same is recovered through subsidy.

Achievements

More than 5.9 crore LPG connections have been released under this scheme as on 31st December, 2018. The original target of issuing 5 crore LPG connections was achieved by 3rd August, 2018, 8 months in advance of the target of 31st March, 2019.

PMUY : An Analysis

LPG Usage Still Very Low in Hindi Belt

A recent study from the Research Institute for Compassionate Economics (r.i.c.e) shows that 85% of Ujjwala beneficiaries in rural Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan

still use solid fuels for cooking, due to financial reasons as well as gender inequalities. The resultant indoor air pollution can lead to infant deaths and harm child development, as well as contribute to heart and lung disease among adults, especially the women, cooking on these chulhas.

As government claims of high coverage, the study shows that in the four States surveyed, there has indeed been a substantial increase in LPG ownership due to the scheme, with 76% of households now owning an LPG connection.

However, more than 98% of these households also own a chulha. Surveyors found that only 27% of households exclusively used the gas stove. Another 37% reported using both the chulha and the gas stove, while 36% made everything on the chulha.

Gender Angle

Gender inequalities also play a role. Surveyors found that almost 70% of households do not spend anything on solid fuels, meaning that the relative cost of an LPG cylinder refill, even if subsidised, is far higher. Women are more likely to make dung cakes, and while men are more likely to cut wood, women are often the ones collecting

and carrying it. The study argues that these women, who do the unpaid labour needed for “free” solid fuels, are not typically economic decision-makers in the household, hindering a shift to LPG usage.

One of the major barriers for greater LPG usage is the cost of refills. Between 2016 and 2018, the market price of the refill of a 14.2 kg cylinder ranged between Rs 500-837. And though poor households receive a refill subsidy, they still have to make the full payment upfront before the subsidy amount is transferred into their bank accounts which can be a costly process.

A 2016 PPAC study found that 83% of households that did not adopt LPG did so because of high recurring costs. This cost issue was raised by both a December 2019 Comptroller and Auditor General (CAG) audit report on PMUY. In its audit report, the CAG found that the average refill consumption among all LPG consumers has fallen steadily over the last four years - mirroring the overall consumption slowdown. Within this decline, PMUY beneficiaries refills fell even more sharply.

CAG Signals Glaring Loopholes

The Comptroller and Auditor General (CAG), in its report on the PMUY, has highlighted the risk of diversion of

domestic cylinders for commercial use as 1.98 lakh beneficiaries had an average annual consumption of more than 12 cylinders. The CAG said this level of consumption seemed improbable in view of the BPL status of such beneficiaries.

As on 31 March 2019, Oil Marketing Companies had issued 7.19 crore LPG connections, which is about 90% of the target to be achieved till March 2020. To rule out existing LPG connection in beneficiaries' household, de-duplication was to be carried out based on Aadhaar of all family members.

CAG's Observations:

- Report found that 1.98 lakh beneficiaries have an average annual consumption of more than 12 cylinders.
- 13.96 lakh beneficiaries consumed 3 to 41 refills in a month. Further, Indian Oil Corporation Limited (IOCL) and Hindustan Petroleum Corporation Limited (HPCL) in 3.44 lakh instances issued 2 to 20 refills in a day to a PMUY beneficiary having single-bottle cylinder connection.
- Out of 3.78 crore LPG connections, 1.60 crore (42%) connections were issued only on the basis of beneficiary Aadhaar which remained a deterrent in de-duplication.
- Laxity in identification of beneficiaries was noticed as 9,897 LPG connections were issued against Abridged Household List Temporary Identification Numbers (AHL TINs) where names of all family members and the beneficiary were blank in the SECC-2011 list.

Pahal

The Direct Benefit transfer of LPG (DBTL) scheme PAHAL (Pratyaksh Hansthantrit Labh) is a scheme to provide subsidy for the domestic consumers of LPG. Consumers who wish to join the scheme will have to either link their Aadhaar number into their bank account and their LPG consumer or if they do not possess Aadhaar number, they will have to link their bank account directly with their 17 digit LPG Id. Once a Consumer joins the scheme, he will get the cylinders at market price and will receive LPG subsidy directly in his bank account. DBTL is designed to ensure that the benefit meant for the genuine domestic customer reaches them directly and is not diverted. By this process public money will be saved.

- Due to lack of input validation check in IOCL software, 1.88 lakh connections were released against AHL TIN of males.
- Lack of input validation check in the IOCL software allowed issue of 0.80 lakh connections to beneficiaries aged below 18 years.
- Mismatch in the name of 12.46 lakh beneficiaries between the PMUY database and SECC-2011 data. The CAG, on field visits, also found that connections were given to “unintended” persons.
- Besides, deficiencies in de-duplication to restrict issuance of duplicate connections were noticed in 12,465 cases.
- The lack of input validation check allowed release of 42,187 connections against invalid AHL TINs, which did not exist in the SECC-2011 data.
- The audit also highlighted the delay of more than 365 days in the installation of 4.35 lakh connections against the stipulated time period of seven days.
- Adequate efforts were not made in distributing the small 5-kg cylinders for encouraging usage.
- Encouraging the sustained usage of LPG remains a big challenge as the annual average refill consumption of 1.93 crore PMUY consumers (who have completed more than one year as on March 31, 2018) was only 3.66 refills as worked out by audit. For the 3.18 crore PMUY beneficiaries, as on December 31, 2018, refill consumption declined to 3.21 refills per annum.
- The low consumption of refills by 92 lakh loanee consumers (who had completed one year or more as on 31 December 2018) hindered recovery of the outstanding loan of Rs 1,234.71 crore.

Kerosene Consumption Still High

The report of the Parliamentary Committee on Petroleum points to the gap between the continuing use of kerosene and the claim of 97% LPG coverage nationwide.

Only three States — Haryana, Punjab and Andhra Pradesh — and the Union Territories of Delhi, Chandigarh, Daman & Diu, Dadar & Nagar Haveli, Andaman & Nicobar Island and Puducherry have become kerosene-free.

The Ministry has justified the low number of ‘kerosene-free’ States and Union Territories, saying their consent is critical. Karnataka, Telangana, Haryana, Nagaland, Bihar, Gujarat, Rajasthan, Maharashtra, Goa, Andhra Pradesh, Chandigarh and Puducherry have gone for a voluntary cut.

The committee was upset at the closure of the scheme and said there was still a lot of ground to cover. There are poor households in the general category in urban and semi-urban localities that also need to be covered. The committee, therefore, recommended that the scheme be extended to poor households in urban and semi-urban slum areas, and achieve a higher LPG coverage of the population by providing connections to households that do not have LPG.

Way Forward

With a stated target of delivering 80 million free LPG connections to poor women, PMUY has emerged as present government’s marquee scheme for female empowerment and healthy cooking. Yet for all the claims on expanding LPG coverage, new data suggests that rural India is a long way from completely adopting LPG. From gender based reasons to the structural leakages there is still more left to be done. The dangers of cooking on traditional cooking fuels are well known but still the adoption of clean and safe fuel like LPG is low and least preferred in some areas. The implementation of DBTL and post transfer of the subsidy is one of the factors that is needed to be addressed. The aim should be more than just distributing connections, it should be sustained and continuous use of LPG fuel. 

General Studies Paper- II

Topic: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

Topic: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

02 A New Era for Girls : 25 Years of Progress

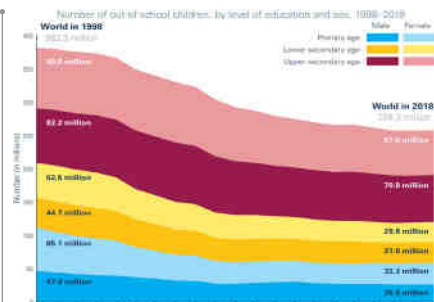
Why in News?

The report titled 'A New Era for Girls: Taking Stock on 25 years of Progress' has been released by the United Nations Children's Fund (UNICEF) along with Plan International and United Nations Women.

Introduction

The world is home to more than 1.1 billion girls under the age of 18, who are poised to become future entrepreneurs and change-makers the world has ever seen. Every day, girls are breaking boundaries and barriers to lead and foster a safer, healthier and more prosperous world for all. They are tackling issues like child marriage, education inequality, violence, climate justice, and inequitable access to healthcare.

Back in 1995, the world adopted the 'Beijing Declaration and Platform for Action' – the most comprehensive policy agenda for gender equality – with the vision of ending discrimination against women and girls. But today, 25 years later, discrimination and limiting stereotypes remain rife. Girls' life expectancy has extended by eight years, yet for many the quality of that life is still far from what was envisioned. Girls have the right to expect more. The realities they face today, in contexts of technological change and humanitarian emergencies, are both remarkably different from 1995 and more of the same: with violence, institutionalized biases, poor learning



and life opportunities, and multiple inequalities unresolved. There are major breakthroughs still to be made.

There are many success stories: Fewer girls are getting married or becoming mothers, and more are in school and literate – acquiring key foundational skills for lifelong success. But progress has been uneven and far from equitable.

Key Highlights of the Report

- Girls are living longer lives than they were 25 years ago, when nations committed to advancing gender equality as part of the Beijing Declaration and Platform for Action.
- Yet, girls continue to face enormous hurdles in a world that still largely favours boys and men. Girls are still excluded from decision-making that impacts their lives, and the most marginalized girls – those from ethnic minorities, indigenous groups and poor households; living in rural or conflict settings; and living with disabilities – face additional layers of discrimination.
- Globally, the participation of female youth aged 15-24 years in the labour force has declined from 47

percent in 1995 to 33% in 2020. This is partly because of greater education opportunities.

- Inheritance: At least 60 per cent of countries still discriminate against daughters' rights to inherit land and non-land assets in either law or practice.
- Gender discrimination not only restricts girls' abilities to accumulate human, social and productive assets, limiting their future educational and employment opportunities, but also hinders their well-being and diminishes their self-belief. As a result, by the time girls reach adolescence, many are left dreaming instead of achieving.
- When it comes to education today, fewer girls are out of school. Nearly two in three girls are enrolled in secondary school compared to one in two in 1998. However, we are facing a globally recognized "learning crisis"; this means, even when girls are in school, many do not receive a quality education.
- Many are not developing the transferable skills, like critical thinking and communication, or digital skills needed to compete in today's labour market and gig economy. In fact, worldwide, nearly one in four girls aged 15-19 years is neither employed nor in education or training compared to 1 in 10 boys of the same age.
- The risk of violence in every space. Thirteen million girls aged 15-19

years have experienced forced sex in their lifetimes. Meanwhile, even though harmful practices such as child marriage and female genital mutilation (FGM) have declined in the past 25 years, they continue to disrupt and damage the lives and potential of millions of girls globally.

- Further, conflict and displacement only heighten the risk and realities of gender-based violence. As girls lose their support systems and homes, and are placed in insecure environments and in new roles, their risk of gender-based violence, including sexual violence, intimate partner violence, child marriage and abuse, increases.
- While fewer adolescent girls are becoming mothers today, they still face a high risk of sexually-transmitted infections and anaemia – risks that increase when they struggle to access age-appropriate health services and information. This is nowhere more obvious than in the case of HIV, where adolescent girls continue to bear the brunt of the virus's effects. Globally, 970,000 adolescent girls aged 10–19 years are living with HIV today, compared to 740,000 in 1995.
- Since 1995, the proportion of young women who were married as children has declined globally from one in four to approximately one in five. Encouragingly, this is happening in countries where a large numbers of girls are at risk, such as in South Asia. In that region, the practice of child marriage has almost halved in the last 25 years, declining from 59 per cent to 30 per cent today.

- The combination of son preference and access to prenatal sex determination technologies has led to the birth of more boys than biologically expected in some countries.

Key Suggestions of the Report

- The global community has good cause to celebrate the progress achieved over the last quarter century in the name of girls' rights. But we cannot lose sight of the challenges girls still face every day.
- Empowering girls will require the global community to:
- Expand opportunities for girls to be the changemakers, actively engaging their voices and opinions in their communities and political processes about any decision that relates to their bodies, education, career and future. All actions should place girls' voices and solutions at the centre – no decisions for girls, without girls.
- Scale up investments in girls' programming models that will accelerate progress aligned

with today's reality, including in developing adolescent girls' education and skills for the Fourth Industrial Revolution; ending gender-based violence, child marriage and FGM; and ensuring girls have accurate, timely and respectful health information and services.

- To ensure all girls live fulfilled lives, data must make marginalized girls visible. This includes girls living with disabilities in rural areas or in the poorest household, from ethnic minorities and indigenous groups.

Challenges

Adopted in 2015, the 2030 Agenda for Sustainable Development renews the commitment to creating a world where all girls are healthy and protected, learn and have a fair chance to succeed. But, commitment has not led to direct investments: Only a fraction of international aid dollars is spent on meeting the needs of girls.

Similarly, even forward-looking policies and programmes addressing girls' challenges specifically, including skills development for employability, often start only after adolescent girls

Beijing Declaration and Platform for Action

The Beijing Declaration and Platform for Action is a global commitment to achieving equality, development and peace for women worldwide. It was adopted in September 1995 at the Fourth World Conference on Women. It builds upon consensus and progress made at earlier UN conferences, particularly the Conference on Women in Nairobi in 1985.

Among the critical areas of concern that need to be addressed for the achievement of equality are the rights of the girl child. Article 39 and 93 describes female genital mutilation as a form of harmful practice affecting young girls. The declaration also classifies FGM as a form of violence against women and a grave risk to women and girls. Governments are urged to promote awareness programmes that aim to change harmful attitudes and practices like FGM and in addition, make it punishable by law.

have transitioned into adulthood, missing the millions of girls that have never set foot in school and live in poverty. Limited investment in these key areas means girls are already lagging behind when it comes to achieving equal participation in society as adults.

Likewise, programmes and interventions to support adolescent girls are often disjointed, and they fall through the gaps in approaches only targeted at either children or women. Adolescent girls' challenges and the solutions to them must be addressed holistically, as success in each area pushes progress in another.

India's Position

In India, the rate of drop-outs for girls in schools has gone down from 20% in 2008 to 13.5% in 2018, but this does not automatically translate into economic and social empowerment. Many are married by the time they finish school, perpetuating the dependency syndrome, and leaving them vulnerable to violence from their partners. The female workforce participation has been declining from 36.9% in 2008 to 26.7% in 2019. While the focus of government schemes is largely on the

girl child and women, adolescents tend to fall through the cracks. Early marriage, discriminatory practices within the family and lack of access to reproductive health have a profound effect on their well-being. The government must aggressively focus on policies for adolescents, especially when it comes to gender-based violence.

Way Forward

For progress to be achieved, girls' voices and solutions must take centre stage, and the global community, including governments, civil society organizations, multilaterals, statisticians and the private sector must work with girls to take actions that set them up to succeed. Once girls have gained the right tools and the space to strengthen their engagement and leadership, they will be well placed to shape the world around them, opening doors for them to be at the heart of decision-making processes that affect their lives.

Today, adolescent girls and young women also are leading and organizing global movements like "Fridays for the Future" for tackling climate change, and the "#MeToo movement" against sexual violence and harassment, to call action to where action is needed

and show the power behind girls as changemakers. Girls' voices are rising. Now, the global community needs to listen and develop the solutions with girls at the centre so all girls, including those most marginalized, can move from dreaming to achieving. <><

General Studies Paper- II

Topic: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

Topic: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.



Pradhan Mantri Janaushadi Pariyojana : An Overview

Why in News?

On the occasion of 'Jan AushadhiDiwas', the Prime Minister, Shri Narendra Modi, interacted with the beneficiaries of 'Pradhan Mantri Bhartiya Janaushadhi Pariyojana' and store owners of 'Jan AushadhiKendras', through video conference. He

informed that more than one crore families are benefitting from the cheaper and quality medicines available at the JanaushadhiKendras every month. The Jan aushadhi Divas aims to provide further impetus and create awareness about the use of generic medicines.

Introduction

In order to ensure the availability of high quality medicines at lower prices, Government had taken two major steps. First, the costs of 850 essential medicines were regulated and the prices of heart stent and equipment for knee surgery were reduced. Second, a series

of Jan Aushadhi Kendras were started throughout the country. These steps have greatly benefitted not only the poor, but also the middle class.

The medicines are available at fifty to ninety percent lower price than the market rates at Jan Aushadhi Kendras. More than six thousand Jan Aushadhi Kendras have been opened across the country. The Kendras provide not only good quality medicines but also provide self-employment and create new employment opportunities.

It is a powerful intervention against the unjustifiable pricing of medicines by private pharmaceutical industry, to make the generic medicines available at affordable prices. The marginalized populations of India are not able to afford many branded medicines. Further, for the holistic transformation of health sector, the government has adopted 'No Silos-Only Solutions' approach. All the stakeholders related to health sector are working together to transform the sector.

Jan Aushadhi Kendra

Jan Aushadhi Kendra is considered as the biggest retail pharma chain in the world with around 6200 outlets in 700 districts. Further, total sales of these stores in the financial year 2019-20 has crossed Rs 390 crore which led to total savings of approximately Rs 2200 crore of common citizens as these medicines are cheaper by 50 to 90% of the average market price. The scheme also provides a good source of self-employment with sustainable and regular earnings.

About PMBJP

Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) is a campaign launched by the Department of Pharmaceuticals to provide quality medicines at affordable prices to the poor and disadvantaged, through exclusive stores, so as to reduce out of pocket expenses in healthcare.

PMBJP stores have been set up to provide generic drugs, which are available at lesser prices but are equivalent in quality and efficacy as expensive branded drugs. It was launched by the Department of Pharmaceuticals in November 2008 under the name Jan Aushadi Campaign. Bureau of Pharma PSUs of India (BPPI) is the implementation agency for PMBJP. Vision of the scheme is to bring down the healthcare budget of every citizen of India through providing Quality generic Medicines at Affordable Prices.

Mission

- Create awareness among the public regarding generic medicines.
- Create demand for generic medicines through medical practitioners.
- Create awareness through education and awareness program that high price need not be synonymous with high quality.
- Provide all the commonly used generic medicines covering all the therapeutic groups.
- Provide all the related health care products too under the scheme.

What are Generic Drugs?

A generic drug is a medication created to be the same as an already marketed brand-name drug in dosage form, safety, strength, route of administration, quality, performance characteristics, and intended use. These similarities help to demonstrate bioequivalence, which means that a generic medicine works in the same way and provides the same clinical benefit as its brand-name version. In other words, you can take a generic medicine as an equal substitute for its brand-name counterpart.

Since, branded medicines are too expensive for common man to afford, the need of generic medicine arises. Due to high cost of medicines many people do not have access to life-saving medicines. Also, the growth in number of fatal diseases has increased over the year and also the cost of those medicines for such diseases is very high. This is where generic medicine plays an important role.

Generic medicines cost very little as compared to branded medicines because the generic medicine manufacturers do not have to bear the cost of making a new medicine from scratch and they even save on marketing. This makes generic medicines price 30% to 70% less than branded medicines.

The Medical Council of India, in an amendment to the code of conduct for doctors in October 2016, has recommended that every physician should prescribe drugs with generic names legible and he or she shall ensure that there is a rational prescription which promotes the use of generic drugs.

Generic Medicines: Challenges

The proponents of generic drugs claim that they are equally effective as brand or innovator drugs. Subsequent to this claim, the Drugs Technical Advisory Board of India in May 2016 considered amending Rule 65 (11A) of the Drugs and Cosmetics Act, 1940, so that pharmacists can dispense generic name medicines and/or equivalent brands against prescriptions in brand names. However, skeptics have stated that the use of generic drugs may lead to prolongation of illness or even therapeutic failure as the bioavailability (BA) of a generic drug may not be as good as that of the prescribed brand.

Hence, the critical issues that affect the quality of generic drugs are purity, potency, stability, and drug release, and these should be controlled within an appropriate limit, range, or distribution to ensure the desired drug quality.

One of the main reasons for lack of confidence in generic drugs among doctors (and even patients) has been the absence of stringent regulatory requirements for the quantity of the drug in its generic version and the permissible impurities in it. But since 2016, clear-cut guidelines have been formulated which state that there should be 90% confidence interval of generic-drug-to-brand-drug ratio for key pharmacokinetic parameters [maximum concentration (C_{max}) and area under curve] to lie between 80% and 125% of 1.00. Tramadol, paracetamol, levofloxacin, memantine, moxifloxacin, and temozolomide were given BE (bioequivalence) waiver by Indian

regulator as this drug substances were highly soluble and highly permeable.

To ensure that the quality of generic drugs is equivalent to its branded version and that this equivalence is scrupulously maintained, the government should also bring legislation to ensure compliance in generic drug manufacturing and testing.

PMBJP: Analysis and Concerns

The scheme aims to redefine the treatment cost per person by ensuring quality medicine at cheaper prices through Jan Aushadhi Kendras where generic medicines are available to every strata of the society. The government provides incentives to store owners with an assistance of Rs. 2 lakh to 50 lakh and also provides a 16% discount in medicine purchase which provides for the profit margins. The stores can be opened by non-governmental organizations (NGOs), charitable institutions, private hospitals, registered professional organizations, or self-help groups. Studies show that, due to the dependence on the public sector for supply, availability of generic medicines was about 33%. At present, almost all therapeutic classes are covered by stores which include over 800 medicines and 152 surgical items. But of all the stores, only a few are functional, the distribution of these within the states is uneven and the locations are remote. Thus, the needy cannot reach these stores, and thus, the public awareness is abysmal because of invisibility.

A study conducted by the Public Health Foundation of India observed

that lack of awareness in the public, distribution of free medicines by state governments, poor supply chain, and doctors not prescribing generic medicines are the major constraints faced by the scheme leading to its poor success.

The success of this initiative is dependent on other agencies too, such as Ministry of Health & Family Welfare, State Governments, active co-operation of Members of Parliament, Members of different Legislative Assemblies, IMA, hospitals run by Private groups and charitable institutions, NGOs, practicing doctors etc. States which are having their own schemes like free distribution of medicines are to be coupled with PMBJP scheme. Non-prescription of Generic Medicines by the doctors is another factor BPPI is continuing their efforts to persuade doctors to prescribe only generic medicines. For this BPPI is working in close association with other organizations and Govt. departments. Seminars/Workshops inviting Doctors, Scientists, Government officials and other stakeholders are also organized.

There is a cozy connection between the medical practitioners and pharmaceutical industries which influences the prescription of most of medical practitioners. There is evidence that the pharmaceutical companies sponsor conferences and offer personal gifts. Medical associations and societies request the drug companies to sponsor their scientific activities such as conferences, symposia, and continuing medical educations. The glitter of the drug industry is too irresistible. It has been observed that the doctors with frequent drug detailing are more willing

to prescribe new medicines even in the absence of evidence base. The doctors do not find any advantage in prescribing generic medicine vis-a-vis branded medicines which offer them attractive returns. Prescribing brand name medicine is more prevalent and it has been observed that the doctors are aware only of the brand names of drug combinations and not their generic contents.

Way Forward

PMBJP is definitely an ambitious project which can have far reaching impact if it

can be executed successfully. The intent of PMBJP is clear and noble – Ensuring access to quality medicines at affordable costs. However, better planning and better systems need to be brought and implemented at the earliest to plug the gaps that threaten to derail the whole initiative.

Hence, in the coming years, PMBJP scheme shall provide the complete spectrum of health care products and services, starting from making available all the generic drugs covering all the therapeutic groups. Product basket

should contain more than 800 drugs and 154 surgical items and to include stents and replacements. 

General Studies Paper- III

Topic: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

04 Land Acquisition Law in India : Brief Description

Why in News?

Recently the Supreme Court held that disputes over land acquisition and payment of fair compensation to owners cannot be re-opened under the 2013 Act if the legal processes have been completed before January 1, 2014. The 5-judge bench held that proceedings under the Land Acquisition Act 1894 will not lapse if the compensation has been tendered by deposit in treasury.

Background

In 2014, a three judge bench (Justices R M Lodha, M B Lokur and Kurian Joseph) in Pune Municipal Corporation case held that in case land owners are not willing to accept the compensation, the same has to be deposited in Court. Mere deposit of compensation in treasury cannot be regarded as payment as per Section 24(2), added the bench. In other

words, land acquisition proceedings under the 1894 Act will lapse.

Later, after three years, a two judge's bench comprising Justice Arun Mishra and Amitava Roy doubted its correctness in the Indore Development Authority case in December 2017 and referred it to larger bench.

The larger bench (a three judge bench) which considered the reference was also headed by Justice Arun Mishra. This three judge bench (by 2:1 majority) held the decision in Pune Municipal Corporation to be per incuriam (a judgement delivered ignoring the law).

Shortly, another three-judge bench (Justices Madan B Lokur, Kurian Joseph and Deepak Gupta) took objection to this course adopted by Justice Arun Mishra-led bench in the Indore Development Authority case, and stayed the operation of Indore Development Authority case.

It was only after this that a two-judge bench headed by Justice Arun Mishra thought it is fit to refer the issue to the CJJ for determination of this issue by a larger bench.

Land Acquisition in India

Land acquisition in India is governed by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR) and which came into force from 1 January 2014. Till 2013, land acquisition in India was governed by Land Acquisition Act of 1894. On 31 December 2013, the President of India promulgated an ordinance with an official mandate to "meet the twin objectives of farmer welfare; along with expeditiously meeting the strategic and developmental needs of the country".



Land acquisition in India refers to the process by which the union or a state government in India acquires private land for the purpose of industrialization, development of infrastructural facilities or urbanization of the private land, and provides compensation to the affected land owners and their rehabilitation and resettlement.

An amendment bill was then introduced in Parliament to endorse the Ordinance. Lok Sabha passed the bill but the same is still lying for passage by the Rajya Sabha. On 30th May 2015, President of India promulgated the amendment ordinance for third time. Union Government of India has also made and notified the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014 under the Act to regulate the procedure.

Controversial Issue: Section 24(2)

The case involved the interpretation of Section 24(2) of the Right to Fair

Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013. As per this provision, compensation proceedings under the Land Acquisition Act 1894 will lapse on the commencement of the 2013 Act, if "compensation has not been paid".

The question in the case was whether deposit of compensation by the Government in Government treasury can be regarded as "paid" within the meaning of Section 24(2).

The 5-judge bench also held that the word "or" in Section 24(2) should be read as "and". This means that the proceedings under old LA Act will lapse only if there is failure to take possession "and" failure to pay compensation.

- If possession taken but compensation not paid, there is no lapse.
- If compensation paid but possession not taken, then also no lapse of proceedings under 1894 Land Acquisition Act.

The questions referred to the Constitution Bench were answered in the following manner:

1. Under the provisions of Section 24(1)(a) in case the award is not made as on 1.1.2014 the date of commencement of Act of 2013, there is no lapse of proceedings. Compensation has to be determined under the provisions of Act of 2013.
2. In case the award has been passed within the window period of five years excluding the period covered by an interim order of the court, then proceedings shall continue as provided under Section 24(1)(b) of the Act of 2013 under the Act of 1894 as if it has not been repealed.
3. The word 'or' used in Section 24(2) between possession and compensation has to be read as 'nor' or as 'and'. The deemed lapse of land acquisition proceedings under Section 24(2) of the Act of 2013 takes place where due to inaction of authorities for five years or more prior to commencement of the said Act, the possession of land has not been taken nor compensation has been paid. In other words, in case possession has been taken, compensation has not been paid then there is no lapse. Similarly, if compensation has been paid, possession has not been taken then there is no lapse.
4. The expression 'paid' in the main part of Section 24(2) of the Act of 2013 does not include a deposit of compensation in court. The

consequence of non-deposit is provided in proviso to Section 24(2) in case it has not been deposited with respect to majority of land holdings then all beneficiaries (landowners) as on the date of notification for land acquisition under Section 4 of the Act of 1894 shall be entitled to compensation in accordance with the provisions of the Act of 2013.

5. In case a person has been tendered the compensation as provided under Section 31(1) of the Act of 1894, it is not open to him to claim that acquisition has lapsed under Section 24(2) due to non-payment or non-deposit of compensation in court. The obligation to pay is complete by tendering the amount under Section 31(1).
6. The proviso to Section 24(2) of the Act of 2013 is to be treated as part of Section 24(2) not part of Section 24(1)(b).
7. The mode of taking possession under the Act of 1894 and as contemplated under Section 24(2) is by drawing of inquest report/memorandum. Once award has been passed on taking possession under Section 16 of the Act of 1894, the land vests in State there are no divesting provided under Section 24(2) of the Act of 2013, as once possession has been taken there is no lapse under Section 24(2).
8. The provisions of Section 24(2) providing for a deemed lapse of proceedings are applicable in case authorities have failed due to their

inaction to take possession and pay compensation for five years or more before the Act of 2013 came into force.

9. Section 24(2) of the Act of 2013 does not give rise to new cause of action to question the legality of concluded proceedings of land acquisition. Section 24 applies to a proceeding pending on the date of enforcement of the Act of 2013, i.e., 1.1.2014. It does not revive stale and time-barred claims and does not reopen concluded proceedings nor allow landowners to question the legality of mode of taking possession to reopen proceedings or mode of deposit of compensation in the treasury instead of court to invalidate acquisition.

Main Features

- **Consent:** For government projects, no consent is required while consent of 70 per cent of landowners is required for Public-Private Partnership (PPP) projects and 80 per cent for private projects.
- **Social Impact Assessment:** In the case of a land acquisition (irrespective of the ownership of project), Social Impact Assessment is necessary unless and until there is an urgency. If the project is for irrigation, then Environmental Impact Assessment is required.
- **Irrigated multi-cropped land:** In case the land in question is irrigated multi-cropped, it cannot be acquired beyond a limit specified by the state government.

- **Limitations:** The Central Act of 2013 was brought to give effect to pre-existing fundamental right to livelihood of citizens. It ensures that livelihood will not be taken away unless

- It is in public interest and that is seen by social impact assessment
- The affected citizens are given rehabilitation

The amendments made without considering the above factors will take away fundamental rights of the citizens.

- **Safeguards:** State Governments have to set up dispute settlement Chairman and he should be a district judge or practicing as a lawyer for 7 years. The Act also has provision for the establishment of Land Acquisition, Rehabilitation and Resettlement Authority for speedy disposal of disputes.
- **Return of land:** If the project doesn't start in 5 years, the land acquired under the Act has to be returned to the original owner or the land bank.
- Compensation under the 2013 Land Acquisition Act
 - Compensation varies with the market rates. In the case of rural area, it is four times the market rate and for an urban area, it is two times. Affected artisans, small traders, fisherman etc. by the land acquisition are given one-time payment even if they do not own any land.

- There is also provision for rehabilitation and resettlement award which includes employment to one member of an affected family.
- If Government acquires the lands for a private company, the said private company will be responsible for relief and rehabilitation of the affected people along with an additional rehabilitation package for SC/ST owners.
- Fertile, irrigated, multi-cropped farmland can be acquired only in last resort: If such fertile land is acquired, the Government will

have to develop an equal size of wasteland for agriculture purpose.

- In case someone is not satisfied with an award under the Act, they can approach the Land Acquisition, Rehabilitation and Resettlement (LARR) Authority.

Way Forward

Social movements protesting forceful land acquisition in India have mobilized to compel important amendments to the law and make the state and corporations accountable to impacted communities, at least on paper, on the other hand these very laws are constantly sought to be reversed by dominant forces in order

to cement a neoliberal order in the trade of land and natural resources. The strict implementation of these laws, however diluted they may be, is ground for yet another battle. 🏹🏹🏹

General Studies Paper- II

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

General Studies Paper- III

Topic: Land reforms in India.

05 Shared Economy : Prospects in India

Why in News?

As per the report titled 'Shared Economy — India Story,' the shared economy in India is estimated to be an about \$2 billion industry by the end of the current year.

Introduction

Shared economy is an emerging concept, as the global industry has evolved from sharing transactions between friends and family to a multi-billion dollar industry today which is fairly organized and institutionalized. Shared economy from a conventional definition is a "the peer-to-peer based activity of obtaining, giving, or sharing access to goods and services", through the use of community-based platforms (often digital).

As per the report titled 'Shared Economy — India Story,' the 'shared economy' includes segments such as co-working (Awfis, WeWork India), co-living (Stanza Living, OYO Life, Oxford Caps), shared mobility (Uber, Ola, Shuttli) and furniture rental (Furlenco, Rentomojo.) The market size for the co-working sector is pegged at \$500 million, while that for co-living is estimated to be \$400 million, shared mobility at over \$630 million, and furniture rental at \$200 million. The report noted that about \$3.7 billion worth of capital has been infused in India in such services till now, adding that a similar amount is expected to be infused in the next couple of years.

Shared economy has now become viral especially with the millennial generation owing to changing mindsets

and preferences of moving towards experiential consumption rather than asset ownership. This is also on back on a much more dynamic work environment where locational and job mobility has increased manifold. It has grown by 60% from 1997 to 2014. The shared economy is expected to reach a value of \$335 billion by 2025. The industry has attracted over \$26 bn dollars in funding over the last 15 years.

Shared Economy in India

Indian economy has displayed mounting acceptance to sharing economy in transport, hospitality and co-working space segments despite being in its budding phase. As per the report titled 'Shared Economy — India Story,' the shared economy in India is estimated

to be an about \$2 billion industry by the end of the current year. Given high mobile penetration, high millennial concentration, and an aspirational population, Asia has highest willingness to use shared assets. India mirrors Asia trends in these aspects and is thus poised for high growth and adoption of shared services. India is at the cusp of a shared economy revolution. India is witnessing phenomenal growth in this segment with both international companies and home-grown start-ups vying for market share. Even as the space is nascent, over \$3.7 bn has been invested in this space and we expect this to accelerate from here, on the back of compelling demand and unit economics.

Drivers of the Shared Economy in India

There are several drivers for the growing popularity of the sharing economy in India such as:

1. Urbanization

Every year, more and more people are migrating to metro cities in search for better job opportunities, thus urban areas are seeing rising migrating population. World Bank estimates the percentage of people in urban areas to be 34% approx. in 2018 and predicts 40.76% of country's population to be residing in urban areas by 2030. Increasing population density, rising real estate costs, scarce public resources, commute intensity and lack of time has enhanced accelerated adoption of shared businesses.

2. Demographic Factors

With the second highest population in the world at over 1.3 billion, India has one of the largest consumer markets in the world. With 64% of the population aged between 15 and 59, the demography is highly concentrated amongst the youth.

3. Digital Connectivity

India has become the second fastest digital economy in the world, after China. This has been due to rapid growth in smartphone ownership, internet penetration and online transactions. In India, smartphone users are increasing, predicted to reach 859 million users in 2022, from 373 million in 2019. The rapid internet penetration and adoption is enabling speedier reach and access to shared services.

4. Convenience and Economic Incentives for Consumers

Paying for on-demand temporary services or "pay as you use" is cheaper than a long-term purchase, due to a more favorable allocation of resources. According to a study by PWC, privately-owned vehicles go unused for 95% of their lifetime, thus, allowing for better rental prices on shared economy platforms such as Uber and Ola. In the office rental sector, it is much more cost effective to use community based co-working spaces, rather than purchasing or renting commercial space at least till a certain scale. Thus effective cost of use and convenience are driving growth in shared businesses.

5. Changing Perceptions- Experience v/s Ownership

Awareness through mobile/digital connectivity, aspirational mindset limited resource and availability of consumer credit are some of the driving factors of growth in 'rent v/s buy' phenomena especially among the millennials. The Indian consumption mind-set is evolving with the youth preferring access over ownership, and this has led consumption patterns to shift towards shared platforms.

6. **Other factors** are trends towards nuclear families and singlehood; lower barriers to entry for new entrants/service providers; psychological and social benefits; environmentally optimal; and better resource utilization for consumers.

Benefits

Benefits reaped by consumers, service providers, and economy are given below:

1. Consumers

- Better prices; On-demand services; Customizability; Convenience and flexibility; and Greater choice and variety.

2. Service Providers

- Larger economies of scale; Greater and faster market reach; Diverse customer base; Network effect; and Brand creation.

3. Economy

- Technological advancements; Efficient use of under utilized resources; Environmentally

sustainable; Sense of trust in the community; and Consumption led growth.

Related Regulations

Regulations in Co- working

The segment is still nascent, and therefore there is no specific policy or regulatory framework defined. The existing businesses are working on a framework of service businesses and therefore applying Goods and Services Tax (GST) provisions therein. Given the impetus this gives to start ups and emerging businesses and the fact that smaller businesses have the opportunity to operate out of high quality and compliant premises encouragement and incentives would certainly augment the space going forward.

Regulations in Co- living

This segment is still nascent, and therefore there is no specific policy or regulatory framework defined. The existing businesses are working on a framework of service businesses and therefore applying GST provisions therein. Eventually bringing this as par with residential living and its treatment for GST would make it even more attractive.

Regulations in Shared Mobility

The Motor Vehicles Act, 1988 ("MV Act") governs carrying of passengers for hire or reward, which requires a permit. As the personal ride sharing concept is in nascent stage, there is no independent legislation to govern it and is regulated by the MV Act. The MV Act does not create any distinction between the personal and the commercial ride

sharing. Given the recent upsurge in the private car pooling space, the Government of India is considering to firm up guidelines for ride sharing by private car owners. It has further indicated that carpooling should be done through mobile application and the state should get some revenue from aggregators. The government has not given any formal indication as to how the guidelines will look like and one has to wait for the formal announcement to ascertain the actual impact.

Regulations in Furniture Rental

Given that the furniture rental business involves leasing of furniture, uncertainty surrounds the exact business model as this can be viewed as a financial lease or a service. Prima facie, it seems unlikely that furniture rental business will be considered as a financial lease, however, it would depend on the terms and conditions of the rental between the parties.

Way Forward

The potential benefits of sharing economy could not be undermined though a regulatory or legal framework besides self – regulatory structure will strengthen it further, especially in an emerging nation like India. There seems to be substantive evidence to support that sharing economy potentially has a strong competence to transform current unsustainable patterns of consumption to more sustainable lifestyles. There is a probability of radical change other than the incremental improvements accomplished by technological progress and economic instruments; together they are capable of improving the

existing scope of mass consumerism. By legalising these platforms and enforcing regulations, government could promote efficient operation of such businesses leading to better and optimal utilisation of public resources. Indian government is promoting start-up culture through its most acknowledged 'start-up India' reform'. Several institutes and government bodies are encouraging and mentoring these start-ups to make a better India for future generations to come and sharing economy, undoubtedly is quite promising on that aspect.

In addition, technology has helped the sharing economy advance to where it is today—and, the trend should only continue as we become more connected digitally. While we've seen how dominant collaborative consumption can be in industries like transportation, consumer goods, and services, many other traditional sectors will soon experience changes because of the sharing economy.

Finally, in this era of growing concern on climate, wastage, resource scarcity and population intensity (especially in the developing world), shared economy seems to be sustainable, scalable and efficient form of addressing these concerns. 🌐🌱🌍

General Studies Paper- III

Topic: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

06 Maritime Sector : New Opportunities for India

Why in News?

In recent years, there have been discussions at various levels, highlighting the potential of the maritime sector in bringing down logistics costs, making the economy more competitive, and thereby help push up exports and the consequential positive spinoff effect on the economy have been sidelined in Union Budget 2020-21.

Introduction

Maritime transport is a critical infrastructure for the social and economic development of a country. It influences the pace, structure and pattern of development. The Ministry of Shipping encompasses within its fold shipping and ports sectors which include shipbuilding and ship-repair, major ports, national waterways, and inland water transport. Ministry of Shipping has been entrusted with the responsibility to formulate policies and programmes on these subjects and their implementation.

According to the Ministry of Shipping, around 95% of India's trading by volume and 70% by value is done through maritime transport. India has 12 major and 205 notified minor and intermediate ports. Under the National Perspective Plan for 'Sagarmala', six new mega ports will be developed in the country. The Indian ports and shipping industry play a vital role in sustaining growth in the country's trade and commerce. India is the sixteenth largest maritime country in the world, with a coastline of about 7,517 km. The

▪ Reducing the cost of transporting domestic cargo through optimizing modal mix

▪ Optimizing time/cost of EXIM container movement

Reduction of logistics cost for EXIM and domestic trade with minimal infrastructure investment

▪ Lowering logistics cost of bulk commodities by locating future industrial capacities near the coast

▪ Improving export competitiveness by developing port proximate discrete manufacturing clusters

Indian Government plays an important role in supporting the ports sector. It has allowed Foreign Direct Investment (FDI) of up to 100% under the automatic route for port and harbour construction and maintenance projects. It has also facilitated a 10-year tax holiday to enterprises that develop, maintain and operate ports, inland waterways and inland ports.

The Indian Navy too, is giving a strong push to the 'Make in India' initiative as it strives for self-reliance in the production of warships. Also, in view of the recent regulations to control emissions from ships set by International Maritime Organization, there will be a growing need to collaborate for environment-friendly technology & solutions, such as LNG powered vessels, as well as green ports.

In the pursuit of these endeavours, another key area is training & development of manpower, university partnerships to encourage innovation, knowledge sharing and transfer through partnerships and technological

assistance from maritime countries to orient the workforce towards world-class manufacturing techniques and processes.

Need for Port-Led Development in India : Scope and Challenges

India is one of the fastest growing large economies in the world with a GDP growth rate of 7.3% in 2018-19 and ports play an important role in the overall economic development of the country. Approximately 95 % of India's merchandise trade (by volume) passes through sea ports. Many ports in India are evolving into specialized centres of economic activities and services and are vital to sustain future economic growth of the country such as JNPT, Mundra Port, Sikka Port, Hazira Port etc.

However, Indian ports still have to address infrastructural and operational challenges before they graduate to the next level. For example, operational efficiency of Indian ports has improved

over the years but still lags behind the global average. Turnaround time (TAT) at major ports was approximately 2.5 days in 2018-19, whereas global average benchmark is 1-2 days. Some of the private sector ports in India like Mundra and Gangavaram, have been able to achieve a turnaround time of around 2 days.

Secondly, last mile connectivity to the ports is one of the major constraints in smooth movement of cargo to/from the hinterland. Around 87% of Indian freight uses either road or rail for transportation of goods. A significant share of this cargo experiences "idle time" during its transit to the ports due to capacity constraints on highways and railway lines connecting ports to production and consumption centers. Although water-borne transport is much safer, cheaper and cleaner, compared to other modes of transportation, it accounts for less than 6% of India's modal split. By comparison, coastal and inland water transportation contribute to 47% of China's freight modal mix. While in Japan and US, this share is 34% and 12.4% respectively. Significant savings can be achieved by shifting movement of industrial commodities like coal, iron ore, cement and steel to coastal and inland waterways.

The capital cost of the Internal Waterway network, as planned, is estimated at over 22,763 crore. In addition, there would be capital spends on terminals, jetties, godowns, manufacturing/repair yards, as well as vessels/boats, the estimates of which, is not readily available.

Under Sagarmala, 574 projects for port modernisation, port connectivity, port-led industrialisation, coastal shipping routes have been approved. The projects identified involve an investment of around Rs 6.01 lakh crore, and are to be implemented between 2015-2035.

March 2018, a revised Model Concession Agreement (MCA) was approved to make port projects more investor-friendly and make investment climate in the sector more attractive.

'Project UNNATI' has been started by Government of India to identify the opportunity areas for improvement in the operations of major ports.

Vision of the Sagarmala Programme is to reduce logistics cost and time for the movement of EXIM and domestic cargo. Development of port-proximate industrial capacities near the coast, in future, is a step in this direction. In this regard, the concepts of Coastal

Economic Zones (CEZs), Coastal Economic Units (CEUs), Port-Linked Industrial & Maritime Clusters and Smart Industrial Port Cities have been introduced.

- **Coastal Economic Zones (CEZs):** CEZs could be spatial economic regions comprising of a group of coastal districts or districts with a strong linkage to the ports in that region. CEZs are also envisaged to tap synergies with the planned industrial corridor projects

- **Coastal Economic Units (CEUs):** CEUs will be specific industrial estate projects with a demarcated boundary similar to the Delhi–Mumbai Industrial Corridor (DMIC) nodes. The CEUs will house the industrial clusters/projects proposed within the CEZ.

Each CEZ will consist of multiple CEUs and more than one industrial cluster can be housed within a CEU. Within each industrial cluster there can be several manufacturing units. To accelerate the CEU development process, it is proposed that CEUs be prioritized in locations where land parcels are available in areas close to a deep draught port and with strong potential for manufacturing.

An Inter-Ministerial Committee (IMC) was constituted under the aegis of NITI Aayog for development of CEZs in India. As recommended by IMC, the institutional framework for development of CEZs would be similar to the institutional framework adopted by Delhi–Mumbai Industrial Corridor Development Corporation (DMICDC) for development of industrial corridors and industrial node.

► Ministry of Shipping

The Department of War Transport was formed in July, 1942, by the bifurcation of the then Department of Communications into two Departments Viz. (i) Department of Posts and (ii) Department of War Transport. During the year 1957 the Department of War Transport was renamed as Ministry of Transport & Communications and Department of Transport was placed under it.

Ministry of Shipping and Ministry of Road Transport has again been merged and renamed as Ministry of Shipping, Road Transport and Highways vide notification dated 2.9.2004.

The National Maritime Day was first celebrated on April 5, 1964. National Maritime Day is celebrated on April 5 every year.

Road Ahead for Maritime Sector

A comprehensive policy package is necessary to address the diverse issues facing the maritime transport sector. The capacity of the ports in terms of their berths and cargo handling equipment needs to be vastly improved to cater to the growing requirements of the overseas trade. The shipping industry needs to be enabled to carry higher shares of the sea-borne trade in indigenous bottoms.

Historically, investment in the transport sector, particularly in the ports, have been made by the State mainly because of the large volume of resources required, long gestation periods, uncertain returns and various externalities, both positive and negative, associated with this infrastructure. However, the galloping resource requirements and the concern for managerial efficiency and consumer responsiveness have led to the active involvement of the private sector in infrastructure services in recent times. To encourage private participation, Ministry of Shipping has laid down comprehensive policy guidelines for private sector participation in the Ports sector.

Increasing investments and cargo traffic point towards a healthy outlook for the Indian ports sector. Providers of services such as operation and maintenance (O&M), pilotage and harbouring and marine assets such as barges and dredgers are benefiting from these investments.

The capacity addition at ports is expected to grow at a CAGR of 5-6 per cent till 2022, thereby adding 275-325 MT of capacity.

Under the Sagarmala Programme, the government has envisioned a total of 189 projects for modernisation of ports involving an investment of Rs 1.42 trillion (US\$ 22 billion) by the year 2035.

Ministry of Shipping has set a target capacity of over 3,130 MMT by 2020, which would be driven by participation from the private sector. Non-major ports are expected to generate over 50 per cent of this capacity.

India's cargo traffic handled by ports is expected to reach 1,695 million metric tonnes by 2021-22, according to a report of the National Transport Development Policy Committee.

Within the ports sector, projects worth an investment of US\$ 10 billion have been identified and will be awarded over the coming five years.

Conclusion

The maritime sector in India has not been able to contribute to the Indian growth story as per its potential. The sector has remained small and marginal, with activities remaining concentrated among few shipping companies, the major ports and the government-owned shipyards catering mostly to captive needs. Inland waterways transport, once an important activity, especially in the riverine route, had also been relegated in the country's cargo transport.

Over the past five years, the maritime sector has been brought back into focus in various official and

commercial discussions. Gradual policy-induced switch to maritime mode and its consequential benefits have been appreciated and investments planned/proposed. Most of these investments are in enabling infrastructure, and could lead to decentralized growth. None of these investment programmes appear to have found explicit mention in the Union Budget. Considering the benefits which could accrue, it is desirable that the maritime proposals can be prioritized, so that projects with the maximum linkage effects can be included in the Infrastructure Pipeline. As it grows to be one of the major economies in the world, India will require a vibrant and strong maritime industry for economic as well as strategic reasons. There are many factors conducive to the development of a robust and sustainable maritime sector.

Finally, it will depend on how the different stakeholders utilize the opportunities presented to them to transform the sector into an engine of growth for India. Therefore, while 2016 was viewed as the year for enabling the maritime sector's transformation, it seems in 2020 India is on the cusp of major maritime revolution which will play out over the next couple of years. < > < >

General Studies Paper- III

Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

07 Sand Mining Rules in India : An Analysis

Why in News?

Ministry of Environment, Forests and Climate Change has released guidelines to monitor and check illegal sand mining in the country after NGT's Order. The 2020 Guidelines therefore plugs the loopholes of the previous guidelines and focuses on enforcement and implementation aspect and ways to strictly monitor and address the issue of illegal sand mining.

Introduction

Our modern civilization is built on sand: concrete, paved roads, ceramics, metallurgy, petroleum fracking—even the glass on smart phones—all require the humble substance. River sand is best while grains of desert sand are often too rounded to serve as industrial binding agents, and marine sand is corrosive. A United Nations study calculates, however, that humankind's total consumption of sand—more than 40 billion tons a year—is now double the amount of sediments being replenished naturally on the Earth by the sum of the world's rivers.

Sand is a minor mineral, as defined under section 3(e) of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act). Section 15 of the MMDR Act empowers state governments to make rules for regulating the grant of mineral concessions in respect of minor minerals and for purposes connected therewith. The regulation of grant of mineral concessions for minor minerals



The National Green Tribunal has been established on 18.10.2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

is, therefore, within the legislative and administrative domain of the state governments. Under the power granted to them by section 15 of the MMDR Act, State Governments have framed their own minor minerals concession rules. The natural endowment of sand across many states is unable to meet the demand, coupled with the ease of extraction issues of environmental degradation, pricing and illegalities in sand mining have arisen.

Stripping rivers of their sand causes water tables to drop—an ominous concern in India, where millions already face historic water shortages. Massive sand mining also has eroded river deltas across Asia, exposing coastal communities to severe land loss, and worsening the effects of climate change-induced sea level rise.

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 suggest that the source of sand in India are through :

- River (riverbed and flood plain),
- Lakes and reservoirs,
- Agricultural fields,

- Coastal / marine sand,
- Palaeo-channels and
- Manufactured Sand (M-Sand).

Illegal Sand Mining

India's sand mining issues tend to revolve around efforts to curb illegal mining. A number of steps have been taken by different State Governments to control illegal mining in sand.

Illegal mining in sand is basically of two types:

- Illegal extraction from the un-notified areas
- Illegal extraction over the permissible limits

Majority of the registered cases of illegal mining are related to illegal transportation where the transportation of sand is without a valid transport permit. Another way of illegal mining is through illegal transportation of sand from one State to other in cases where the inter-state transportation of sand is banned.

Section 23C of the MMDR Act, 1957 empowers state governments to frame rules to prevent illegal mining,

transportation and storage of mineral sand for purposes connected therewith. Control of illegal mining is, therefore, under the legislative and administrative jurisdiction of state governments.

India's sand mining problem is so prevalent that it has developed into a black market that continues to exploit millions of tons of this commodity annually, in an open loot of the riverbeds, canals and beaches sand is being drained by illegal means.

Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause hazardous impact on ecological equilibrium of riverine regime.

Sustainable-Sand-Mining-Management-Guidelines-2016

It provides for a detailed program for ensuring that mining of river sand is done in a sustainable manner:

i. Grant of Environment Clearance for minor minerals, including sand and gravel, for mining lease of area up to 5 hectare will be done by the District Environment Impact Assessment Authority headed by the District Collector / District Magistrate.

ii. Removal of sand accumulated on the agricultural field after cessation of flooding will not be considered as mining operation and its removal and selling can be allowed without the requirement

of environment clearance till it is done only to the extent of reclaiming the agricultural land.

iii. Exemption of certain cases from being considered as mining for the purpose of requirement of environment clearance like:

- (i) Extraction of ordinary clay or ordinary sand manually by hereditary Kumhars (Potter) who prepare earthen pots on a cottage industry basis;
- (ii) Extraction of ordinary clay or ordinary sand manually by earthen tile makers who prepare earthen tiles on a cottage industry basis;
- (iii) Removal of sand deposited on agricultural field after flood by owner farmers;
- (iv) Customary extraction of sand and ordinary earth from sources situated in Gram Panchayat for personal use or community work in village;
- (v) Community works like desilting of village ponds / tanks, rural roads under taken in MGNREGS and other Government sponsored schemes;
- (vi) Dredging and desilting of dam, reservoirs, weirs, barrages, river, and canals for maintenance and upkeep and avert natural disaster provided the dredged material is used departmentally.

Enforcement and Monitoring Guidelines for Sand Mining 2020

The enforcement guidelines focus on the effective monitoring of sand mining from the identification of sand mineral

sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country. Its salient features are as follows:

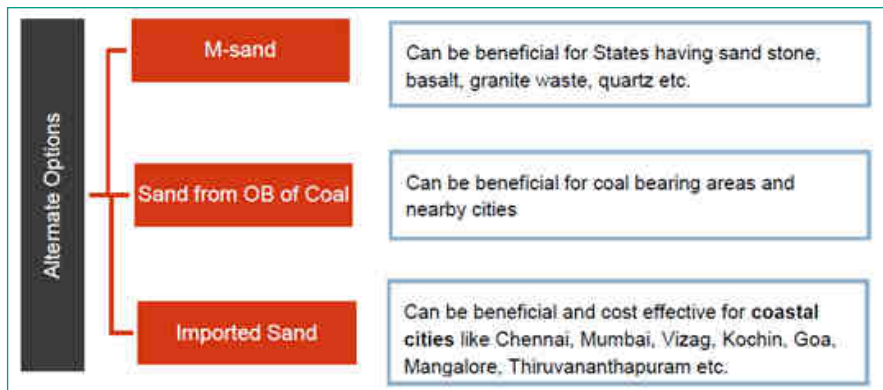
- directions to states to carry out river audit
- Conduct detailed survey reports of all mining areas and post the reports online and in the public domain,
- conduct replenishment studies of river beds,
- No riverbed mining will be allowed during the monsoon.
- constantly monitor mining with drones, aerial surveys, ground surveys and
- Setting up of dedicated task forces at district levels.
- Sale and purchase of sand and river bed material (RBM) online to make the process more transparent.

The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night-vision drones.

Alternate Options for River Sand

M-Sand

Manufactured Sand (M-sand) is the most common alternate of river sand, which has already gained prominence in some of the southern States. It is produced by crushing of rocks, quarry stones to a stipulate size of 150 microns.



To arrive at the required grain size, existing coarser hard rock deposits are crushed in a series of crushers and the crushed material is segregated in different fractions as suited to various construction activities. The sand obtained through this process is further refined by removing fine particles and impurities through sieving and washing. M-sand has a silt content of around 0.2% and water absorption of 1.6%, as compared to 0.45% and 1.15% respectively, in river sand. M-sand concrete has marginally higher bond strength, and mortar made of M-sand shows higher compressive strength and modulus for masonry, over those of river sand.

- **Sand from Overburden of coal mines**

The overburden spread over in situ coal seam needs to be removed for extraction of coal to an external dump till sufficient space is created for internal back filling by acquisition of land nearby coal bearing area. This option is implementable in all coal bearing States, namely, Jharkhand, Bihar,

Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Maharashtra, Gujarat, etc. Further the option is scalable as well with proposal of WCL to set up a sand segregation plant of 200 cubic meters per day capacity near Nagpur.

- **Import of sand for coastal cities**

Another way to meet the demand could be to import sand. Some of the south-east Asian countries e.g. Malaysia/ Indonesia have ample sand available in their country, which if not removed could lead to floods. The sand could be sourced from these countries and imported to Indian ports to meet the deficit. However, it needs to be considered that while importing sand from other countries, sand should qualify for IS 383 quality standard as well as be free from any phyto-sanitary issues. To ensure this, the imported sand should have quality checks at the following two points.

- In the country from where sand is sourced.
- At the port where the sand comes.

Karnataka has already formed rules to allow sale of imported sand in

the State and have already started the imports. Tamil Nadu is preparing to import sand. Kerala also has permitted imports of sand from Malaysia and the imported sand is sold in loose at the port at a price of Rs. 2300 per tonne. Imported sand, however, tends to be costly and is therefore suitable only for high deficit areas.

Way Forward

Illegal sand mining is a perennial problem in India. But it assumes gargantuan proportions right before the onset of monsoon because swollen rivers make extraction extremely difficult during the rainy season. To make most of the lean period, mine owners and hoarders try to dig out as much sand as possible, through legal and illegal means, in the pre-monsoon months. The enforcement guidelines to stop illegal mining put the hiatus on state government for implementation. But the need of the hour is to adopt a holistic approach. The supply gap if covered will reduce the profitability of the illegal mining. Along with it, creating alternative livelihood options for the seasonal workers will also act as a positive reinforcement. Keeping environment at the priority and awareness about the ill effects of illegal mining are needed to spread. 🌐🌱🌊

General Studies Paper- III

Topic: Conservation, environmental pollution and degradation, environmental impact assessment.

7

SUBJECTIVE QUESTIONS WITH MODEL ANSWERS

01

Pradhan Mantri Ujjwala Yojana : Journey So Far

Q. "To achieve a higher LPG coverage, 'Pradhan Mantri Ujjawala Yojana' should extended to poor households in urban and semi-urban areas." Elaborate.

Hints:

- The Central Government has recently claimed that the target of PMUY has been achieved and has closed the scheme claiming it to have met its said objectives and a successful scheme.
- One of the major barriers for greater LPG usage is the cost of refills. Between 2016 and 2018, the market price of the refill of a 14.2 kg cylinder ranged between Rs 500-837.
- With a stated target of delivering 80 million free LPG connections to poor women, PMUY has emerged as present government's marquee scheme for female empowerment and healthy cooking. Yet for all the claims on expanding LPG coverage, new data suggests that rural India is a long way from completely adopting LPG. From gender based reasons to the structural leakages there is still more left to be done.
- The dangers of cooking on traditional cooking fuels are well know but still the adoption of clean and safe fuel like LPG is low and least preferred in some areas. The implementation of DBTL and post transfer of the subsidy is one of the factors that is needed to be addressed.

02

A New Era for Girls : 25 Years of Progress

Q. How 'Beijing declaration and Platform for Action' is boosting gender equality in India?

Hints:

- The report titled 'A New Era for Girls: Taking Stock on 25 years of Progress' has been released by the United Nations Children's Fund (UNICEF) along with Plan International and United Nations Women.

- In India, the rate of drop-outs for girls in schools has gone down from 20% in 2008 to 13.5% in 2018, but this does not automatically translate into economic and social empowerment. The female workforce participation has been declining from 36.9% in 2008 to 26.7% in 2019.
- While the focus of government schemes is largely on the girl child and women, adolescents tends to fall through the cracks. The government must aggressively focus on policies for adolescents, especially when it comes to gender-based violence.
- Today, adolescent girls and young women also are leading and organizing global movements like "Fridays for the Future" for tackling climate change, and the "#MeToo Movement" against sexual violence and harassment, to call action to where action is needed and show the power behind girls as change makers.

03

Pradhan Mantri Janaushadi Pariyojana : An Overview

Q. Discuss the challenges related to 'Pradhan Mantri Bhartiya Janaushidhi Pariyojana' (PMBJP).

Hints:

- PMBJP is a powerful intervention against the unjustifiable pricing of medicines by private pharmaceutical industry, to make the generic medicines available at affordable prices. The medicines are available at fifty to ninety percent lower price than the market rates at Jan Aushadhi Kendras.
- A study conducted by the Public Health Foundation of India observed that lack of awareness in the public, distribution of free medicines by state governments, poor supply chain, and doctors not prescribing generic medicines are the major constraints faced by the scheme leading to its poor success.
- There is a cozy connection between the medical practitioners and pharmaceutical industries which influences the prescription of most of medical practitioners.

- PMBJP is definitely an ambitious project which can have far reaching impact if it can be executed successfully. However, better planning and better systems need to be brought and implemented at the earliest to plug the gaps that threaten to derail the whole initiative. 

04 Land Acquisition Law in India : Brief Description

Q. How the recent judgment of Supreme Court will affect the Land Acquisition, Rehabilitation and Resettlement act, 2013?

Hints:

- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (also Land Acquisition Act, 2013) is an Act of Indian Parliament that regulates land acquisition and lays down the procedure and rules for granting compensation, rehabilitation and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected.
- Section 24 of the 2013 act provides for various scenarios where land acquisition proceedings were initiated under the earlier land acquisition act of 1894 but was not completed.
- As per Section 24(1)(a), in case land acquisition proceedings were initiated under the 1894 act but the award has not been passed, then compensation has to be determined under the 2013 Act. Section 24(1)(b) provides that where an award under Section 11 of the 1894 act has been made, then such proceedings shall continue under the provisions of the 1894 act.
- The five-judge Bench has interpreted Section 24 (2) which concerns land acquisition compensation awards made five years “prior or more” to the coming of existence of the 2013 Act, which replaced the 1894 law. Further, the court held that a land acquisition proceeding under Section 24(2) would only lapse if the authorities have neither taken physical possession nor paid the

compensation due to the landowner for five or more years prior to January 1, 2014. For this, an “or” in the Section was “interpreted” as an “and”. Thus, there is no lapse if possession has been taken and compensation has not been paid. Similarly, there is no lapse if compensation has been paid and possession not taken of the land. Further, the Bench held that Section 24(2) of the Act of 2013 does not give rise to a new cause of action to question the legality of concluded proceedings of land acquisition. 

05 Shared Economy : Prospects in India

Q. what do you understand by ' Shared Economy'? Also highlight its benefits.

Hints:

Shared economy from a conventional definition is a “the peer-to-peer based activity of obtaining, giving, or sharing access to goods and services”, through the use of community-based platforms (often digital). Shared economy has now become viral especially with the millennial generation owing to changing mindsets and preferences of moving towards experiential consumption rather than asset ownership.

Indian economy has displayed mounting acceptance to sharing economy in transport, hospitality and co-working space segments despite being in its budding phase. India is at the cusp of a shared economy revolution. India is witnessing phenomenal growth in this segment with both international companies and home-grown start-ups vying for market share. Even as the space is nascent, over \$3.7 bn has been invested in this space and we expect this to accelerate from here, on the back of compelling demand and unit economics.

Benefits reaped by consumers, service providers, and economy are given below:

- Consumers- Better prices; On-demand services; Customizability; Convenience and flexibility; and Greater choice and variety.
- Service Providers- Larger economies of scale; Greater and faster market reach; Diverse customer base; Network effect; and Brand creation.
- Economy- Technological advancements; Efficient use of underutilized resources; Environmentally sustainable;

Sense of trust in the community; and Consumption led growth.

- Finally, in this era of growing concern on climate, wastage, resource scarcity and population intensity (especially in the developing world), shared economy seems to be sustainable, scalable and efficient form of addressing these concerns. 

06 Maritime Sector : New Opportunities for India

Q. "As India grows to be one of the major economies in the world, it will require a vibrant and strong maritime industry." Comment.

Hints:

- India is one of the fastest growing large economies in the world with a GDP growth rate of 7.3% in 2018-19 and ports play an important role in the overall economic development of the country. Approximately 95 % of India's merchandise trade (by volume) passes through sea ports.
- The maritime sector in India has not been able to contribute to the Indian growth story as per its potential. The sector has remained small and marginal, with activities remaining concentrated among few shipping companies, the major ports and the government-owned shipyards catering mostly to captive needs. Inland waterways transport, once an important activity, especially in the riverine route, had also been relegated in the country's cargo transport.
- Over the past five years, the maritime sector has been brought back into focus in various official and commercial discussions. Gradual policy-induced switch to maritime mode and its consequential benefits have been appreciated and investments planned/proposed. Most of these investments are in enabling infrastructure, and could lead to decentralized growth. None of these investment programmes appear to have found explicit mention in the Union Budget.
- Considering the benefits which could accrue, it is desirable that the maritime proposals can be prioritized, so that projects with the maximum linkage effects can be included

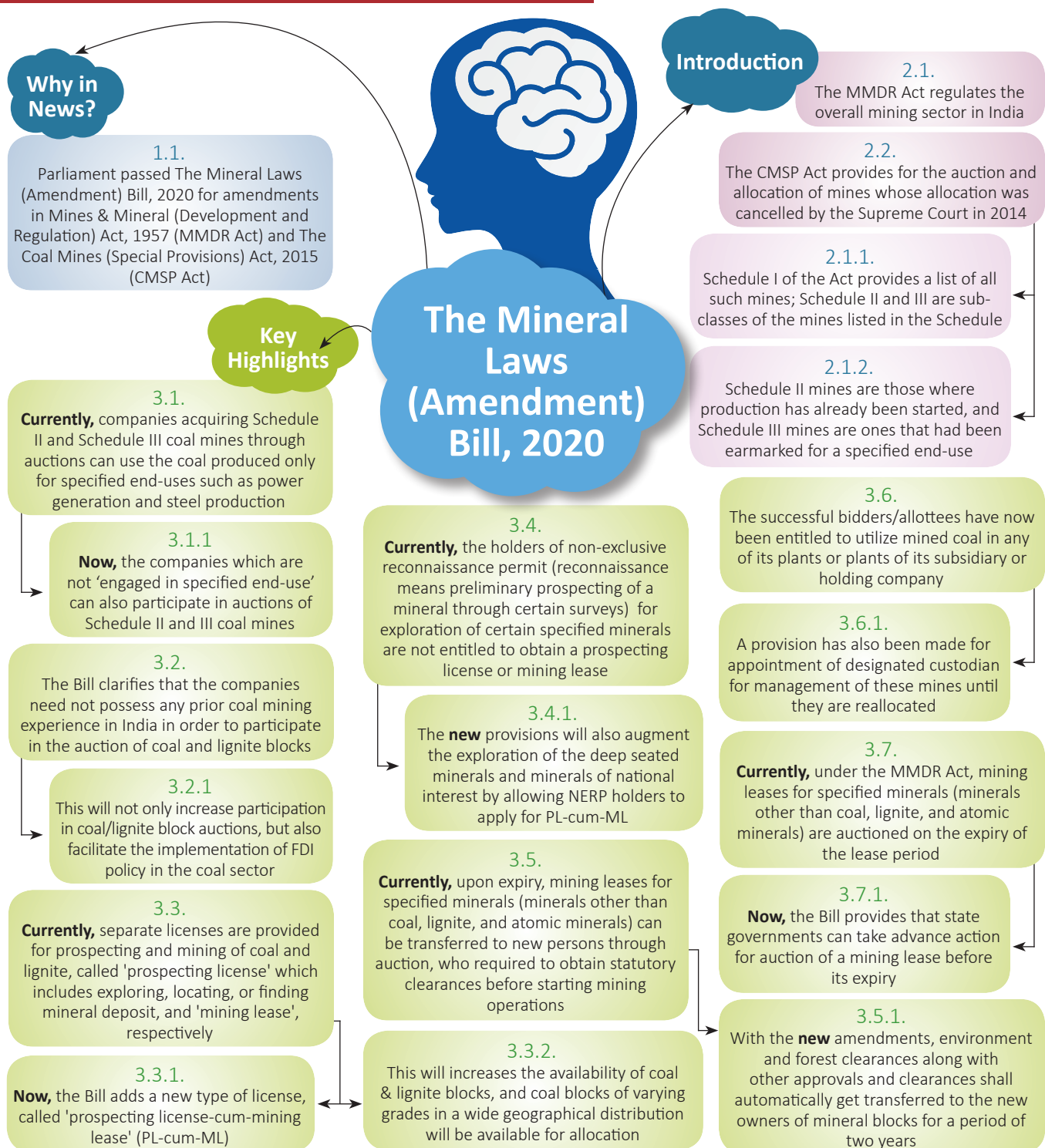
in the Infrastructure Pipeline. As it grows to be one of the major economies in the world, India will require a vibrant and strong maritime industry for economic as well as strategic reasons. There are many factors conducive to the development of a robust and sustainable maritime sector. 

07 Sand Mining Rules in India : An Analysis

Q. Compare the guidelines in India regarding sand mining.

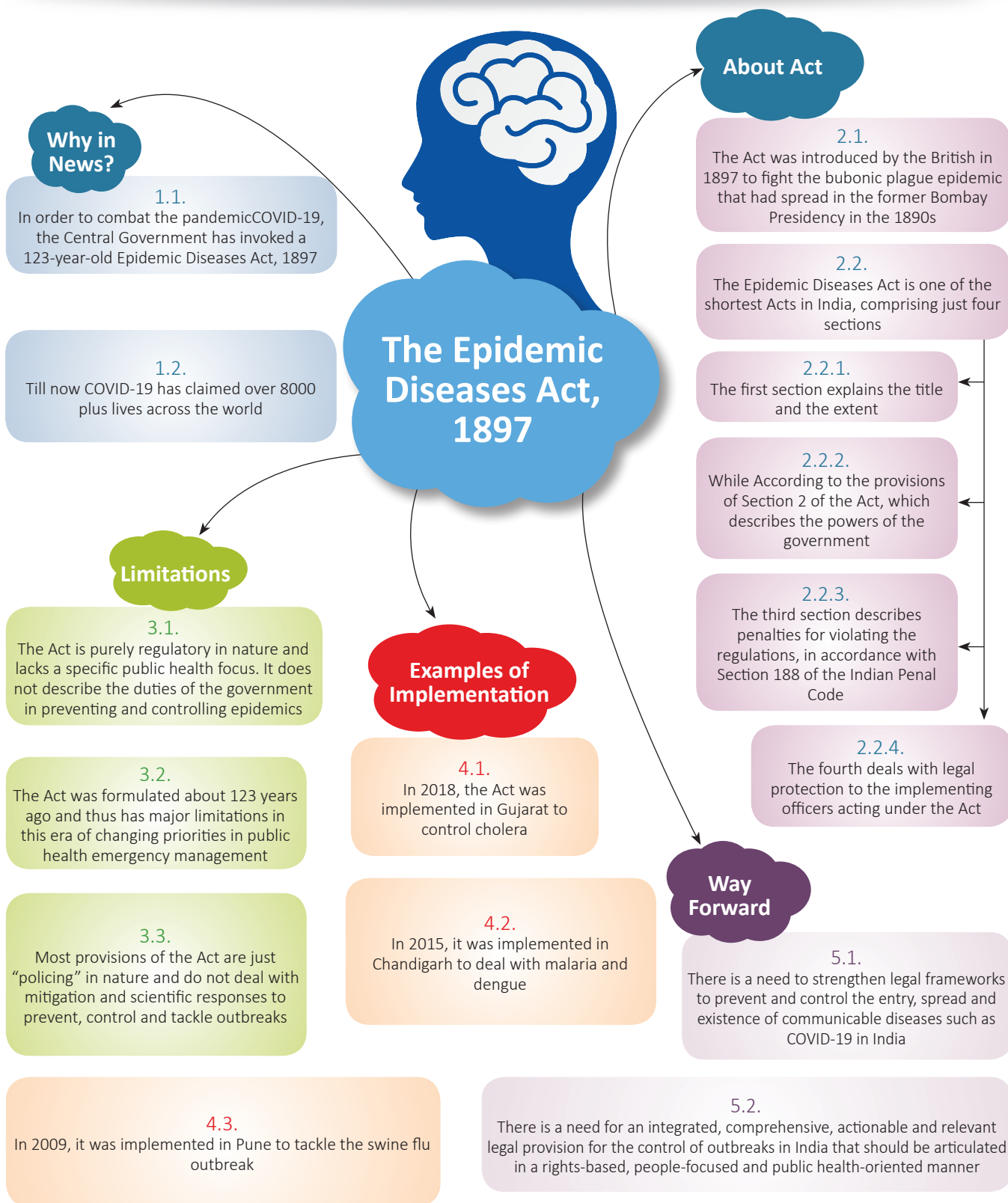
Hints:

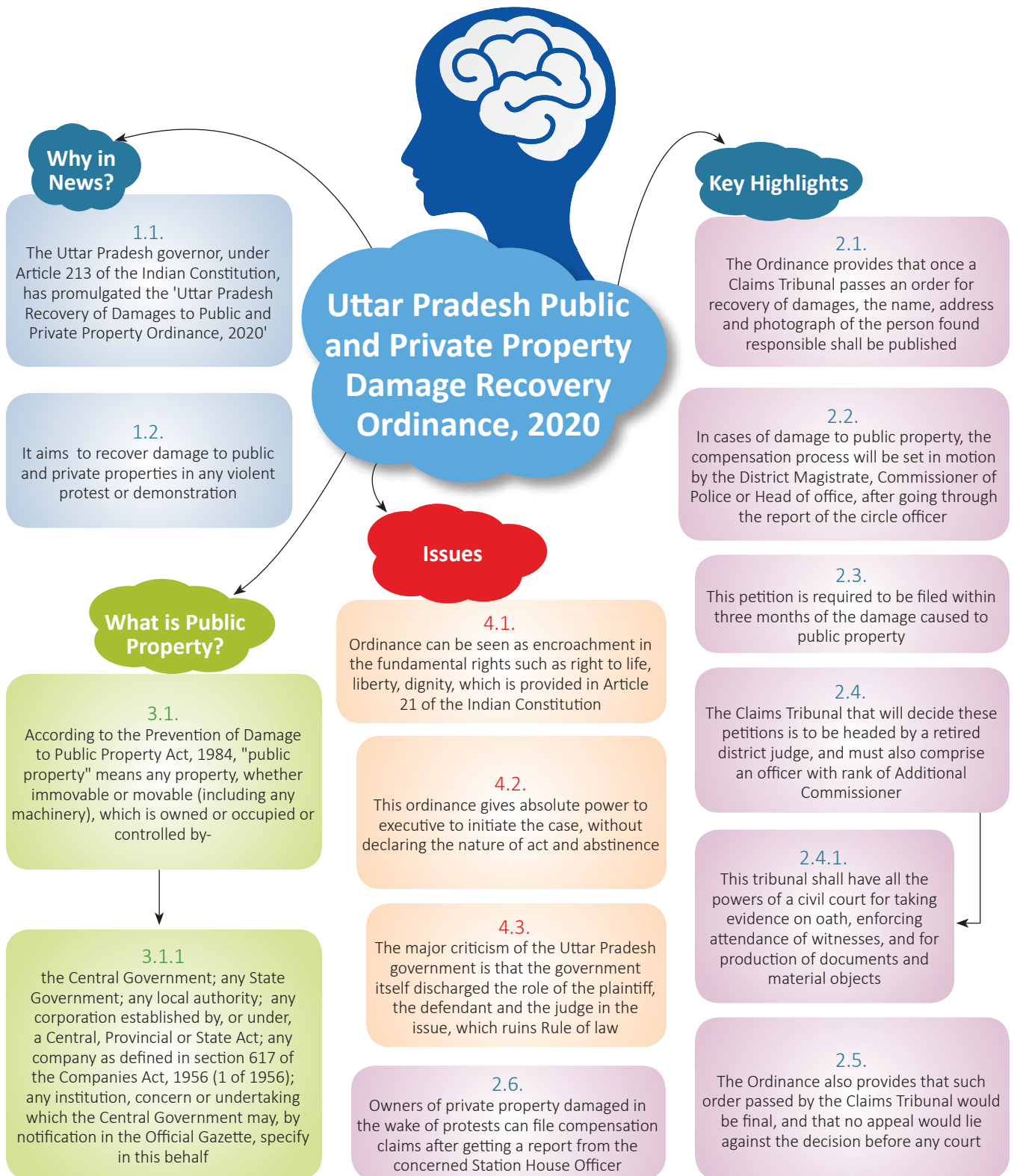
- Sustainable-Sand-Mining-Management-Guidelines-2016 provides for a detailed program for ensuring that mining of river sand is done in a sustainable manner. The enforcement guidelines 2020 focus on the effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country.
- The Enforcement and Monitoring Guidelines for Sand Mining 2020 include directions to states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels.
- While the Sustainable Sand Mining Guidelines, 2016, require the preparation of District Survey Reports (DSR), which is an important initial step before grant of mining lease, the government has found that the DSRs carried out by state and district administrations are often not comprehensive enough, allowing space for illegal mining. The new guidelines, therefore, list a detailed procedure of how the DSRs are to be made, including the development of an inventory, for the first time, of river bed material and other sand sources in the district.
- The New guidelines also push for the sale and purchase of sand and river bed material (RBM) online to make the process more transparent. "In order to curb illegal mining, it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. 

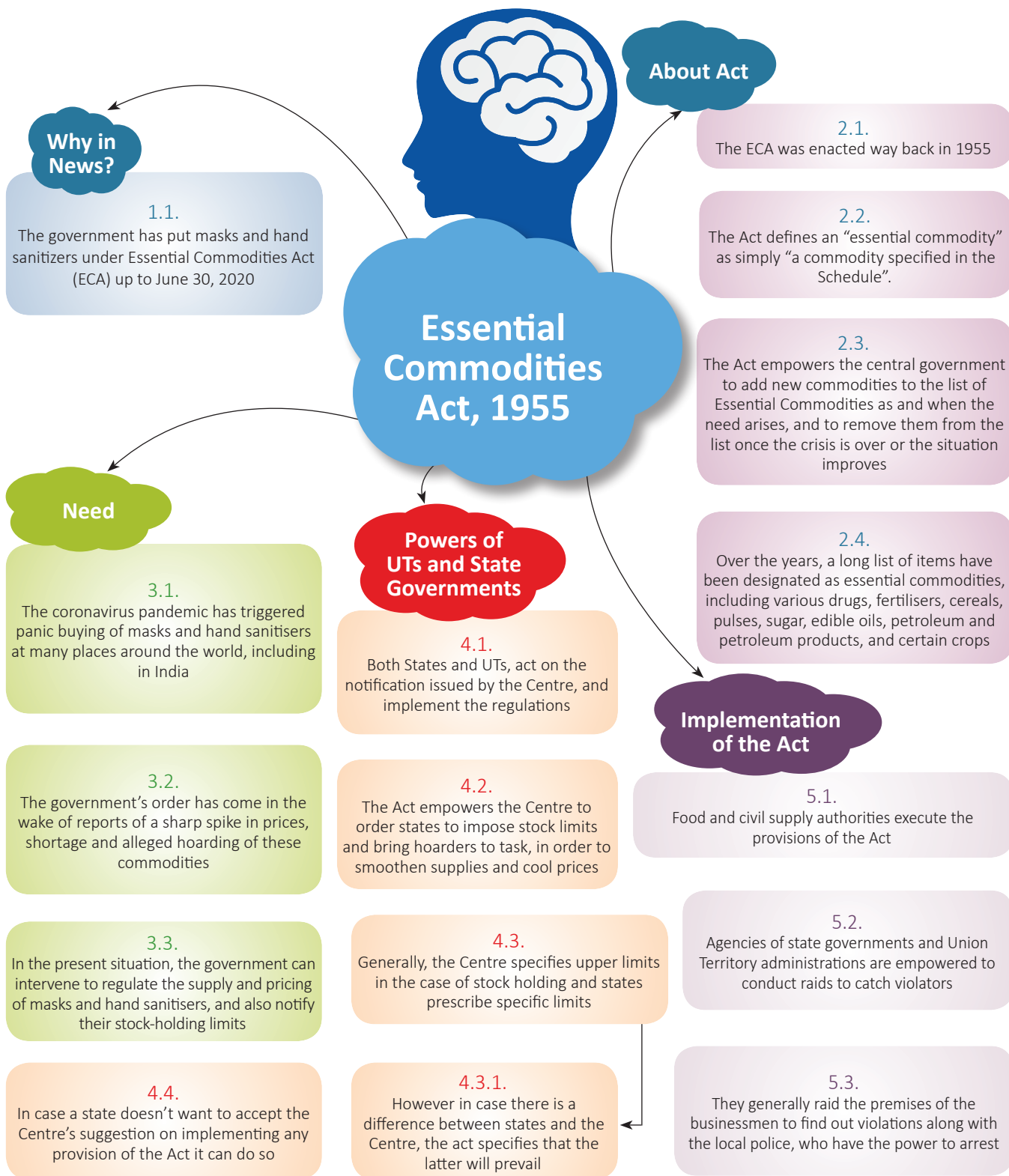


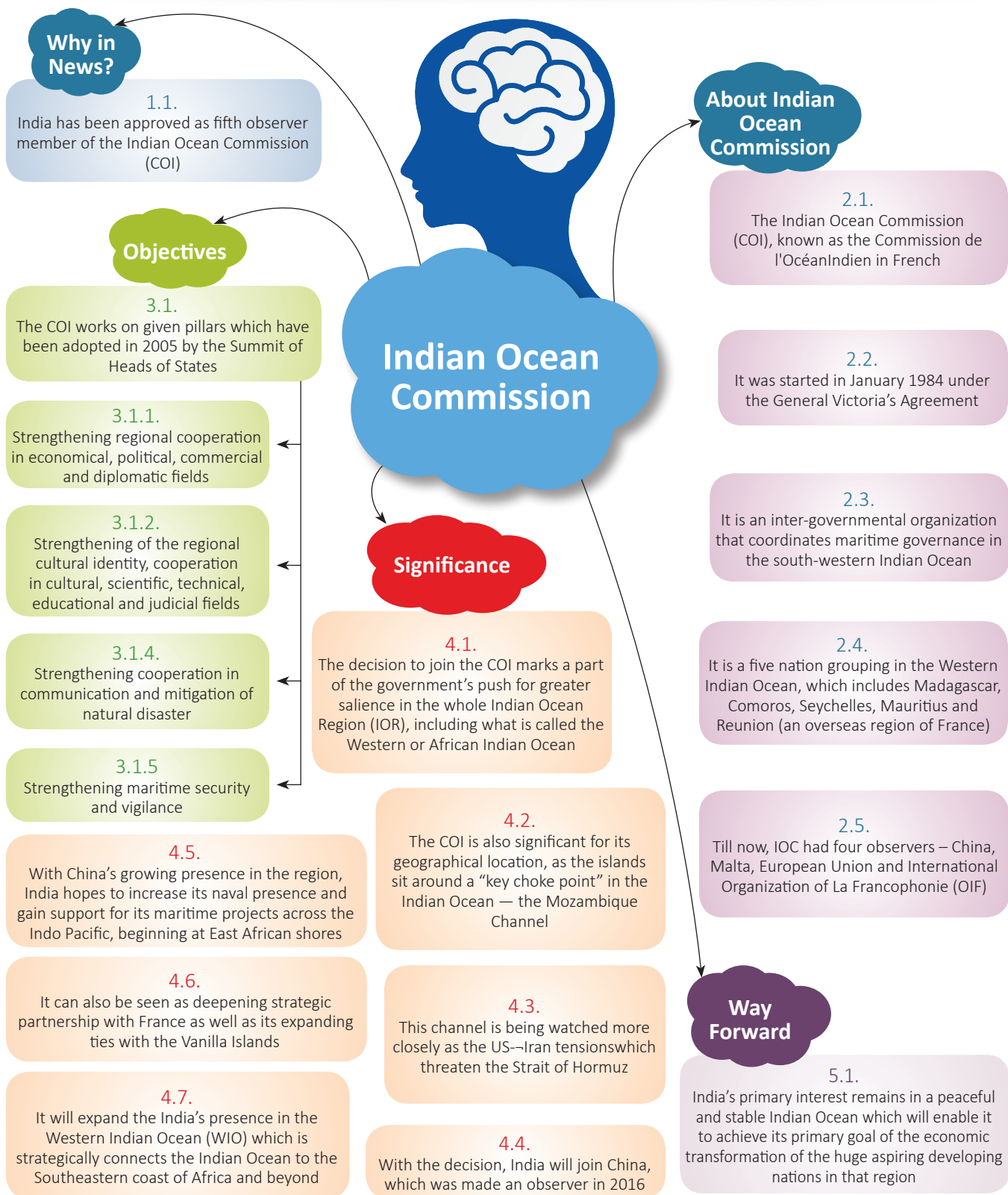












7

MCQ's WITH EXPLANATORY ANSWERS (Based on Brain Boosters)

01

The Mineral Laws (Amendment) Bill, 2020

Q. Consider the following statements with reference to 'The Mineral Laws (Amendment) Bill, 2020':

1. As per the Bill, the state governments cannot take advance action for auction of a mining lease before its expiry.
2. The Bill has proposed a new type of license, called 'prospecting license-cum-mining lease' (PL-cum-ML).
3. The Bill has mandated prior coal mining experience in India in order to participate in the auction of coal and lignite blocks.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 only
(c) 1 and 3 only (d) 3 only

Answer: (b)

Explanation: **Statement 1 is incorrect.** Under the MMDR Act, mining leases for specified minerals (minerals other than coal, lignite, and atomic minerals) are auctioned on the expiry of the lease period. The Bill provides that state governments can take advance action for auction of a mining lease before its expiry.

Statement 2 is correct. The Bill adds a new type of license, called 'prospecting license-cum-mining lease' (PL-cum-ML). This will increase the availability of coal & lignite blocks, and coal blocks of varying grades in a wide geographical distribution will be available for allocation.

Statement 3 is incorrect. The Bill clarifies that the companies need not possess any prior coal mining experience in India in order to participate in the auction of coal and lignite blocks.

02

Protection of Children from Sexual Offences (POCSO) Rules, 2020

Q. With reference to the 'Protection of Children from Sexual Offences Rules, 2020', consider the following statements:

1. New rules empower the Special Court to pass an order for interim compensation to meet the needs of the child for relief or rehabilitation.

2. The State Government shall pay the compensation ordered by the Special Court within 30 days of receipt of such order.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (c)

Explanation: **Both statements are correct.** New rules empower the Special Court to pass an order for interim compensation to meet the needs of the child for relief or rehabilitation at any stage after registration of the First Information Report. The State Government shall pay the compensation ordered by the Special Court within 30 days of receipt of such order.

03

The World Climate and Security Report 2020

Q. With reference to the 'World Climate and Security Report 2020', consider the following statements:

1. It has been jointly released by the United Nations Environment Programme and Greenpeace International.
2. Water insecurity is already a significant driver of instability, and will pose a significant risk to global security by 2030.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (b)

Explanation: **Statement 1 is incorrect.** It has been released by the International Military Council on Climate and Security (IMCCS). The IMCCS is a group of senior military leaders, security experts, and security institutions across the globe dedicated to anticipating, analyzing, and addressing the security risks of a changing climate.

Statement 2 is correct. According to the report, climate change-exacerbated water insecurity is already a significant driver of instability, and according to the experts, will pose a significant or higher risk to global security by 2030.

04

The Epidemic Diseases Act, 1897

Q. Consider the following statements with reference to 'The Epidemic Diseases Act, 1897':

1. This Act defines "dangerous epidemic diseases" but do not deal with mitigation and scientific responses to prevent, control and tackle outbreaks.
2. This Act is regulatory in nature and does not include any penal provisions.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (d)

Explanation: Both statements are incorrect. The definition or description of a "dangerous epidemic disease" is not provided in the Act. However, most provisions of the Act are just "policing" in nature and do not deal with mitigation and scientific responses to prevent, control and tackle outbreaks.

The third section describes penalties for violating the regulations, in accordance with Section 188 of the Indian Penal Code.

05

Uttar Pradesh Public and Private Property Damage Recovery Ordinance, 2020

Q. Consider the following statements with reference to 'UP Recovery of Damages to Public and Private Property Ordinance, 2020':

1. In cases of damage to public property, the compensation process will be set in motion by Claims Tribunal.
2. An order passed by the Claims Tribunal would be final, and that no appeal would lie against the decision before any court.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (b)

Explanation: Statement 1 is incorrect. In cases of damage to public property, the compensation process will be set in motion by the District Magistrate, Commissioner of Police or Head of office, after going through the report of the circle officer.

Statement 2 is correct. The Ordinance provides that once a Claims Tribunal passes an order for recovery of damages, the name, address and photograph of the person found responsible shall be published. The Ordinance also provides that such order passed by the Claims Tribunal

would be final, and that no appeal would lie against the decision before any court.

06

Essential Commodities Act, 1955

Q. With reference to the 'Essential Commodity Act', consider the following statements:

1. The Act empowers the central government to add new commodities to the list of essential commodities as and when the need arises.
2. Under the Act, the government can also fix the maximum retail price (MRP) of any packaged product that it declares an "essential commodity".

Which of the statements given above is/are correct?

- (a) 1 only (b) only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (c)

Explanation: Both statements are correct. The Act empowers the central government to add new commodities to the list of Essential Commodities as and when the need arises, and to remove them from the list once the crisis is over or the situation improves.

Under the Act, the government can also fix the maximum retail price (MRP) of any packaged product that it declares an "essential commodity".

07

Indian Ocean Commission

Q. Consider the following statements with reference to the 'Indian Ocean Commission':

1. India has been approved as fifth observer member of the Indian Ocean Commission (COI).
2. Madagascar, Comoros, Seychelles, Mauritius, Fiji and Reunion (an overseas region of France) are the member state of COI.

Which of the statements given above is/are correct?

- (a) 1 only (b) only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (a)

Explanation: Statement 1 is correct. India has been approved as fifth observer member of the Indian Ocean Commission (COI).

Statement 2 is incorrect. It is a five nation grouping in the Western Indian Ocean, which includes Madagascar, Comoros, Seychelles, Mauritius and Reunion (an overseas region of France).

7

IMPORTANT FACTS (For Prelims)



- 01** Which state government has decided to posted one 'Arogya Mitra' at all primary health centres of the state?
- Uttar Pradesh
- 02** Which market regulator has launched a mobile app, SCORES, for investors to lodge grievances against mutual funds, listed companies or any other registered intermediaries?
- Securities and Exchange Board of India
- 03** Which Sanctuary has been declared as 'Eco-sensitive Zone' by the government of India?
- National Chambal Sanctuary (Madhya Pradesh)
- 04** Which state has become the first Indian state to implement 'National Biofuel Policy'?
- Rajasthan
- 05** Which state government has launched 'Kaushal Satrang Scheme' for empowering youth through skill training?
- Uttar Pradesh
- 06** Which company has introduced 'DigiPivot' for skill development of women?
- Google
- 07** What will be the national slogan of Bangladesh?
- 'Joy Bangla'

7

PRACTICE QUESTIONS (For Mains Exam)



01 What is sepsis? How does sepsis occur? Discuss.

02 What is an 'essential commodity'? Why has government declared masks, hand sanitisers 'essential' commodities? Discuss.

03 "In spite of adverse environmental impact, mining is still inevitable for development". Discuss

04 Examine the scope of Fundamental Rights in the light of the latest judgement of the Supreme Court on 'Uttar Pradesh Public and Private Property Damage Recovery Ordinance, 2020.'

05 'Climate Change' is a global problem. How India will be affected by climate change? How Himalayan and coastal states of India will be affected by climate change?

06 What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India.

07 How would the recent phenomena of protectionism and currency manipulations in world trade affect macroeconomic stability of India?

7

IMPORTANT NEWS

01

Committee on 'Kisan Rail'

The government of India has formed a committee to work out the modalities of 'Kisan Rail'. The committee has been formed under the aegis of Ministry of Agriculture and Farmers Welfare, which includes representative from Ministry of Railways also.

Background

Finance Minister Nirmala Sitharaman proposed to set up a 'Kisan Rail' through the public-private-partnership (PPP) mode for a cold supply chain to transport perishable goods in the Union Budget 2020-21. It is also being said that 'Kisan Rail' is likely to contribute to government's plan of doubling the income of farmers by 2022.

Key Highlights

The 'Kisan Rail' with frozen containers will help in bringing perishable agricultural items such as vegetables, fruits to the market in a short duration of time. It is expected that the 'Kisan Rail' train with frozen containers will build a seamless national cold supply chain for perishables, inclusive of fish, milk, and meat.

Towards fulfillment of the budget proposals, following are the major initiatives which have already been taken by Indian Railways regarding development of cold chain for transportation of perishable traffic:

- **Refrigerated Parcel Vans-** for transportation of highly perishable parcel traffic;
- **Reefer (Ventilated Insulated) Rail Containers-** for movement of fruits and vegetables to different parts of the country; and
- Cold Storage facilities for perishables. 🌐🌐🌐

02

India has Joined the List of Global Arms Exporters for the First Time

In a first, India has figured on a list of global arms exporters, making a modest entry at number 23 among the top 25 weapon exporters.

Key Highlights

The latest data on global arms transfer by SIPRI showed that Indian arms imports have come down significantly (by 32%) since 2015, indicating that the 'Make in India' initiative is gaining ground but the country is still ranked as the world's second biggest weapons buyers, just behind Saudi Arabia.

The silver lining for India, along with the 32% dip in imports has been the entry into the exporters list. At present, the exports shown are modest – they account for only 0.2% of the global arms market – but the start is significant. India's biggest clients are Myanmar, which accounts for 46% of exports, Sri Lanka at 25% and Mauritius at 14%.

India has a target to increase its defence exports to \$ 5 billion within five years. For this, government will be extending additional Lines of Credit and grants for friendly foreign countries over the next five years.

Russia remained the largest arms supplier to India in 2010-14 and 2015-19, but deliveries fell by 47% and its share of total Indian imports went down from 76% to 56%. Imports from the US, which became India's second-largest arms supplier in 2010-14 as part of the growing strategic partnership, also fell by 51% in 2015-19. In contrast, arms imports from Israel and France increased, by 175% and 715% respectively making them the second and third-largest suppliers to India in 2015-19. 🌐🌐🌐

03

Solar Receiver Tube Technology

Scientists from the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) have developed a cost-effective solar receiver tube technology for industrial process heat applications.

Key Highlights

The receiver tube technology efficiently absorbs solar radiation and converts it into heat for the targeted applications, specially in industries. It exhibits high corrosion resistance suitable for Indian weather conditions.

Industries are one of the biggest consumers of energy. Recently, Indian industries have shown interest to exploit renewable energies, especially solar energy, due to their

inherent advantages (economic and environmental-friendly aspects). In this regard, Concentrating Solar Thermal (CST) technologies provide a viable solution to meet the demands on industrial process heat of a majority of industrial processes.

The solar receiver tube is one of the key components in the CST technology. Currently, Indian CST plant developers are importing the high-end evacuated CSP receivers for CST applications. This has become a choking point for the commercialization of CST technology.

In this regard, scientists from ARCI have developed a cost-effective wet chemical process to prepare absorber coating on stainless steel tubes suitable for industrial process heat applications. The receiver tube achieved around 93% absorptance (effectiveness in absorbing radiant energy, it is the ratio of the absorbed to the incident radiant power) and around 14 % emittance (amount of light, emitted by an area of the surface of a radiating body) along with good thermal stability and high corrosion resistance. The absorber coating has been successfully validated for heat gain and heat loss studies in a testing facility established at ARCI.

About ARCI

- ARCI was established in the year 1997. It is an autonomous research and development centre of Department of Science and Technology (DST). ARCI's mandate is:
- Development of high performance materials and processes for niche markets;
- Demonstration of technologies at prototype / pilot scale; and
- Transfer of technology to Indian industry. 

04

Animal Protection Index 2020

World Animal Protection, an international animal welfare charity, has released Animal Protection Index 2020 (API 2020). The API aims to showcase where countries are doing well, and where they fall short on animal welfare policy and legislation, so they can take steps to improve. The index ranks countries from A (being the highest score) to G (being the weakest score).

Key Highlights

Sweden, the United Kingdom, and Austria are rated with the highest scores, which is encouraging. But no country scored 'A'. Azerbaijan, Iran were placed at 'G'. More countries need

to follow their lead and World Animal Protection is calling on all governments to immediately improve their animal welfare standards, not only for the benefit of animals but also to reduce the risk to public health.

India has attained a C ranking in the index, along with countries like New Zealand, Mexico, France, and Spain. However, there is room for improvement in many domains related to animal welfare. For instance, animals used in scientific research are exempt from cruelty considerations in the Prevention of Animal Cruelty Act, 1960.

Furthermore, there is a lack of regulations regarding the rearing of farm animals, notably with unregulated urban dairy systems developing quickly with very poor welfare standards.

Good animal welfare practices for domesticated animals can help prevent disease, by keeping animals clean, healthy, and providing sufficient space for them to exhibit natural behaviour.

Ending the commercial trade in wild animals, that have been taken from their natural habitats or intensively bred in captivity, will reduce the serious human health hazards associated with moving stressed, sick and injured wildlife through international trade routes. 

05

SAREX-2020

Indian Coast Guard has conducted a National Maritime Search and Rescue Exercise-2020 (SAREX-20), at Goa with participation of 24 overseas partners from 19 countries. This was for the first time the three pillars of national Search and Rescue (SAR) mechanism i.e. Ministry of Shipping, Ministry of Civil Aviation and Ministry of Defence, took part in SAREX-20 which had the theme of "Harmonization of Maritime and Aeronautical Search and Rescue" code named 'HAMSAR'.

SAREX-2020 tested the efficiency of operations and coordination of the stakeholders involved in SAR in Indian SAR Region. The proactive approach adopted on SAR particularly for ensuring safety of fishermen and mariners at sea has yielded positive results and contributed towards growing confidence among the fishing community and the mariners. Indian Coast Guard since inception have saved 9701 lives at sea translating to approximately more than one life being saved every second day.

About SAREX

SAREX exercise is being conducted biennially by Indian Coast Guard under the aegis of National Maritime Search and Rescue

Board (NMSARB) since 2003, and this was the 9th edition of the series of SAREX.

About NMSARB

The NMSARB was constituted by the union government on January 28, 2002, with the Director General Indian Coast Guard as its Chairman. The board coordinates the National Search and Rescue Plan, in accordance with the provisions of International Conventions. 🇮🇳🇮🇳🇮🇳

06

United Nations Adopted Political Declaration on Women's Rights

United Nations (UN) has adopted a political declaration on women's rights that seeks to preserve gains under threat but does not advocate new ways to ensure progress toward equality.

Key Highlights

In the Political Declaration, Member States welcomed the progress made towards the full, effective and accelerated implementation of the 'Beijing Declaration and Platform for Action', but expressed concern that overall, progress has not been fast or deep enough. In some areas progress has been uneven, and that structural barriers, discriminatory practices and the feminization of poverty persist.

As leaders reaffirm their political will for action, they also recognize that new challenges have emerged that require concerted and intensified efforts, including in regard to:

- Realizing the right to education for all women and girls, with attention to areas where they are underrepresented such as STEM;
- Ensuring full, equal and meaningful participation, representation and leadership of women at all levels and in all spheres of society;
- Ensuring women's economic empowerment, for instance, access to decent work, equal pay, provision of social security and access to finance;
- Tackling the disproportionate share of unpaid care and domestic work of women and girls;
- Addressing the disproportionate effect of climate change and natural disasters on women and girls;
- Ending all forms of violence and harmful practices against all women and girls;

- Protecting women and girls in armed conflict and ensuring women's participation in peace processes and mediation;
- Realizing the right to health for women and girls, with emphasis on universal health coverage; and
- Addressing hunger and malnutrition among women and girls.

The Declaration also reaffirms that gender equality and the empowerment of all women and girls will make a crucial contribution to progress across all the Sustainable Development Goals. 🇮🇳🇮🇳🇮🇳

07

Sepsis

Recently, many coronavirus patients have died of sepsis— when the body's immune system goes into overdrive. Sepsis is a life-threatening organ dysfunction caused by the body's immune system overreacting in response to an infection. This overactive, toxic response can lead to tissue damage, multiple organ failure and death.

How does Sepsis Occur?

Viruses, bacteria, fungi or parasites — sepsis can be triggered by a variety of pathogens. The causes of sepsis are usually pneumonia, wound infections, urinary tract infections or infections in the abdominal cavity. In addition to the known seasonal influenza viruses, other viruses that are highly infectious, such as coronaviruses, Ebola and yellow fever viruses, dengue, swine flu or bird flu viruses can also cause sepsis.

Symptoms

There are several stand out symptoms that usually indicate possible sepsis — for example, a drop in blood pressure with a simultaneous rise in heart rate, fever, rapid, heavy breathing, an unusually strong feeling of illness and sudden confusion. Septic shock is the most severe stage and is diagnosed when your blood pressure drops to dangerous levels.

Treatment

Although sepsis is common in hospitals, it's often detected very late. When diagnosed, sepsis is immediately treated as an emergency. Ventilation equipment and/or circulatory therapy, kidney replacement therapy or coagulation therapy are used to support the patient's organs in particular. 🇮🇳🇮🇳🇮🇳

7

IMPORTANT HIGHLIGHTS (From PIB)

01

Promoting use of Bio Pesticides and Fertilizers



To promote the use of bio pesticides in agriculture, Central Insecticide Board & Registration Committee has formulated simplified guidelines for registration of bio pesticides as compared to chemical pesticides. During provisional registration granted under Section 9 (3B) of The Insecticides Act, 1968, the applicant is allowed to commercialize the bio-pesticides, unlike chemical pesticides.

Government of India through organic farming schemes of 'Paramparagat Krishi Vikas Yojana' (PKVY), 'Mission Organic Value Chain Development for North Eastern Region' (MOVCDNER) and 'Capital Investment Subsidy Scheme' (CISS) which aims for sustainable agricultural production in eco-friendly manner, promoting organic inputs and chemical free agricultural produce for improving the health condition of the people.

Use of bio-pesticides is promoted by educating farmers through Farmer Field schools and Human Resource Development programmes under Integrated Pest Management approach.

What are Biopesticides?

Biopesticides are certain types of pesticides derived from such natural sources like animals, plants, bacteria, and certain minerals. For example, canola oil and baking soda have pesticidal applications and are considered biopesticides.

02

Groundwater Affected Himalayan Slip and Climate



Researchers from Indian Institute of Geomagnetism (IIG), an autonomous institute under the Department of Science & Technology, have found the mighty Himalayas subside and move up depending on the seasonal changes in groundwater. Since Himalayas play a very important role in

influencing climate in the Indian subcontinent, the study will help in understanding how hydrology affects climate

The Himalayan foothills and the Indo-Gangetic plain are sinking because its contiguous areas are rising due to tectonic activity associated with landmass movement or continental drift. The new study showed that subsidence and uplift are found to be associated with seasonal changes in groundwater, apart from the normal, common reasons. Water acts as a lubricating agent, and hence when there is water in the dry season, the rate of slip of the fault in this region is reduced.

In the Himalaya, seasonal water from glaciers, as well as monsoon precipitation, plays a key role in the deformation of the crust and the seismicity associated with it. The subsidence rate is associated with groundwater consumption.

According to the researchers, a 12% reduction in the rate of the subsurface slip. This slip refers to how fast the fault is slipping relative to the foot and hanging wall. The slip occurs at the Main Himalayan Thrust (MHT), due to hydrological variations and human activities, over which there is the periodic release of accumulated strain.

03

Friction-reducing Nanocomposite Coatings



A group of scientists at the International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI) have developed a process for size-selective deposition of nanocomposite coatings which can reduce friction of these dynamic systems. The scientists have found that nickel tungsten-based coatings with impregnation of particular sized Silicon Carbide (SiC) submicron particles using an economical and straightforward pulsed electroplating or electrodeposition process can provide an excellent combination of wear and corrosion resistance with the low friction coefficient and good oil retention capacity. The newly developed coatings reduced friction more and could withstand corrosion due to salt spray better than many similar wear-resistant coatings available in the market.

Need

Several aerospace, defence, automobile, space devices need to reduce friction, wear, and tear to enhance the life of components. The usual route taken is to lubricate these dynamic systems, which add to the cost, complexity, and weight of these systems.

The coating could address the emerging need for coatings with low friction and wear. Nanocomposite coatings with hard particles inside a tough matrix result in the best combination of wear resistance and reduced friction. However, the size of reinforcement particles is a critical factor in deciding the friction characteristics. Too much variation in the size of reinforcement particles in composite coating results in premature failure of the coating due to stress concentration. 

04 Methane-oxidizing Bacteria

 Scientists at Agharkar Research Institute (ARI), Pune, an autonomous institute under the Department of Science & Technology, have isolated 45 different strains of methanotrophic bacteria which have been found to be capable of reducing methane emissions from rice plants.

Significance

Rice fields are human-made wetlands and are waterlogged for a considerable period. Anaerobic degradation of organic matter results in the generation of methane. Rice fields contribute to nearly 10% of global methane emissions. Very few studies in the world have focused on methanotrophs from tropical wetlands or tropical rice fields.

Methanotrophs metabolise and convert methane into carbon-di-oxide. They can effectively reduce the emission of methane, which is the second most important greenhouse gas (GHG) and 26 times more potent as compared to carbon-di-oxide. In rice fields, methanotrophs are active near the roots or soil-water interfaces.

Besides methane mitigation studies, methanotrophs can also be used in methane value addition (valorization) studies. Bio-methane generated from waste can be used by the methanotrophs and can be converted to value-added

products such as single-cell proteins, carotenoids, biodiesel, and so on.

Such studies help reduce GHG emissions, especially anthropogenic or man-made emissions, which a pressing need in the age of global warming. 

05 Remission of Duties and Taxes on Exported Products

 The Cabinet Committee on Economic Affairs has given its approval for introducing the Scheme for Remission of Duties and Taxes on Exported Products' (RoDTEP) under which a mechanism would be created for reimbursement of taxes/ duties/ levies, at the central, state and local level, which are currently not being refunded under any other mechanism, but which are incurred in the process of manufacture and distribution of exported products.

Key Features

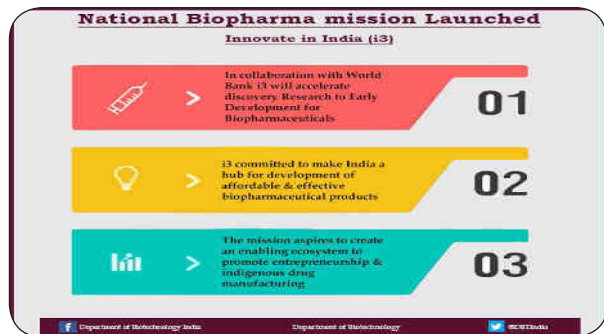
At present, Goods and Services Tax (GST) taxes and import/ customs duties for inputs required to manufacture exported products are either exempted or refunded. However, certain taxes/duties/levies are outside GST, and are not refunded for exports, such as, VAT on fuel used in transportation, Mandi tax, Duty on electricity used during manufacturing etc. These would be covered for reimbursement under the RoDTEP Scheme.

The refunds under the RoDTEP scheme would be a step towards "zero-rating" of exports, along with refunds such as Drawback and IGST. This would lead to cost competitiveness of exported products in international markets and better employment opportunities in export oriented manufacturing industries.

The rebate would be claimed as a percentage of the Freight on Board value of export.

This scheme is going to give a boost to the domestic industry and Indian exports providing a level playing field for Indian producers in the International market so that domestic taxes/ duties are not exported. 

06 National Biopharma Mission



The National Biopharma Mission (NBM) is an industry-Academia Collaborative Mission for accelerating biopharmaceutical development in the country.

Key Highlights

Under this Mission the government has launched 'Innovate in India (i3)' programme to create an enabling ecosystem to promote entrepreneurship and indigenous manufacturing in the sector. The mission will be implemented by Biotechnology Industry Research Assistance Council (BIRAC).

The program is promoting entrepreneurship by supporting small and medium enterprises for indigenous product development. The mission was approved in 2017 at a total cost of 1500cr. and is funded 50% by world bank.

Innovation is being promoted in India for inclusiveness. This scientifically driven enterprise aims at developing an ecosystem for affordable product development and is focused on the following 4 verticals:

1. Development of product leads for vaccines, biosimilars and medical devices that are relevant to the public health need by focussing on managed partnerships.
2. Upgradation of shared infrastructure facilities and establishing them as centres of product discovery/discovery validations and manufacturing.
3. Develop human capital by providing specific trainings to address the critical skills gap among the nascent biotech companies across the product development value chain in areas such as product development, intellectual property registration, technology transfer and regulatory standards.

4. Technology Transfer Offices: To help enhance industry academia inter-linkages and provide increased opportunities for academia, innovators and entrepreneurs to translate knowledge into products and technologies, 5 Technology Transfer Offices are being considered for funding under NBM.

07 Starch-based Materials to Stop Rapid Blood Loss

Scientists from the Institute of Nano Science and Technology (INST), an autonomous institute under the Department of Science & Technology, have developed a starch-based 'hemostat' material that concentrates the natural clotting factors in blood by physically absorbing excess fluid. Hemostat materials absorb excess fluid by concentrating the natural clotting factors in the blood that are critical for stopping the blood flow; however, the bleeding can restart when non-biodegradable materials are removed.

The microparticles are prepared by modifying some of the chemical hydroxyl groups on starch to carboxymethyl groups while also incorporating the beneficial calcium ions, which encourages the aggregation of red blood cells and platelets and their activation to generate the fibrin protein network that forms a stable blood clot. This modification increases the ability of the molecules to interact with water. This is the basis of its impressive ability to absorb fluid from the blood and hence concentrate the clotting factors.

The microparticles of the product, known as 'calcium-modified carboxymethyl-starch,' swelled up to form a cohesive and adherent gel within 30 seconds after contact with blood in lab tests.

Significance-

The product has increased absorption capacity, inexpensive, biocompatible as well as biodegradable.

These encouraging results suggest that the modified starch microparticles are a very promising candidate for further exploration in clinical applications.

7

IMPORTANT CONCEPTS (Through Graphics)

Major Industrial Regions of the World

01

Mesabi Range and Detroit



- **Mesabi Range:** It is located in US. The Mesabi Iron Range is an elongate trend containing large deposits of iron ore, and the largest of four major iron ranges in the region collectively known as the Iron Range of Minnesota.
- The Mesabi Range was known to the local Ojibwe as Misaabewajiw ("Giant mountain"). Throughout the Mesabi Range, "Mesaba" and "Missabe" spelling variations are found along with places containing "Giant" in their names.
- **Detroit Industrial Region:** It is located on the Detroit River (connecting Lakes Erie and St. Clair) opposite Windsor, Ontario, Canada.
- It is the greatest auto-mobile manufacturing region of the USA.
- The city was at first a centre for wagon and carriage-making which later led to the assembly of automobiles in the region.
- It is the headquarters of several giant motor corporations including Ford, Chrysler, and General Motors. 

02

Ottawa, Montreal, Toronto and Windsor



- **Ottawa:** It stands on the south bank of the Ottawa River in the eastern portion of southern Ontario.
- The Ottawa River, the principal tributary of the St. Lawrence River, was a key factor in the city's settlement and development; its watershed, covering more than 57,000 square miles, facilitated the transport of resources such as furs,

timber, and minerals from the region.

- **Montreal:** It is the most populous municipality in the Canadian province of Quebec and the second-most populous municipality in Canada.
- Montreal industries include aerospace, electronic goods, pharmaceuticals, printed goods, software engineering, telecommunications, textile and apparel manufacturing, tobacco, tourism and transportation.
- **Toronto:** The economy of Toronto is the largest contributor to the Canadian economy, at 20% of national GDP, and an important economic hub of the world.
- **Windsor:** It is a city in southwestern Ontario, Canada, on the south bank of the Detroit River. Windsor is a major contributor to Canada's automotive industry and is culturally diverse. It is also known as the "Automotive Capital of Canada"..

03

Mexico



- Mexico is located in North America, between the United States to the north and the Central American countries of Belize and Guatemala to the south.
- The most prominent industries in Mexico are the automotive, tobacco, aviation and aerospace, medical device, apparel and textile, and consumer products industries.
- Mexico is the leading producer of silver in the world. Mexico is also a major producer of fluorspar, lead, molybdenum, crude oil, bismuth, cadmium, salt, manganese, zinc, copper ore, gold, and iron ore.
- The petroleum industry in Mexico makes Mexico the eleventh largest producer of oil in the world. Mexico has the seventeenth largest oil reserves in the world, and it is the fourth largest oil producer in the Western Hemisphere behind the United States, Canada and Venezuela.

04 Johannesburg and Kimberley



- **Johannesburg:** It is largest city in South Africa. It is also known as "City of Gold". The Gauteng City-Region is an integrated cluster of cities, towns and urban nodes that together make up the economic heartland of South Africa. Gauteng includes the cities of Johannesburg, once the world's most important centre of gold production and today South Africa's financial capital, and Pretoria, the country's administrative capital.
- Johannesburg sits on the edge of the world's largest known gold deposit.
- **Kimberley:** It is the capital and largest city of the Northern Cape Province of South Africa. It is located approximately 110 km east of the confluence of the Vaal and Orange Rivers.
- Kimberley is home to the world's largest diamond mine, also known as the "Big Hole." 🇳🇦🇷🇺🇳🇦

05 Sao Paulo and Santos



- Brazil is one of the world's largest coffee producers and is becoming a significant player in the specialty coffee industry. It is located in South America.
- Bourbon, Typica, Caturra, and Mundo Novo coffee varieties are grown in the states of Paraná, Espírito Santo, São Paulo, Minas Gerais, and Bahia.
- São Paulo is considered the "financial capital of Brazil".
- Santos is a market name referring to the port through which this coffee is traditionally shipped.
- Santos has historically been the main gateway for coffee exports out of Brazil, originally via a British-built railroad down from the plateau where São Paulo and many of the plantations are today. Threatened species present include the vulnerable common pochard (*Aythya ferina*) and the endangered spotted pond turtle (*Geoclemys hamiltonii*). 🇧🇷🇳🇦🇷🇺🇳🇦

06 Great Britain



- The main industrial area is the London area, where there are many centers of manufacturing and mining.
- The second industrial area is the Midland area around Birmingham which produces metal goods, electrical and engineering goods, and vehicles.
- The third is Yorkshire, where the woollen industry is located in Leeds. Sheffield is known for its steel industry while Hull is one of the most important fishing ports in the world. The fourth industrial center is South Wales, where there is a coal mining area. Many factories have been built there that produce plastics, chemicals, and textiles.
- The fifth area is Durham and Northumberland, where we can find the iron and steel industry.
- The sixth area is Glasgow, also a location of the iron and steel industry.
- The seventh industrial area is Belfast in Northern Ireland, which is known for its shipbuilding industry. 🇬🇧🇮🇪

07 Ruhr Coalfield and Rhine river Basin



- The Ruhr is a large coal field located in the west of Germany in North Rhine-Westphalia.
- Ruhr represents one of the largest coal reserve in Germany having estimated reserves of 42 billion tonnes of coal.
- The Ruhr coalfield (extending west of the Rhine and north of the Lippe) is producing the bulk of Germany's bituminous coal.
- Steel production and diversified chemical manufacturing constitute the other basic industries of the region, which is served by an extensive inland-waterway system and one of Europe's densest railway networks.
- The Rhine is one of the longest and most important river in Europe.
- The Rhine flows through six countries-Switzerland, Principality of Liechtenstein, Austria, Germany, France and the Netherlands before flowing into the North Sea at Rotterdam. 🇨🇭🇦🇹🇩🇪🇫🇷🇳🇱



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नोट (Note): अगर आपको हिंदी और अंग्रेजी दोनों माध्यम में अध्ययन सामग्री प्राप्त करनी है, तो आपको दोनों में अपनी ईमेल से **Subscribe** करना पड़ेगा | आप दोनों माध्यम के लिए एक ही ईमेल से जुड़ सकते हैं |

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