

PERFECT 7

WEEKLY

CURRENT AFFAIRS

May: 2019 / Issue-03



HUMAN TRAFFICKING

A Pandemic of the 21st Century

- The Menace of Honour Killing is Continued in India
- UN Arms Trade Treaty : An Understanding
- Aircraft Crash : A Big Challenge to Aviation Industry
- Internet of Things : Communication among Machines
- Biodiversity and Ecosystem Services : Declining at Unprecedented Rate
- UN Security Council Reforms Still Awaited



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- ◆ टेस्ट सीरीज यूपीपीसीएस की परीक्षा के समरूप होगी।
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DHYEYA IAS : AN INTRODUCTION



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.

Vinay Kumar Singh
CEO and Founder
Dhyeya IAS



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.

Q H Khan
Managing Director
Dhyeya IAS

PERFECT 7 : AN INTRODUCTION



With immense pleasure and gratitude I want 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.

I extend best wishes for the success of this endeavor.

Qurban Ali

Chief Editor

Dhyeya IAS

(Ex Editor- Rajya Sabha TV)



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.

The new 'avatar' of 'Perfect 7' is a result of your love and affection. We feel inspired to continue our efforts to deliver effective and valuable content in interesting manner. Our promise of quality has reached you in around 100 issues and more are yet to come.

Ashutosh Singh

Managing Editor

Dhyeya IAS



PREFACE

Dhyeya family feels honoured to present you a pandora box 'Perfect 7'. '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

Perfect 7

The Weekly Issue

Perfect 7

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Our other initiative



Hindi & English
Current Affairs
Monthly
News Paper



DHYEYA TV
Current Affairs Programmes hosted
by Mr. Qurban Ali
(Ex. Editor Rajya Sabha, TV) & by Team Dhyeya IAS
(Broadcasted on YouTube & Dhyeya-TV)

SEVEN IMPORTANT ISSUES

1. HUMAN TRAFFICKING : A PANDEMIC OF THE 21ST CENTURY

Why in News?

Recently, twenty three Nepali girls, who were victims of human trafficking, were rescued in Mizoram and handed over to Nepali government. In another event, eight Rohingya women were detained in Mizoram.

While the rescue is a huge relief for the security forces and administration, the increasing trend of human trafficking is worrisome.

Introduction

Human trafficking is trading humans mostly for the purpose of bonded labour, forced labour, sexual slavery, commercial sexual exploitation or extraction of organs. Trafficking of humans is considered one of the fastest growing crimes of trans national criminal organizations. It is a crime which involves violation of human rights by means of exploitation and coercion. It is a heinous crime which is occurring not only within a country but also trans nationally.

Human trafficking has received increasing global attention over the past decade. Labour related trafficking occurs in a wide range of sectors, such

as agriculture, fishing, manufacturing, mining, forestry, construction, domestic servitude, cleaning and hospitality services. Trafficked people may also be forced to work as beggars or soldiers, and women can be made to serve as 'wives' or sex slaves. The most widely cited definition of human trafficking is in the United Nations Protocol to prevent, suppress and punish trafficking in persons which describes human trafficking as the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation.'

Girls account for 23% of all trafficking victims detected globally, according to the 2018 Global Report on Trafficking in Persons, produced by the UN Office of Drugs and Crime (UNODC). The figure, which is based on data from 2016, is up from 21% in 2014 and 10% in 2004, the year when the UNODC began collecting data on children. Boys

account for 7% of reported trafficking victims, down from 8% in 2014 and up from 3% in 2004.

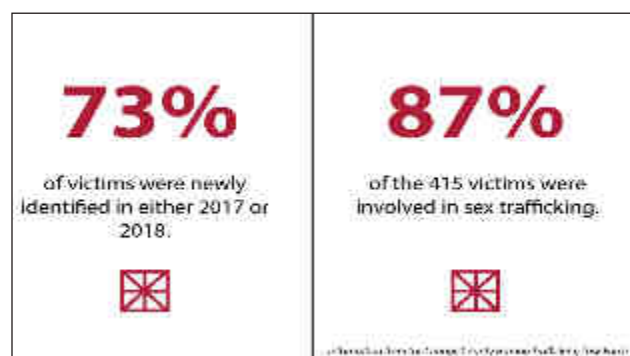
Stages of Human Trafficking

The Initial stage through which the human trafficking starts, is the

transportation of victim from source area. This process of trafficking includes different stages and stakeholders, the victim is being recruited or taken through fraud and then transported towards the demand market with the help of local or professional traffickers. The process of trafficking initiates at this stage and this stage is the 'origin' for the whole trafficking crime. For example, the origin may be a small town or a village for domestic trafficking process. After the origin phase, next stage is the 'transition stage', where the victim has to stay for a limited period of time or has to stay over for a few days, weeks or months. The transit may also become an origin for next transportation. The final stage is the 'destination stage' where the trafficked victim is finally delivered to owner.

Extent of Human Trafficking

As per the record, in India, there are 1794 identified places of such origins from where females victims are being trafficked. The whole chain of this trafficking process has involved number of stakeholders. In fact, it is a billion dollars business industry and a complete chain of networking and lobbying from powerful to the local level trafficker. The extent of the crime is that, it has resulted to make this industry as one of the fastest growing organized crime industry in the world. It is the world's third largest crime after drugs and arms trafficking. Moreover, the activities and involvement of thousand criminals working like a



professionals in the organized crime industry has led to several other social discourses and has become a fuel for other criminal activities as well. The organization of human trafficking in such a professional manner has also been taken as a backdrop of the emerging phenomenon of globalization, feminization of international migration and state policies to sustain in the present competitive economic scenario.

However, as far as India is concerned, India remained in the 'Tier 2' watch list having one of the lowest ranking in trafficking in person report, annually issued by the state department of U.S. Remaining in 'Tier 2' list means that the government is making significant efforts but does not yet meet the standards of countering human trafficking. In its 2016 report on human trafficking, the U.S. State Department wrote, "India is a source, destination and transit country for men, women and children subjected to forced labour and sex trafficking." India failed to meet the minimum standard for the elimination of trafficking, it added.

It has been found that there are 300,000 to 500,000 children working in the prostitution industry in India. India also has the highest number of child labour in the world with an estimate of 12.66 million children involved in hazardous work as per Census 2011. According to a study done in early 2018, the number of victims brought illegally into India from Nepal went up by 500 percent between 2013 and 2017.

Human trafficking may not be an issue in any domestic election, which perhaps explains why the 'Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill of 2018', drafted by the Ministry of Women and Child Development, has been found flawed by the civil society and is likely to be delayed for a prolonged

period. However, since India aspires to be a regional geopolitical power, its reputation matters and India will have to fulfill its commitment to the UN Convention against Transnational Organized Crime, which it has ratified.

Legal and Constitutional Frameworks to Counter Human Trafficking in India

Constitution of India

The Constitution of India prohibits trafficking in persons and guarantees many of the internationally acknowledged various human rights norms such as the right to life and personal liberty, the right to equality, right to freedom, the right to constitutional remedies. The right to be free from exploitation is also assured as fundamental right under Article 23(1). It states that traffic in human beings and begar and other similar forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law.

Indian Penal Code, 1860

Indian Penal Code which came into existence in 1860 addresses the problem of human trafficking in human beings. It is addressed in Section 370 and 370 A of the Indian Penal Code. It prohibited trafficking of women and girls and prescribed ruthless punishments for the criminals. It lays down that anyone who buys or sells the person under the age of 18 years for the purpose of prostitution and for sexual exploitation and for other immoral purposes shall be liable to imprisonment for up to 10 years and also be liable to fine. It also recognizes cross border trafficking into prostitution and whoever imports into India from any country outside India any girl under the age of 18, or knowing it to be likely that she will be, forced or seduced to illicit intercourse with another person shall be punishable

with imprisonment which may extend to ten years and shall also be liable to fine.

Immoral Traffic Prevention Act, 1986

The government of India ratified the 'International Convention for the Suppression of Immoral Traffic in Persons and the Exploitation of the Prostitution of Others' in 1950. India also passed the 'Suppression of Immoral Traffic in Women and Girls Act' (SITA) in the year 1956. In the year 1986 the act was further amended and changed which was known as the 'Immoral Traffic Prevention Act, 1986' (PITA). This is an interesting law because according to its preamble the purpose of this Act is to give effect to the Trafficking Convention and to prohibit the immoral human trafficking. The offences included are taking persons for prostitution, detaining persons in premises where prostitution is carried on, seducing or soliciting for prostitution, making life on the earnings of prostitution, seduction of a person in custody, keeping a brothel or allowing premises to be used as a brothel and so on.

The Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989

Since the poverty, exclusion and lack of awareness are the main driving forces for human-trafficking, the tribal belts and the areas populated by marginalized caste has become a fertile ground for the traffickers since the task of recruiting the victim is an easy process and people can be motivated and convinced by the traffickers with less efforts and with a promise of good economic returns in these regions.

Thus, this act gives an additional tool to safeguard women and young girls belonging to Scheduled Caste and Scheduled Tribes and also to create a greater burden on the trafficker or offender to prove his lack of connivance

in the matter. If the offender has the knowledge that victim belongs to these communities then this act can be effectively used to counter the offence of trafficking. Section 3 of this act deals with atrocities committed against people belonging to Scheduled Caste and Scheduled Tribes. It covers some forms of trafficking such as forced or bonded labors and sexual exploitation of women. A minimum punishment of six months is provided which may extend to five years if the offence is covered under section 3.

The Juvenile Justice (Care and Protection of Children) Act, 2000

According to this Act there is no difference between a minor and a child. All the persons under the age of eighteen years are considered children. A child who is a child in need of care and protection.

Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, 2018

It laid down a stringent punishment of 10 years to life imprisonment for aggravated forms of trafficking, which include buying or selling of persons for the purpose of bonded labour, bearing a child, as well as those where chemical substances or hormones are administered and a survivor acquires life-threatening illnesses such as AIDS. The Bill proposed a National Anti-Trafficking Bureau (NATB) for coordinating, monitoring and surveillance of trafficking cases. It also provided for a Relief and Rehabilitation Committee and Rehabilitation Fund with an initial allocation of ₹ 10 crore. It prescribes forfeiture of property used or likely to be used for the commission of an offence. However, Bill is lapsed due to dissolution of the 16th Lok Sabha.

International Framework

As far as the legal framework and perspective on the issue of human

trafficking is concerned, several international and national conventions, laws and protocols have been adopted by the international and state agencies and departments. The international interventions include: 'International Agreement for Suppression of White Slave Traffic' (1904 and 1910), 'International Convention for the suppression of the Traffic of the Women and Children' (1921), 'Slavery Convention' (1926), 'ILO Forced Labour Convention' (1930), 'International Convention for suppression of Traffic in Women of Full Age', 'Universal Declaration of Human Rights' (1948), 'Convention for the suppression of the Traffic in Persons and of Exploitation of the Prostitution of Others' (1949), 'UN Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment' (1984), 'Tourism Bill of Rights and the Tourist Code' (1985), 'Convention on Protection of Rights of Migrant Workers' (1990), 'Optional Protocol to the Convention on the Elimination of all Forms of discrimination against Women' (1999), 'UN protocol to Prevent, Suppress, and Punish Trafficking in Persons, especially Women and Children, 2000'.

Further, the United Nations Office on Drugs and Crime, a specialised United Nations agency, was established in 1997 as the Office for Drug Control and Crime Prevention by combining the United Nations International Drug Control Program and the Crime Prevention and Criminal Justice Division in the United Nations Office at Vienna.

Human trafficking is a prominent concern in countries where the rule of law is weak. It has been nearly two decades since the enactment of the Palermo Protocol and various anti-trafficking legislations, but the crime still remains. Target 16.3 of Sustainable Development Goals (SDG) calls to "Promote the rule of law at

the national and international levels and ensure equal access to justice for all." Hopefully more traffickers and organized crime groups will be prosecuted as countries work to meet this target.

Conclusion

Human-trafficking is one of the worst criminal activities that has spread its infection across the planet. It is one of the wicked acts that has made the lives of millions worse and unnatural. This kind of modern slave trade has hedaway the humanity among those who are being involved. The moral values, ethos and sense of belongings as a member of same human race have been overshadowed by the individual interest and pleasure. The victimization of poor and vulnerable masses has excluded them from the human race and commoditized them like animals and vegetables in the market. Their right and access to justice has no significant meaning and worth for them. The procedures, process, means, methods as well as the rate of involvement is increasing in this crime each day due to lack of resources, high demand in the market, very few income options and impotent legal watch system. It is, thus, imperative to have a careful watch and monitoring mechanism as well as strong interventions and commitment through which we can attempt to clean out this crime across the globe.

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.



2. THE MENACE OF HONOUR KILLING IS CONTINUED IN INDIA

Why in News?

Recently, in a suspected case of honour killing, a woman was allegedly killed by her parents at Kautha village in Ahemdagar district of Maharashtra for marrying against their wishes.

Introduction

Every year around the world an accelerating number of women or person associated with that women are reportedly killed in the name of honour. Relatives, usually male, commit acts of violence against wives, sisters, daughters and mothers to reclaim their 'family honour' from real or suspected actions that are perceived to have compromised it.

So-called honour killings are based on the deeply rooted belief that women are objects and commodities, not human beings, entitled to dignity and rights not equal to those of men. Women are considered the property of male relatives and are seen to embody the honour of the men to whom they "belong". Women's bodies are considered the repositories of family honour. The concepts of male status and family status are of particular importance in communities where honour killings occur and where women are viewed as responsible for upholding a family's honour. If a woman or girl is accused or suspected of engaging in behavior that could taint male and/or family status, she may face brutal retaliation from her relatives that often results in violent death. Even though such accusations are not based on factual or tangible evidence, any allegation of dishonour against a woman often suffices for family members to take matters into their own hands.

Although honour killings are widely reported in regions throughout

the Middle East and South Asia United Nations Special Rapporteurs on Extra Judicial, Summary and Arbitrary Executions have reported that these crimes against women occur in countries as varied as Bangladesh, Brazil, Ecuador, Egypt, India, Iran, Iraq, Israel, Italy, Jordan, Morocco, Pakistan, Sweden, Turkey, Uganda and the United Kingdom. There have also been incidents of honour killings reported in the United States and Canada. In India, as per the latest available published information with National Crime Records Bureau (NCRB), a total of 28 cases in 2014, 251 cases in 2015 and 77 cases in 2016 were reported with motive as honour killing which includes cases registered under murder (section 302 IPC) & culpable homicide not amounting to murder (section 304 IPC) in the country.

Justifications for Honour Killings

So-called honour crimes occur in societies in which there is interplay between discriminatory tribal traditions of justice and statutory law. In some countries this is exacerbated by inclusion of Sharia, or Islamic law, or Zina (sex outside of marriage) as a crime within statutory law. Similarly in India honour killings happen in cases of inter- religion or inter -caste marriage. Due to women's enforced seclusion, submission to men and second-class citizenship, women seldom know their rights under national or international law, and rarely have a chance to defend themselves in a court of law

Communal Aspect of Honour Killings

In India honour killings are part of a community mentality. Large sections of society share traditional conceptions of family honour and approve of honour

killings to preserve that honour. Even mothers whose daughters have been killed in the name of honour often condone such violent acts. Such complicity by other women in the family and the community strengthens the concept of women as property without personal worth. In addition, communal acceptance of honour killings furthers the claim that violence in the name of honour is a private issue (by khap panchayats) and one to be avoided by law enforcement. Community acceptance of these killings stifles accurate reporting of the number of violent crimes against women in the name of honour. As a result, the true extent of the prevalence of honour killings is still not fully known. 'Khap' panchayats are caste or community groups, present largely in rural areas of North India, which at times act as quasi-judicial bodies and pronounce harsh punishments based on age-old customs. Several cases of women and men falling victim to ' khap' diktats have been reported over the years, particularly in states like Haryana, Uttar Pradesh and Rajasthan.

Various Legal and Constitutional Provisions

The Constitution of India has ample provisions allowing an individual to exercise his/her choice independent of caste, religion or gender and protection from honour related crimes including honour killings. Following are those Constitutional provisions that substantiate this:

Honour Killings are cases of homicide and murder which are grave crimes under the Indian Penal Code (IPC) Section 299 and 301 ,which deals with culpable homicide not amounting to murder while Section 300, deals with murder. Honour killing amounts to homicide and murder because the

acts are done with the intention of murdering the victims as they have purportedly brought dishonour upon the family. The perpetrators can be punished as per Section 302 of the IPC. The khap panchayats or family members can also be booked under Section 302 of IPC for instigating suicide those who transgress the so called norms of the community. Such killings also violates Articles 14, 15 (1) & (3), 17, 18, 19 and 21 of the Constitution of India.

Article 14 of the Indian Constitution guarantees to every person the right to equality before the law or the equal protection of the laws. Every person, whatever is his or her status or situation is subject to the jurisdiction of the ordinary courts. This right to equality is thus asserted as one of the fundamental features of the Indian Constitution. Honour Killings are thus hideously against this very Constitutional right provided for the protection of Indian citizens. Honour killings are mainly directed towards women and thus give rise to gender violence. It is also violation of Article 19 and Article 21 of the Constitution. Such brutal murders, under the garb of saving the honour of the family, are clearly against the Constitutional provisions enshrined in Article 21. Khap panchayats violate a person's fundamental right to life as they kill or instigate murder, in the name of honour. Every person has a right to live. The capital punishment is possible only when granted by law.

Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 was enacted by the Parliament of India, in order to avert atrocities against Scheduled Castes (SCs) and Scheduled Tribes (STs) in society. The intention of the Act was to help the social inclusion of Dalit's into Indian society. It defines acts such as forcing an SC/ST to eat or drink any inedible or obnoxious substance, removing

clothes, parading naked or with painted face or body, assaulting, dishonouring and outraging the modesty of an SC/ST woman, sexual exploitation of an SC/ST woman, forcing an SC/ST to leave his or her house or village as punishable. The Act is linked to honour killings because numerous incidents of honour killing are in relation to caste and religion.

The Protection of Human Rights Act, 1993 makes the provision for protection of individual rights of human beings and the constitution of a National Human Rights Commission, State Human Rights Commission and Human Rights Courts for better protection of human rights of individuals.

The Protection of Women from Domestic Violence Act, 2005, provides for more effective protection of the rights of women which is guaranteed under the Constitution who are victims of violence of any kind occurring within the family.

International Provisions

India is a signatory to the United Nations Convention on the Elimination of all forms of Discrimination Against Women (CEDAW, 1979) and has also ratified the convention. The provisions of CEDAW can be used to argue that the tradition and practice of punishing individuals for ill-informed ideas of dishonouring the family, is essentially institutionalized discrimination against individuals and creates a legally binding obligation for India, as a State party to the convention, to take all measures to end all forms of the practice of honour killing and ensure that all discrimination against women in matters relating to marriage and family relations are eliminated, providing them with the equal right to enter into marriage and to freely choose a spouse and to enter into marriage with their free and full consent as enumerated in Article 16 of the Indian Constitution. This means ensuring that informal decision making

bodies functioning on customary laws, such as khap panchayats, are refrained from enforcing their dictates and intrusive with the right of individuals to choose their spouse.

While the Universal Declaration of Human Rights, (UDHR 1948) affirms the principle of the inadmissibility of discrimination and inequity and proclaims that all individuals are born free and equal in dignity and rights and freedom set fourth therein, devoid of distinction of any kind including distinction based on sex. Recalling that prejudice and discrimination against women violates the principle of equality of rights and respect of human dignity, and also obstacle to the participation of women in the political, social economic and cultural life and hampers the growth and prosperity of society and the family. Article 1 and 2 of the declaration state that "all human beings are born free and equal in dignity and rights," and that "everyone is entitled to all the rights and freedoms set forth in" the declaration irrespective of "sex". Therefore as enumerated in the declaration Articles 3 and 5, women are entitled to enjoy the "right to life, liberty and security of person" and also the "right to be free from torture or cruel, inhuman and or degrading treatment". Crimes of honour violate Article 3 and 5 when the purpose of the perpetrator is to inflict severe mental and physical pain on the women.

Under the Article 12 of the International Convention on Economic, Social and Cultural Rights (ICESCR 1976) municipalities (countries) have to take all steps to ensure the "right of everyone to the enjoyment of the highest attainable standard of physical and mental health", is ensured. Crimes of honour that involve sexual violence and mental violence or physical or mental torture or murder obstruct the right of women to enjoy the highest attainable standard of health. India,

as a State party, is therefore legally obligated to ensure that individuals and victims of crimes of honour are able to avail this right.

While not legally binding on the State, the human rights standards enumerated in the Beijing Platform for Action (BPFA 1995) recognizes that the “human rights of women include their right to have control over and decide freely and responsibly on matters relating to their sexuality, including sexual and reproductive health, free of coercion, discrimination and violence”. The Beijing Platform for Action on Women’s Human Rights calls upon States to “take urgent action to combat and eliminate violence against women, which is a human rights violation resulting from harmful traditional or customary practices, cultural prejudices and extremism”.

Two major United Nations documents call for the elimination of honour killing. The concept of elimination appears in the Declaration on the Elimination of Violence against Women, 1993 and in Working towards the Elimination of Crimes against Women Committed in the Name of

Honour, 2003. But the elimination of any such incidents of honour killing requires a serious intervention in the status quo. Equal gender parity should be promoted. The whole system in itself is patriarchal and insensitive. In the words of the UN Declaration on the Elimination of Violence against Women: “Violence against women is a manifestation of historically unequal power relations between men and women, which have led to discrimination over and discrimination against women by men and to the prevention of the full advancement of women, and that violence against women is one of the crucial social mechanisms by which women are forced into a subordinate position compared with men.”

Way Forward

There are many rights and laws brought against honour killing but still the practice of honour killing has become wide spreading incident. The accused knowing that there is rigorous punishment for such a crime still practices it with a mindset that honour of the family is more important than the victim. They are ready to

face the consequences of punishment than facing the consequence of bringing dishonour to the family due to lack of deterrence. Education and awareness about the importance of life of every citizen in this world should be promoted. The laws related to these incidents should be circulated and advertised to create deterrence. The people in the rural and urban areas should be educated and the consequences of the heinous crimes should be known creating awareness to them.

General Studies Paper- I

Topic: Social empowerment, Communalism, Regionalism & Secularism.

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.

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3. UN ARMS TRADE TREATY : AN UNDERSTANDING

Why in News?

Continuing Washington’s drift from multilateralism, US President Donald Trump has announced that he was withdrawing the country from the Arms Trade Treaty.

Introduction

Before the Arms Trade Treaty (ATT) entered into force on December 24, 2014, there were no international laws in the world regulating the arms trade. For many years, civil society had recognized this deficiency and called for global action. In 1997, for example, a group of 19 eminent persons and

institutions that had received the Nobel Prize for Peace — including Dr. Oscar Arias Sanchez, former President of Costa Rica; Desmond Tutu; Jose Ramos Horta and Amnesty International — launched and International Code of Conduct on Arms Transfers. This initiative made its way to the United Nations (UN) a few years later via the Permanent Mission of Costa Rica in New York.

In 2006, the UN General Assembly recognized that the absence of common international standards for the transfer of conventional arms contributes to armed conflict, the displacement

of people, crime and terrorism, and that these in turn undermine peace, reconciliation, safety, security, stability and sustainable social and economic development. Based on this finding, the General Assembly of UN launched a process to examine the feasibility of a treaty establishing common international standards for the transfer of conventional arms. The process culminated in two diplomatic conferences, held in July 2012 and March 2013, to negotiate a legally binding treaty on “the highest possible common international standards for the ... transfer of conventional arms”.

Although the final UN Conference on the Arms Trade Treaty ended without reaching consensus on the draft text of the treaty, the UN General Assembly adopted it by a vote a few days later, on 2nd April 2013. The ATT was opened for signature on 3rd June of that year, and entered into force just 18 months later, on 24th December 2014. Till now, only 130 of the 193 members of the UN have signed the treaty, and of them only 101 ratified it putting it just over the threshold of 100 to come into effect.

Provisions of the Treaty

The ATT is a multilateral agreement that contains 28 articles. Its stated objectives are to establish an international standard for regulating the international trade of conventional arms and to prevent and eradicate the illicit trade in conventional arms and their diversion.

The treaty applies in respect of the export, import, transit, trans-shipment and brokering of conventional arms ranging from warships to missiles and missile launchers, and to small arms and light weapons.

The treaty requires that a state party shall not authorise the transfer of conventional arms listed under Article 2(1) of the treaty where such authorisation would violate (1) UN Security Council resolutions adopted under Chapter VII of the UN Charter, (2) international agreements to which the state is a party, or (3) where the state has knowledge at the time of authorization that the arms would be used in the commission of war crimes.

State parties are required to keep national records of their export authorisations, imports of conventional arms as well as those that transit through their territory.

The treaty further promotes transparency by requiring state parties to report on measures taken to implement the treaty and to address diversions and to report concerning authorised or actual exports and imports of conventional arms.

ATT and Multilateralism

Given the great difficulties it encompassed as well as the great real impact it can have on the ground in reducing human suffering, the adoption of the ATT was indeed a historical achievement of the international community. It also reaffirmed the relevance of the UN and multilateral diplomacy, in particular in an area as controversial as the regulation of conventional arms, and in which no progress had been registered for so many years.

According to Amnesty International, more than 500 people die every day from gun violence, 44 percent of all killings globally involve gun violence and there were over 1 million firearm-related deaths globally between 2012 and 2016. In contrast, military expenditure is on the rise. According to the Stockholm International Peace Research Institute (SIPRI), the United States (US) continues to be the top global exporter of arms and the 13th global importer (with Saudi Arabia holding the first position), with a total military expenditure in 2018 of \$6.5 billion. This is more than 120 times the UN budget for the period 2018-2019.

It is for these reasons that the recent announcement to

“revoke” the US signature of the ATT is so troubling. The world is in dire need of an effective implementation of the only global legally binding instrument that regulates the international trade in arms.

Reasons Cited by the US for Withdrawal from ATT

At a meeting of the National Rifle Association, President Trump dramatically pulled out a letter for ending US participation in the treaty and signed it on stage to a standing ovation by the audience of weapons control opponents. Mr. Trump said he would ask the US Senate not to ratify the pact.

He called the ATT “badly conceived” and said: “The UN will get notice that we are formally rejecting this treaty.”

“Under my administration, we will never surrender American sovereignty to anyone, Trump said, before signing a document on stage asking the Senate to halt the ratification process. “We will never allow foreign diplomats to trample on your Second Amendment freedom,” Trump said, before signing a document on stage asking the Senate to halt the ratification process.

It has been said that Trump made the announcement as he vowed to fight for gun rights and implored members of the nation’s largest pro-gun group — struggling to maintain its influence — to rally behind his re-election bid.

In a statement released after Mr. Trump's speech, the White House said the treaty “fails to truly address the problem of irresponsible arms transfers” because other top arms exporters - including Russia and China - have not signed up to it.

A senior US administration official said that while the US has rules in place to govern its arms transactions, those countries (i.e. China and Russia) did not have any and would not be governed by the treaty either.



Further, the official said the British government is being sued by an NGO, Campaign Against Arms Trade citing the treaty to stops arms sales to Saudi Arabia, a Washington ally, and implied that the US could face similar challenges if it continued to be a part of the ATT.

ATT and India's Concern

On 2nd April 2013, the UN General Assembly adopted the ATT as a resolution by a 154-to-3 vote with 23 abstentions. North Korea, Iran, and Syria voted against the treaty while India, China and Russia, among the world's leaders in weapon exports, were among the 23 nations that abstained. India remained abstain from voting mainly due to two key issues which were at the heart of India's concerns: a) the skewed approach of the treaty b) its failure to include non-state actors in its purview.

According to the Stockholm International Peace Research Institute (SIPRI), India is the world's largest arms importer, accounting for around 13% of total global arms import between 2012 and 2016. As an importing state, it expected that the treaty would ensure a "balance of obligations" between exporting and importing states. However, India was disappointed with the outcome text which was allegedly tilted in favour of the exporting states. It argued, along with a number of others, that the treaty was designed in a way that it could be easily exploited as a justification to unilaterally deny arms to an importing country. This would threaten India's national security imperatives.

India is also a state plagued by terrorism, and therefore one of its major expectations from the treaty was that it would be tough on terrorism. However, the treaty does not include non-state actors in its purview, and therefore does not address the pressing concern of illicit trafficking and use of

conventional arms by non-state actors. This is a major lacuna which may serve to make the treaty ineffective.

Multilateralism and US Withdrawal

This recent withdrawal of US from ATT is another in a series, following the Trump administration's withdrawals from the Paris Climate Accord, the UN Human Rights Council, the UN Educational, Scientific and Cultural Organisation (UNESCO) and its refusal to negotiate or sign the Global Compact on Migration.

Earlier, the Trump administration confirmed that the US will withdraw from the 1987 Intermediate-range Nuclear Forces (INF) Treaty citing the violation of the treaty by Russia. The Trump administration has further withdrawn from the Trans-Pacific Partnership (TPP) and threatened to withdraw from the North Atlantic Free Trade Agreement (NAFTA).

Withdrawal is being used as a weapon to secure the unilateral interests of the US and this poses serious challenges to the post-World War II multilateral framework that is based on mutual understanding and negotiations. The US has been a leading advocate of this framework. It master-minded the creation of the 'League of Nations' and played a crucial role in the formation and operation of the UN.

The complex challenges facing the world today demand greater, rather than reduced, cooperation. No country can single-handedly manage these challenges. The sudden retreat to an "America First" policy sacrifices multilateralism upon the altar of US domestic politics. No doubt, States should seek to promote their interests in their international relations. However, the nature of global challenges today demands that we seek to engage with the international community in doing so. This inevitably requires capitalising on common interests, finding win-

win solutions and remaining open to constructive compromise.

Management of the global flow of arms is essential to maintain international peace and security. The US, as a permanent member of the UN Security Council, should lead by example in this regard. By withdrawing from the ratification process of the ATT, the US is also forgoing its privileges under the treaty to hold other nations accountable in respect of their arms trade activities.

The aggressive pursuit of unilateral solutions is weakening the multilateral framework of international relations. The Trump administration needs to re-examine its foreign relations orientation in this regard. "Making America great again" requires retaining and maintaining bridges, not burning them down.

Conclusion

For effective implementation of the ATT, the only global legally binding instrument that regulates the international trade in arms, it is key to have on board the largest exporter in the world i.e. US, if not as a State Party, at least as a responsible actor committed not to undermine the object and purpose of the treaty, which has at its core international peace and security and, most importantly, the value of the human person. Unfortunately, this political decision, based on false premises, and coupled with a consistent pattern of attacks on multilateral diplomacy, seems anything but promising.

General Studies Paper- II

Topic: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

Topic: Important International institutions, agencies and fora- their structure, mandate.



4. AIRCRAFT CRASH : A BIG CHALLENGE TO AVIATION INDUSTRY

Why in News?

2019 saw some major aviation failure where aircraft crashed or faced technical glitches. Recently, in this addition were two Boeing-737 crashes in the Java Sea near Indonesia and Ethiopia. And in other incident Russian passenger plane crashed killing at least 41 people after aircraft caught fire while making an emergency landing at airport.

Introduction

The airline industry was born from technological breakthroughs in aviation that started in the early 1900s and keep on going these days. The first half of the 20th century was like the “incubation period” for the industry, during which technology was developed and became mature. It is witnessed that since the beginning of the 21st century, a remarkable improvement has been recorded and the current tendency in the development of air transport safety is positive. For a substantial progress in air transportation safety to be achieved, it is necessary to focus on the most frequently occurring and types of air accidents. It is also important to focus on the phases of flight especially on its beginning (takeoff) and end (landing).

When assessing the development in accidents it follows that despite of an enormous progress made in the field of air traffic, its safety fail to develop to satisfaction, with causes identified as incomprehensive approaches to learning and appreciation the human factor.

A view on the air transportation taken from the aspect of the shares of the continents in terms of accidental rate shows that safety of air transportation in the USA, Canada and Europe is more favorable compared to the world average, however, even at these continents it is still necessary to accelerate efforts for further and substantial improvements.

Boeing 737

The crash of an Ethiopian Airlines plane, five months after the Lion Air crash in Indonesia, has forced Boeing to ground all its 737 MAX aircraft.

The Boeing 737 MAX series is a single aisle aircraft fitted with high-bypass twin-turbofan engines. It is the fourth generation variant of the Boeing 737 aircraft, a base model which has been in production since the 1960s.

What led to the Global Grounding?

In October 2018, a two-month-old Boeing 737 MAX 8, operated by Lion Air of Indonesia, crashed approximately 12 minutes after being airborne, killing its 189 passengers and crew. The pilot, with more than 6,000 flight hours and the co-pilot, with more than 5,000 hours, formed an experienced team.

In March 2019, another flight by a four-month-old 737 MAX 8, operated by Ethiopian Airlines, crashed approximately six minutes after takeoff. All 157 passengers and crew were killed.

The disparity in the flight hours of the crew, about 8,000 for the pilot, and just 200 hours for the co-pilot, has led to some scrutiny. Similarities between the two events, of the flight crew reporting certain technical difficulties, requesting a return to base, the scientific tracking of an unstable flight trajectory and airspeeds and also the ‘gathering of some technical evidence’ (in Ethiopia), have led analysts to opine that there could be an issue with one of the aircraft’s key control systems. It may take time for data from the black boxes to be analyzed and acted upon.

Impact on Aviation Industry due to Grounding

An extended grounding which some experts opine could be till May or beyond could hit its bottom line. The Ethiopian crash even caused it to drastically tone down the unveiling of a newer model of its flagship Boeing 777 family, with its unique feature of partially folding wings. Given the reported conflict of interest in certification of aircraft, Boeing will have to work fast and transparently.

It will have to look at tackling the issue from three angles, as aviation experts like Diogenis Papiomytis of consulting firm Frost and Sullivan have suggested: if it is a software issue, it could be sorted out in the planned battery of software upgrades — this could be soon. If it is about better pilot training, it will have to work out revamped and comprehensive training modules across the world and additional type certification. Aviation authorities will also have to maintain vigil as passenger safety is paramount.

This could affect some airlines in terms of costs. Finally, if it is traced to a structural issue, the American aerospace giant could be hitting an air pocket, with ripple effects down the aviation global supply chain. The 737 is a cash cow, but there are already those who accuse Boeing of pushing its 52-year-old plane model too far.

Causes of Air Accidents

The main causes of aviation accidents include human error and mechanical problems. The regulatory authorities world over have safety protocols for pilots, aircraft maintenance, and manufacturers of aircraft but even with all these safety procedures in place accidents occur. Any misstep in the chain of inspection or overlooked detail can have devastating consequences.

According to the Federal Aviation Administration (FAA), regulatory body for US aviation industry, the most

common reasons for aviation accidents are: pilot errors; mechanical failure; weather; violation of FAA regulations; Aircraft structural or design problems; flight crew error; air traffic controller error; maintenance or repair carelessness; and fueling mishap.

Roughly, 80 percent of all aviation accidents occur shortly before, after, or during takeoff or landing. These accidents are frequently due to human error. Aviation mid-flight accidents are very rare but they do happen and can have disastrous and deadly consequences. The leading causes of

mid-air disasters are: sabotage; mid-air collisions; and structural failure.

The ICAO and Air Safety

Aviation safety and civil aviation rules are the result of adapting and developing rules and organisation structures originally related to marine traffic. A fundamental milestone in this direction was in 1944, the Convention on International Civil Aviation (also known as the Chicago Convention), followed in 1947 by the constitution of International Civil Aviation Organization (ICAO) as a specialised agency of the United Nations, originally created to promote the safe and efficient development of civil aviation.

Annexure 13 of ICAO states about aircraft accident and incident investigation. This Annex provides the international requirements for the investigation of aircraft accidents and incidents. The objective of the investigation of an accident or incident is its prevention. Subsequently the causes of an aircraft accident or a serious incident must be identified to prevent repeated occurrences.

Under Annex 13, the particular state in which the accident or incident occurs will lead the investigation, but it may delegate all or part of the

investigation to another state. If the occurrence takes place outside the territory of any state, the State of Registry has the responsibility to conduct the investigation.

Representatives of the State of Registry, Operator, and Manufacturer are entitled to take part in the investigation. The investigation process is aimed to the determination of the causes of the accident or incident and leads to the issue of a final report including appropriate safety recommendations to prevent similar occurrences.

The ICAO operates a computerised database known as the Accident/ Incident Data Reporting system allowing the exchange of safety information in any Contracting State. The safety recommendations are evaluated by the airworthiness authorities to issue, when deemed necessary, airworthiness directives (ADs) (for mandatory modifications, inspections, etc.), and amendments of the relevant airworthiness requirements and advisory material.

Air Safety in India

India is one of the lowest-ranked countries in the world when it comes to air safety. India's air safety oversight is

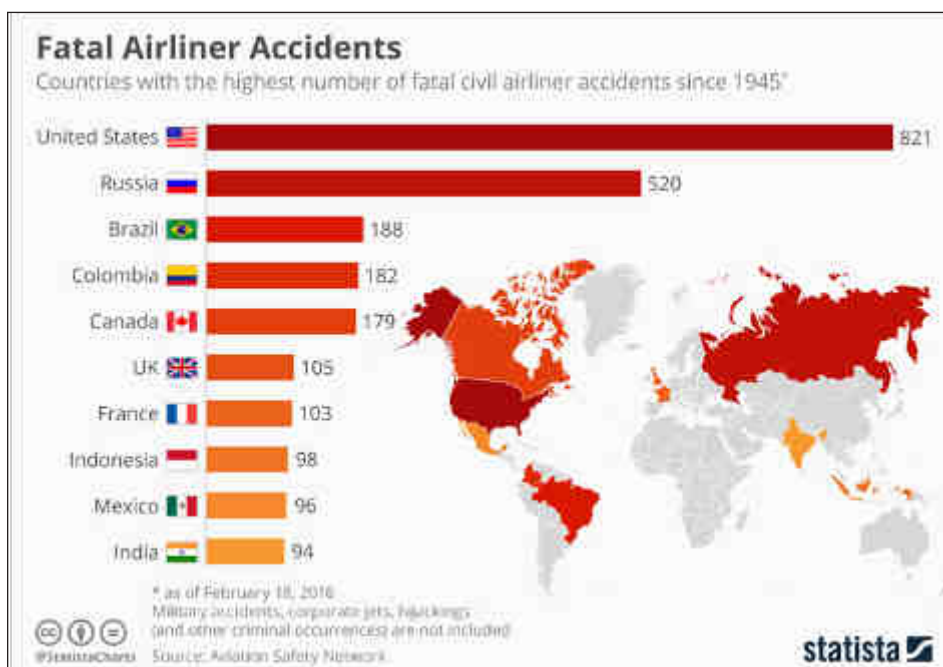
lower than its Asia-Pacific counterparts such as Bangladesh, Maldives, Pakistan, Nepal, Sri Lanka and North Korea. The countries that have fared worse than India are small, lesser-known states like Timor-Leste, Samoa and Vanuatu. India is one of the 15 countries that have scored below the minimum target rates.

The ranking is the result of an aviation-safety audit conducted by the United Nations' International Civil Aviation Organisation (ICAO) in 2017. The findings revealed that India slipped below its previous ranking of 66% to 57%. The ICAO Universal Safety Oversight Audit Programme seeks to look at countries that have effectively and consistently implemented the critical elements of a safety-oversight system.

One of the consequences of a low score is a potential downgrading by US aviation regulator Federal Aviation Administration (FAA). The FAA was in India in 2018 to conduct an audit after India slipped in its score. A downgrade by FAA would mean that Indian airlines won't be able to run new flights to the US or form alliances with US airlines. Indian carriers that would land in US would also face harsher checks. India has already been downgraded once - in 2014. The downgrade was removed after a year.

The report says that one of the reasons behind India's dismal performance is the government's neglect of aviation regulator, Directorate General of Civil Aviation (DGCA). There has been a "drastic reduction" - from 89% to 26% - in the effective implementation rate in the area of personnel licensing. This led to a major fall in India's score.

The ICAO highlighted that the licensing of air-traffic controllers (ATC) was being carried out by state-run Airports Authority of India (AAI), which was one of the key areas of concern. As per international practices, the DGCA should issue licences to ATC



officials who play a very important role in the seamless management of flight operations across the country.

Conclusion

India is one of the fastest growing aviation markets. But the infrastructure needed to cater to this growth is not keeping pace. For example, India has between 2,500 and 2,800 air traffic controllers. It needs to hire at least 1,200 more to relieve enormous stress

on these officers. In fact, the Airports Authority of India (AAI) which manages air traffic controllers is too bureaucratic body. To make air traffic management better, there's a good case to hive off air traffic control from AAI and run it as a separate corporatised outfit with adequate rewards for high skills. This will not only lead to more efficient management of Indian airspace and improve safety, but also create a framework for India to become an

aviation hub like Dubai or Singapore. It's time deep structural reforms are undertaken – to keep fliers safe, but also to help Indian aviation reach its full economic potential.

General Studies Paper- III

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



5. INTERNET OF THINGS : COMMUNICATION AMONG MACHINES

Context

According to the New National Digital Communications Policy, 2018, India envisions an estimated 5 billion Internet of Things (IoT) connections by 2022, and a USD \$1 trillion digital economy by 2025. But, according to recent report by Accenture has concluded that though IoT could be a game changer for India, but the country is lagging far behind China in its adoption.

Introduction

Internet of things (IoT) is an integrated system in which devices are connected in a network of information in such a way that they can communicate with each other without any human intervention. It actually is the inter-networking of physical devices, vehicles (also referred to as 'connected devices' and 'smart devices'), buildings and other items embedded with electronics, software, sensors, actuators, and network connectivity which enable these objects to collect and exchange data.

IoT is not a single technology, but a concept. IoT research has its roots in several domains, including Radio-Frequency Identification (RFID), Machine-to-Machine (M2M) communication and Machine-Type Communication (MTC), Wireless Sensor and Actuator Networks (WSAN), Ubiquitous Computing, and the Web-

of-Things (WoT). It permits a more direct assimilation of the physical world with computer-based applications and systems through which objects can be sensed and manipulated remotely. Augmented with actuators and sensors, the IoT becomes an example of what is called cyber-physical systems. It also involves smart grids technology, smart home technology, smart cities and intelligent transportation. The goal of IoT is to enable things to be connected any time, any place, and with anything or anyone. Thus, some analysts also prefer to call it 'The Internet of Everything', or 'IoE'.

While the fixed internet connected 1 billion users via PCs, and the mobile internet connected 2 billion users via smart phones (on its way to 6 billion), IoT is expected to connect 28 billion "things" to the Internet by 2020.

Applications of IoT

It is important to discuss various applications of IoT. It can be done by analyzing the affect of IoT on:

Normal Life

When the alarm of our smartphone rings in the morning, we wake up and tap it to stop the alarm which causes your geyser to be switched on automatically. The smart mirror in our bathroom shows the day's weather and also indicates the level

of water in your overhead tank. After we take some groceries from your refrigerator for making breakfast, it recognizes the shortage of stock in it and places an order for the supply of fresh grocery items. When we step out of your house and lock the door, all lights, fans, geysers and AC machines get switched off automatically. On our way to office, our car warns us about traffic congestion ahead and suggests an alternative route, and if we are late for a meeting, it sends a message to our office accordingly.

Agriculture

Farmers have also been turning to connected sensors to monitor both crops and cattle, in the hopes of boosting production, efficiency and tracking the health of their herds. For example, farmers in Brazil are expected to use unmanned tools such as drones, to collect, analyze and transmit real-time crop intelligence to keep a check on the usage of chemicals, and irrigate dry fields to generate sustainable and high-yielding results. This information can then be transmitted to farmers over mobile handsets. Analysis of vast data generated, enables farmers to make informed real time data-based decisions about utilization of their resources and overall performance of their yield. In addition to it, drones can be made to dispense fertilizer

and pesticides over acres of farmland in a very efficient manner, guided by precise positioning and long range wireless connectivity.

Further, Voluntary Milking Systems (VMS) has gained prominence in some parts of Europe. The system “enables cows to voluntarily approach robots for milking up to four times a day, according to their biological needs”.

Smart irrigation systems are specifically suited for arid and semi-arid regions. Smart irrigation technology can ensure efficient use of water resources based on the humidity of the soil, the needs of the crop and weather patterns, which when integrated with the right type of sensors and connectivity will result in optimal usage of a scarce resource.

Business and Work

The IoT’s impact on business can be understood by focusing on the capacity of IoT application to:

- ◆ Informate, for example, by gathering information through sensors, to
- ◆ Automate and prescribe activities, for example by allocating a function to a system or by supervising the fulfilment of an activity, and to
- ◆ Transform activities, for example by redesigning a business process.

Sensor-gathered data may enable informed decision-making by managers, but automated checks might also constrain a person’s freedom to act differently.

The scale of IoT’s impact will depend on the type of industry. For example, manufacturing is perhaps the furthest ahead in terms of IoT, as it’s useful for organizing tools, machines and people, and tracking where they are. Applications for tracking goods, real time information exchange about inventory among suppliers and retailers and automated delivery will increase the supply chain efficiency. By triggering responses that would

have been expensive and difficult to achieve through traditional means, manufacturing becomes more cost-effective and efficient with cascading effects on society.

Healthcare

Smart pills and connected monitoring patches are already available, highlighting the life-saving potential of IoT. Many people are already strapping smart watches or fitness bands to their wrists to track their steps or heartbeat while on a run. Further, there’s a host of clever connected health ideas that are using the concept of IoT. E.g. Intel made a smart band that tracks how much patients with Parkinson’s shake, collecting more accurate data than with paper and pen.

In context of India, which has a dismal doctor-to-patient ratio of 1:1674, and the skewed urban-rural ratio sometimes denies treatment to patients. This is where IoT can make a life-saving difference through wearables, remote diagnosis and the monitoring of health parameters.

Healthcare is one area where more data has the potential to save lives, by preventing disease, monitoring it and by analysing it to create new treatments. However, our health is also one of the most sensitive areas of our lives, so privacy and security will need a bit more preventative medicine first.

Society in General

Lives of people would become easier with IoT as it will help in day to day life as well as in the professional life. As these two helps in saving time and burden in day to day lives it goes far more reliable with no human physical interaction requirement. It also goes environment friendly as it will encourage the nation towards cashless economy.

Smart Environment

A very important application of IoT is detecting pollution and natural

calamities. We can monitor the emissions from factories and vehicles to minimize air pollution. We can track the release of harmful chemicals and waste in rivers and the sea, thereby arresting water pollution. We can also keep tabs on the quality of water being supplied for drinking. We can send warnings of earthquakes and tsunamis by detecting tremors. We can keep the water level of rivers and dams under surveillance to be alert in case of floods. The detection of forest fire is also possible with this technology.

Building Smart Cities

Cities and municipalities face the conflicting challenges of promoting economic growth and ensuring sustainable development. The IoT is widely seen as answer for the same, by promoting growth and achieving environmental goals though curbing emissions, discouraging environmentally harmful behaviours and encouraging energy saving.

Smart surveillance, automated transportation, smarter energy management systems, water distribution, urban security and environmental monitoring all are examples of internet of things applications for smart cities. Several cities in UK are currently aiming to be centers of this revolution by developing IoT infrastructures to digitize existing physical infrastructures for energy, water and transport.

Disadvantages of IoT

The main concerns that accompany the Internet of Things are:

The Breach of Privacy

Privacy issues arise as a result of the compilation of fine-grained data about the consumption behaviour of individuals and neighbourhoods, and from the creation of predictive models for energy, water and transport usage. It is not difficult to imagine a future city-

wide information system that knows where you live, knows when you are home and can predict when you will leave, knows when and how often you watch TV or use your washing machine, knows when and how often you use your car, and can predict where you drive or which bus you are going to take in the morning. It would know this because of sensors in your home and car, and digital traces collected by your digital transport ticket. Opting out of such a system may not be easy, if it meant non-availability of basic services such as heating or transport, or required paying a premium.

The privacy issues also leads to the question of who will control the IoT? If there is only one company, that could potentially lead to a monopoly hurting consumers and other companies. If there are multiple companies that are given access to the information acquired, doesn't that breach consumers privacy? Also, where is the information going to be stored?

Further, if all of our information is stored on the internet, there is always the possibility of hackers breaking into the system and stealing the data.

Over-Reliance on Technology

The more we entrust and the more dependent we are on the Internet could lead to a potentially catastrophic event if it crashes.

Loss of Jobs

It will have a devastating impact on the employment prospects especially of less-educated workers. For example, we already are witnessing jobs being lost to automated machines, such as the checkout line in supermarkets and even ATM's.

Lesser Employment of Menial Staff

The unskilled workers and helpers may end up losing their jobs in the effect of automation of daily activities. This

can lead to unemployment issues in the society. This is a problem with the advent of any technology and can be overcome with education. With daily activities getting automated, naturally, there will be fewer requirements of human resources, primarily, workers and less educated staff. This may create unemployment issue in the society.

Complexity

The IoT is a diverse and complex network. Any failure or bugs in the software or hardware will have serious consequences. Even power failure can cause a lot of inconvenience.

Technology Takes Control of Life

Our lives will be increasingly controlled by technology, and will be dependent on it. The younger generation is already addicted to technology for every little thing. We have to decide how much of our daily lives are we willing to mechanize and be controlled by technology.

All these disadvantages can be largely devastating to society as a whole, as well as individuals and consumers.

Is IoT Safe and Secure?

Security and privacy are the biggest challenges for IoT. To utilize the potential of IoT, all connected devices and systems collect a lot of personal data about people – that smart meter knows when you're home and what electronics you use when you're there – and it's shared with other devices and held in databases by companies.

Security experts argue that not enough is being done to build security and privacy into IoT at these early stages, and to prove their point have hacked a host of devices, from connected baby monitors to automated lighting and smart fridges, as well as city wide systems such as traffic signals.

At present there are likely not enough people using connected

appliances for an attack against them to be worth the effort, but as ever, as soon as there's a financial benefit to hacking smart homes, there will be a cyber-criminal working away at it.

It can therefore be said that, IoT is relatively safe. However, there's no guarantee, and so far not enough is being done to ensure IoT isn't the next big hacking target.

Challenges in Adoption of IoT by India

Most of the Indian technology companies (primarily in the IT and Telecom domains) are primarily service businesses and are not product or platform companies. In order to lead the IoT space, and leverage the domestic and global market opportunities and most importantly compete with global companies, Indian technology-based companies need to evolve into product and platform developers.

The IoT value chain in India is also disconnected and fragmented. There is a lack of component players, which is a key hindrance for design, testing and development of IoT products in India. Sourcing these components (mainly from China) is a time consuming process, which could extend the product development cycle, and could also introduce potential quality issues.

Further, India has the fewer number of large-scale electronics and semiconductor products manufacturing facilities. Also, wireless data connectivity is not ubiquitous in India.

Security could be of the utmost concern, as data would be exchanged over connected devices and underpinned by data breach of personal information. Data privacy in digital infrastructure holds a high value as it is directly related to personalization and real-time insight generation.

According to the Department of Electronics and Information Technology

(DeitY), the IoT industry in India is expected to be a \$15 billion market by 2020. It is expected that India would have a share of 5-6% of the global IoT industry.

Conclusion

Is the internet of things real? It's tough to answer. Technology is full of marketing and hype – it's often difficult to decide early on whether an innovation is truly ground-breaking or not.

But the internet of things is one of those wider ideas that aren't dependent on a single project or product. The idea of connected sensors and smart devices making decisions without our input will continue.

A decade from now, everything could be connected or perhaps only

bits and pieces with specific benefits, such as smart meters; and we may call it IoT, smart devices or not call it anything at all, the way smartphones have simply become phones.

It is all-pervading nature of IoT technology that makes it one of the key drivers of future economies. It will not be long before it becomes a case of 'participate or perish'.

While current IoT applications are still very traditional, there is likely be more radical, emergent, unpredictable, and user-led innovation in the future; just as we have seen with the Internet.

The Organisation for Economic Co-operation and Development (OECD) compares IoT's significance and potential ubiquity to the advent of household electricity and sees it

extending beyond technology and commerce to redefine our social, cultural and professional relationships.

If we are to deliver the benefits which IoT promises – from more equitable sharing of healthcare services to connected homes (with permanently stocked fridges); to self-optimizing production lines and super-productive farms etc.; there is an inherent need to educate the population on everything IoT comprises and what they can expect in their futures.

General Studies Paper- III

Topic: Science and Technology-developments and their applications and effects in everyday life.

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6. BIODIVERSITY AND ECOSYSTEM SERVICES : DECLINING AT UNPRECEDENTED RATE

Why in News?

It's long been no secret that people are destroying the natural world all around the planet at a rapidly accelerating pace, but a landmark United Nations (UN) intergovernmental analysis released recently assessed the state of global biodiversity and finds that the devastation is proceeding at a rate that is tens to hundreds of times faster than during the past ten million years - a rate never seen before in history - and could plunge the planet into a sixth mass extinction event. Further, the report warns that nature and its vital contributions to people, which together embody biodiversity and ecosystem functions and services, are deteriorating worldwide.

Introduction

The Global Assessment Report on Biodiversity and Ecosystem Services of the UN-backed Intergovernmental Science-Policy Platform on Biodiversity

and Ecosystem Services (IPBES) has been compiled by experts from 50 countries over the past three years and evaluates changes over the past five decades. The report relies heavily on research by the International Union for the Conservation of Nature (IUCN), which is composed of biologists who maintain a list of threatened species.

According to the report, more than one million species of plants and animals are at risk of extinction - many of which are predicted to be pushed into extinction within just a few decades - thanks to decades of rampant poisoning, looting, vandalism and wholesale destruction of the planet's forests, oceans, soils, watersheds, and air.

The report finds that more than 40% of amphibian species, almost 33% of reef-forming corals and more than a third of all marine mammals are threatened and at least 680 vertebrate species had been driven to extinction

since the 16th century. The picture is less clear for insect species, but available evidence supports a tentative estimate of 10% being threatened.

The IPBES executive summary and its underlying report also noted that even seemingly common species not yet threatened with extinction are experiencing steep declines in abundances -- one indicator reports a 60% decline for vertebrate species since 1970 (excluding humans, of course, whose exploding population currently numbers 7.7 billion). Furthermore, direct and indirect human impacts have severely damaged 75% of the terrestrial environment and 40% of the marine environment upon which these animals depend.

Earlier this year, the World Wide Fund for Nature (WWF) released its biennial 'Living Planet Report', a global assessment of the health of animal populations all over the world. They found that the average vertebrate

population — that is, the average size of any given species population in the organization's database, whether it has 10,000 individuals or 10 million — has declined 60 percent since 1970. In addition to it, the IUCN calculated in March that 27,159 species are threatened, endangered or extinct in the wild out of nearly 100,000 species biologists examined in depth. That includes 1,223 mammal species, 1,492 bird species and 2,341 fish species. Nearly half the threatened species are plants.

Other Findings

- ◆ Three-quarters of the land-based environment and about 66% of the marine environment have been significantly altered by human actions. On average these trends have been less severe or avoided in areas held or managed by indigenous peoples and local Communities.
- ◆ More than a third of the world's land surface and nearly 75% of freshwater resources are now devoted to crop or livestock production.
- ◆ The value of agricultural crop production has increased by about 300% since 1970, raw timber harvest has risen by 45% and approximately 60 billion tons of renewable and non-renewable resources are now extracted globally every year - having nearly doubled since 1980.
- ◆ Land degradation has reduced the productivity of 23% of the global land surface, up to US\$577 billion in annual global crops are at risk from pollinator loss and 100-300 million people are at increased risk of floods and hurricanes because of loss of coastal habitats and protection.
- ◆ In 2015, 33% of marine fish stocks were being harvested at

unsustainable levels; 60% were maximally sustainably fished, with just 7% harvested at levels lower than what can be sustainably fished.

- ◆ Urban areas have more than doubled since 1992.
- ◆ Plastic pollution has increased tenfold since 1980, 300-400 million tons of heavy metals, solvents, toxic sludge and other wastes from industrial facilities are dumped annually into the world's waters, and fertilizers entering coastal ecosystems have produced more than 400 ocean 'dead zones', totalling more than 245,000 km² -- a combined area greater than that of the United Kingdom.
- ◆ Negative trends in nature will continue to 2050 and beyond in all of the policy scenarios explored in the report, except those that include transformative change -- due to the projected impacts of increasing land-use change, exploitation of organisms and climate change, although with significant differences between regions.

Reasons for Biodiversity Loss

Why do we have this biodiversity crisis? The new report breaks it down into five main factors, but the presence of humanity looms over them all. Here are the top five ways that people are speeding up the losses:

Changes in Land and Sea Use

The top threat to species on land due to humans is habitat loss. About 75 percent of land on Earth has been "severely altered" by human actions. Since 1992, urban areas have grown by more than 100 percent. Elsewhere, agriculture to feed the world's growing population has taken over many once-diverse habitats such as old-growth forests, wetlands and grasslands.

85 percent of wetlands that were present in 1700 were lost by 2000, and that forests now cover just 68 percent of the area they covered in preindustrial times. What's more, the production of food crops is up by 300 percent since 1970, and in the world's tropical regions, agricultural lands expanded by 100 million hectares from 1980 to 2000. In Southeast Asia, palm oil plantations have edged out once-intact forests, while in Central America, cattle ranches have expanded into forested areas.

Overfishing the Oceans

Habitat loss is a problem in the oceans, too — about 66 percent of the ocean surface area has been altered by human actions. But the top threat to marine creatures from people is overexploitation. Industrial fishing spans more than 55 percent of the ocean's surface area, and about 33 percent of the ocean's fish stocks are being harvested at unsustainable levels.

Among the world's most overfished species are Atlantic halibut, bluefin tuna and all types of sharks. Other species, such as dolphins and loggerhead turtles, suffer as bycatch when they are inadvertently trapped during fishing activities.

Climate Change

The world has already warmed by an average of about 1 degree Celsius since preindustrial times. That warming is linked to the frequency and intensity of extreme weather events such as floods, fires and droughts, as well as to rising seas and to shifts in where species are distributed around the globe. And warmer ocean waters are also placing stress on many fish populations, reducing the amount of fish that can be caught sustainably, without doing long-term damage to populations.

Land-use changes are also tied to climate change: Land clearing, crop

production and the use of fertilizers currently account for about 25 percent of the world's greenhouse gas emissions. Three-quarters of those emissions come from animal-based foods. And as a result of decreasing diversity, some tropical forests are contributing more carbon dioxide to the atmosphere than they are absorbing.

Pollution

Among the worst recent offenders is marine plastic pollution, which has increased tenfold since 1980 and affects at least 267 species, including 86 percent of marine turtles, 44 percent of seabirds and 43 percent of marine mammals.

Plastics, particularly microplastics, can find their way into soils, too. And other kinds of pollution are still a problem, including untreated urban and rural waste, mining and agricultural waste and oil spills.

Invasive Alien Species

Thanks to global trade and travel, humans have introduced invasive species to vulnerable areas around the world. Across 21 countries with the most detailed records, the number of invasive species per country has increased by about 70 percent since 1970. Those invaders not only compete with native species for water and other resources, but also — like the frog-killing chytrid fungus or the tree-munching emerald ash borer — can wipe out vast numbers of native animals or plants.

What We Lose When We Lose Species

Each species' genetic code is like the sheet music of a symphony, each letter of its DNA a musical note, written, rewritten, edited, and reshaped over millions of years. Losing these species is like losing a great work of art, or a tremendous library. The death of a

species is the death of a tremendous amount of natural history. Nature is a slow author; humans kill with vicious efficiency.

When we lose species, we lose access to learning about their biology. Last year, scientists discovered that a rare species of corn essentially makes its own fertilizer. It's possible that biologists will figure out how to add this trait to other plants, boosting their productivity while lessening the need for chemical fertilizer, which is hugely polluting. If that species had gone extinct, we wouldn't have access to this potential biological tool. When we lose species, we lose out in finding potential drugs made by nature that could help cure human diseases.

And we lose out on the rich ecosystems those species help sustain. What happens when pollinators like bees die off? It means flowering plants don't produce new seeds.

The biodiversity crisis also means we're potentially setting ourselves up for a food crisis. Increasingly, the world's diet is homogeneous. Fewer and fewer varieties and breeds of plants and animals are being cultivated, raised, traded and maintained around the world. If a disease were to wipe them out, we couldn't necessarily turn to nature to find new sources of food.

Biodiversity among Microbes –Concerns and Challenges

However, the report comprehensively analyses the biodiversity of plant and animal species, but it does not include extinctions of microbes, which play a crucial role in ecosystem functioning. Free-living microbes could become locally or completely extinct as their habitats are destroyed. Host-associated microbes, like the ones that help increase plant growth, will likely become extinct in concert with their hosts, such as trees and plants. The UN report emphasizes how human well-being derives from ecosystem services.

Microbes perform many ecosystem services, from preventing dust bowl conditions and helping us grow food.

Moreover, microbes, especially fungi, also play a major role in carbon cycling. As fungi decompose dead organic material, they produce large amounts of carbon dioxide, at much greater amounts than anthropogenically produced carbon dioxide. It's likely that changing conditions will also feedback into decomposition, possibly increasing the amount of carbon dioxide produced.

Though, it is important to study about the biodiversity of microbe population, but it is challenging to study microbial extinction because many of them, especially the ones important to ecosystem services, live in the soil. At the microscopic scale, soil habitats are very heterogeneous, and it's difficult to study or replicate those microclimates in the lab.

Biodiversity and Indigenous People

One aspect highlighted in the report holds out hope: "Nature managed by indigenous peoples and local communities is under increasing pressure but is generally declining less rapidly than in other lands." This is significant since "at least" a quarter of the world's land area is "traditionally owned, managed, used or occupied by indigenous peoples". It's unusual for an international report to admit that the world would benefit from an explicit consideration of the views, perspectives and rights of indigenous peoples and local communities, their knowledge and understanding of large regions and ecosystems. UN agencies have in the past undertaken projects to tap the knowledge systems of indigenous communities. For instance, during 2012 and 2014, it engaged with the local communities in the Solomon Islands, a vulnerable ecosystem. The aim was to document the practices

of the villagers when it comes to preventing natural calamities. Similar outreach efforts have been tried in rural Ghana.

Yet, political orders continue to strip the indigenous across the world of their rights and homelands. In India, the International Work Group for Indigenous Affairs flagged the United Nations' Committee on Elimination of Racial Discrimination (CERD) in March about violations of the rights of the indigenous peoples in the current Draft National Forest Policy. The world must cease to see indigenous communities through the prism of profitability and as impediment to the extraction of natural resources. The world may need to learn from them to ensure a harmonious natural order.

Can Extinct Species be Resurrected?

Using DNA technology, scientists are working on recreating species that have disappeared. The technology, called "de-extinction," is likely at least a decade off, although there are a few possible ways to go about it. The first, "back-breeding," involves mating examples of a living species with traits similar to the extinct species. The second option is cloning — famously attempted in 2009 using the DNA of an extinct Pyrenean ibex and its closest living cousin, the common goat. (The offspring lived only seven minutes.)

The third option is to edit the genes of an extinct species' closest living analog to obtain an approximation. Such work is now underway with the passenger pigeon and woolly mammoth.

But, de-extinction technology has few limitations. For example, de-extinction requires an extinct species' DNA, and that molecule of life only lasts about a million years before degrading. So, resurrection of species that existed more than a million years ago can't be possible through this technology.

Conclusion

The advancing global biodiversity crisis poses serious threats to human health, prosperity, security and even to the future of modern society; indeed, these threats are at least perilous as climate change.

The global assessment serves as an urgent clarion call to politicians, corporate leaders and other decision-makers: we have not met our goals for biodiversity conservation and sustainable development, and as a result, we are courting disaster.

It is not too late to make a difference but only if we start now at every level from local to global. Through 'transformative change', nature can still be conserved, restored and used sustainably -- this is also key to meeting most other global goals. By transformative change, we mean a fundamental, system-wide

reorganization across technological, economic and social factors, including paradigms, goals and values.

But this won't be easy: such transformative changes will require more than 100 developing and non-developed nations -- each with its own priorities and objectives -- to put aside their differences and work together to overhaul established practices in agriculture, forestry and fishery and reject those that are environmentally and economically destructive.

In addition to it, individuals can help with simple changes to the way they eat and use energy. That doesn't mean becoming a vegetarian or vegan, but balancing meat, vegetables and fruit, and walking and biking more. We can actually feed all the coming billions of people without destroying another inch of nature. Much of that can be done by eliminating food waste and being more efficient.

Let's hope that, in 2020, a global conference in China, which will be convened by the UN, will set new decade-long goals to preserve biodiversity.

General Studies Paper- III

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

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7. UN SECURITY COUNCIL REFORMS STILL AWAITED

Why in news?

Recently, France has pushed for United Nations Security Council (UNSC) expansion reforms. French envoy to the UN has said, India and nations like Germany, Brazil and Japan are 'absolutely needed' as permanent members of a reformed and enlarged

UNSC to better reflect contemporary realities.

Background

India — then still under British rule — was among the 51 original members of the UN when the organization was formed in 1945. Delhi's first major brush with the UNSC occurred over Kashmir in

1948, following an invasion by tribal forces backed by the Pakistani military. Indian Prime Minister Jawaharlal Nehru referred the matter to the UNSC, hoping for a favorable outcome. He was rudely disappointed, particularly by the Western powers, which treated the matter more as a dispute between two states rather than the invasion

of one's territory by the other. Indian leaders concluded from this experience that "the Security Council was a strictly political body and that decisions were taken by its members on the basis of their perspective of their national interest and not on the merits of any particular case".

Nevertheless, in 1950, India was elected for its first term on the UNSC. During this period, the council focused mainly on the outbreak of the Korean War. India emphasized through its votes and statements the need for the UN to bring about a peaceful, that is, non-military, resolution to the conflict. In the event, the UNSC voted for armed intervention. Instead of troops, Delhi contributed a field ambulance unit to the UN effort, a modest if elegant gesture given its position on the conflict. Following the war, India played an active role in the repatriation of prisoners-of-war and refugees. After 1991, India began voicing a demand for greater representation in international organisations based on its national capabilities and contributions to the UN system since its inception. At the UNSC, this translated into a demand for permanent membership. Desultory conversations had begun among member states on UNSC reform as of 1993, and various schemes were proposed. Eventually, in the run-up to the 2005 UN Summit, India banded with Brazil, Germany and Japan in campaigning for a permanent seat each in the council.

In January 2011 after hiatus of 19 years, India joined the UNSC for its seventh two-year term as a nonpermanent member. During this absence, India's relationship with the UN had changed dramatically. Accelerating expansion of the permanent membership of the UNSC to include India was among New Delhi's top priorities for its term. India's strategy, however, was rapidly blindsided by crises in Africa and the

West Asia, which also exposed deep divisions between the five permanent members (the P5) – China, France, Russia, the US and the UK – in the UNSC itself. India worked hard to cope with a stream of global events. In doing so, however, it was unable to pursue the originally charted strategy of demonstrating responsible diplomacy in the leagues of the great powers while also making the UNSC a more legitimate and representative organization.

United Nations Security Council

The United Nations Security Council UNSC is one of the six principal organs of the UN which is charged with ensuring international peace and security, accepting new members to the UN and approving any changes to its charter. Its powers include the establishment of global peace, peacekeeping operations and international sanctions as well as the authorization of military actions through resolutions. It is the only body of the UN with the power and authority to issue binding resolutions to member states. The council held its first session on 17 January 1946.

The Security Council consists of fifteen members. The great powers that were the victors of World War-II the Soviet Union (now represented by Russia), the United Kingdom, France, China, and the United States serve as the body's five permanent members. These can veto on any substantive resolution, including those on the admission of new member states or nominees for the office of Secretary-General. In addition, the council has ten non-permanent members, elected on a regional basis to serve a term of two years. The body's presidency rotates monthly among its members. Resolutions of the Security Council are typically enforced by UN peacekeepers.

India's bid to Permanent Membership of UNSC

India believes that the UNSC does not reflect the geopolitical realities and the emergence of a multipolar world order. India wants a permanent membership to the UNSC for two reasons. First, the veto power, which India could use to defend its interests, says against Pakistan as Russia did recently over

the civil war in Ukraine. Second, the permanent membership will be an acknowledgment of India's rise as a global power, ready to play a key role in the council's objectives of international peace and security.

There has been discussion of increasing the number of permanent members. The countries who have made the strongest demands for permanent seats are Brazil, Germany, India, and Japan. Japan and Germany, the main defeated powers in WWII, are now the UN's second- and third-largest funders respectively, while Brazil and India are two of the largest contributors of troops to UN-mandated peace-keeping missions.

India and UNSC

India's strategy with regard to UNSC expansion has followed two parallel tracks. The first focuses on a narrow major-power claim, which emphasizes India's capabilities and contributions to the UNSC as the basis for permanent membership. India is eminently qualified for permanent membership. It is also embodied in India's involvement in the G-4 (Brazil, Germany, India and Japan) group, which includes similarly placed countries in the international system. The second approach focuses on the problem of representation in the UNSC and makes the case for expanding both permanent and non-permanent categories of membership with a view to ensuring that the world's foremost organization for international peace and security reflects the dramatically altered distribution of power since 1945.

India's Permanent Representative to the UN Ambassador Syed Akbaruddin, speaking at the informal meeting of the Plenary on the Intergovernmental negotiations on the question of equitable representation on and increase in the membership of the Security Council earlier this year, had said that on the issue of 'Categories

of Membership', a total of 113 Member States, out of 122 who submitted their positions in the Framework Document, support expansion in both of the existing categories specified in the Charter."In short, more than 90 per cent of the written submissions in the document are in favour of expansion in both categories of membership specified in the Charter," he had said. Akbaruiddin had said that while reform at the UN is a process rather than an event, "there is no process known to us here that has traversed winding pathways in the manner as this process of the reform of the Security Council."

India's Great Power Ambitions

Foremost in Indian calculus, however, lies the Indian aspiration of the institutionalized big power status the permanent seat in the Security Council would confer on India right away. Being a "pen holder" as the permanent member of the Security Council, India would similarly assume the mantle of international peace and security decision-making. India sees itself carrying the necessary abilities, actual and potential, which entitles it to a permanent seat at the Council. Further, the seat on the high table, at the UN's premier, powerful body would provide it the much needed leverage to expand its geo-political and geo-economic clout globally. It would serve as an equalizer to China and Pakistan, its rival and an emerging hegemon in Asia and an ever increasing strategic and security concern in its immediate neighborhood and beyond. India has always seen itself as a democratic alternative to the authoritarian China in a leadership role in Asia. India's millennia old civilizational existence also demands it to be at the top of international hierarchy of states.

Right since its independence, it has become one of the leading contributors of troops to UN

peacekeeping missions. Today, India has over 8000 peacekeepers, which is more than twice that of the P5 group. On the economic side, India has been maintaining the status of World's 6th largest economy for quite some time. Being the 3rd largest active armed force, along with nuclear weapons, India's candidature is justified. ISRO's successful Mars Orbiter Mission (MOM) and placing of indigenous as well as customer satellites including US is another landmark point for its candidature. India has consistently supported the purposes and principles of the UN and has made significant contributions to implementing the goals of the UN Charter.

As India's international profile and capabilities rises due to its ever expanding global and regional footprint in diverse areas like politics, development, economics, and culture and science and technology, India wishes to shift its international position from a rule taker (a constrained role) to a rule maker (a system shaping role). The Indian has joined various regimes like Wassenaar Arrangement Missile Technology Control Regime (MTCR) and Australia Group and the ongoing, high pitched campaign to join the Nuclear Suppliers Group (NSG) amply indicate that India is no more satisfied with being either the target or a mere follower of various international norms and rules and wants now to shape and align them to suit Indian ideas and interests.

Why Reforms Needed?

The world is changing, but not the UNSC. Today the geo-political and economic scenario of world is quite different from the situation of 1945 when the UNSC was established by 51 countries 70 years ago. Though it is felt for a long time that the present structure is flawed, however, to reach the consensus remains out of reach.

The reforms are needed due to following as more number of nations being decolonized and there are sharp contrast between the number of seats and the total number of member states

- Reform is needed to remove the —'Democracy Deficit'.
- It has failed to tackle the crisis of Syria, Gaza, Ukraine among others.
- Need to make it efficient, effective, and credible and a legitimate body.

The three key areas of reform can be summarized as below:

- Equitable Representation:** Presently there are 10 non-permanent (P5) and 5 permanent members in the UNSC. These are not representing the world in a balanced manner, therefore, it is the need of the present day to accommodate various regions e.g. African, Asia Pacific, Latin America etc. in the UNSC.
- Categories of Membership:** Member states that have demonstrated credibility and capacity to shoulder the responsibilities of the principal UN organ should have a presence to ensure the legitimacy of the council.
- Veto Reforms:** The power of veto is frequently cited as a major problem as the P5 members often influence the resolutions making those countries to suffer, which rather need a platform to grow. In this context, the veto must be abolished and by that time the use of veto should be limited in case of vital national security

Problems in the Reform Process

The road for the reforms is not easy. Three powerful members of the UNSC namely Russia, China and the US are opposed to any major restructuring of the Council. Though Russia and the U.S.

have said they would support India's UNSC bid, however, when it comes to proceedings at the UN their positions represent a far cry from the promises they make at bilateral meetings. The U.S. favours only a —modest expansion of the UNSC, while Russia doesn't want any change in the veto arrangement.

The reform of the Security Council can only take place if two-thirds of UN member states vote in favour, along with an affirmative vote from all the permanent members, who enjoy the veto power. Effectively, even if India secures the support of two-thirds of UN members, who are present and voting, it would still need the five permanent members to not use the veto and thereby, prevent the adoption of the reform process. Moreover, the India's bid for the permanent seat in UNSC is being opposed by its nuclear-armed rival Pakistan with other members such as Italy, Mexico, Egypt, Argentina, South Korea, Spain, Turkey and Indonesia

Way Forward

It is important to keep India's most recent term on the council in perspective, recognizing that Delhi has proved to be a more responsible actor and constructive interlocutor in the international system than many other states. Keeping this in mind, there are three strategies that India can simultaneously follow to better secure its interests in the UN.

First, given that the P5 are likely to block any efforts at expanding the

permanent membership of the UNSC in the near future, India might devote considerably greater resources than at present to wooing the middle and smaller powers in the UN to increase the clout of the general assembly relative to the council, a tactic already evident in India's participation in the L-69 group. If this strategy is successful, the P5 might prefer to defuse the threat of a stronger general assembly by incurring the cost of expanding the permanent membership of the UNSC.

Second, the Ministry of External Affairs (MEA) would benefit from a wider public dialogue on what India's positions should be on key aspects of international issues today, including sovereignty, intervention and the use of force.

Third, India should engage in coalition building with other rising powers that are similarly placed in the international system, such as Brazil, Indonesia, South Africa and Turkey. There is widespread consensus among India's intellectual elites that permanent membership on the UNSC is only a matter of time. Moreover, few believe that India's performance in its most recent term will have any bearing on its future prospects as a permanent member, which will be determined by the trajectory of India's economic growth and military development. By this reasoning, the P5's obduracy dictates that India invest in relationships elsewhere to bolster its international profile sufficiently

that UNSC permanent membership becomes a logical corollary. In the words of a veteran observer of India's role in the world, "The Security Council will not be changed from inside, but from outside". This is almost certainly true but India would still benefit greatly from investing more and more wisely in increasing its influence and footprint within the international system, keeping in mind that for now this is the order within which important matters of international peace and security will be determined in the near future.

Though the Indian desires repeatedly articulated at the highest levels of government remain unfulfilled and seemingly intractable, its ideas and diplomacy, bilateral and multilateral, over the last few decades on the UN Security Council and its reforms including its quest for a permanent seat, highlight a growing, powerful consciousness in India. The Indian decision makers realize that it is now historically placed to become an international rule maker and shaper, as opposed to a meek rule follower in the policy relevant future. It truly marks a rising India's dramatic desire to move to the center from the periphery of global politics.

General Studies Paper- II

Topic: Important International institutions, agencies and fora- their structure, mandate.

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SEVEN SUBJECTIVE QUESTIONS WITH MODEL ANSWERS

Human Trafficking : A Pandemic of the 21st Century

Q1. What do you understand by 'human trafficking'? Discuss legal and constitutional framework to counter human trafficking in India.

Hints:

- ◆ Human trafficking is trading humans mostly for the purpose of bonded labour, forced labour, sexual slavery, commercial sexual exploitation or extraction of organs.
- ◆ The Constitution of India prohibits trafficking in persons and guarantees many of the internationally acknowledged various human rights norms such as the right to life and personal liberty, the right to equality, right to freedom, the right to constitutional remedies.
- ◆ Indian Penal Code addressed it in Section 370 and 370 A. It prohibited trafficking of women and girls and prescribed ruthless punishments for the criminals.
- ◆ Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill, 2018 laid down a stringent punishment of 10 years to life imprisonment for aggravated forms of trafficking, which include buying or selling of persons for the purpose of bonded labour, bearing a child, as well as those where chemical substances or hormones are administered. However, Bill is lapsed due to dissolution of the 16th Lok Sabha.
- ◆ Human-trafficking is one of the worst criminal activities that has spread its infection across the planet. It is one of the wicked acts that has made the lives of millions worse and unnatural. This kind of modern slave trade has washed away the humanity among those who are being involved.

The Menace of Honour Killing is Continued in India

Q2. "There are many rights and laws brought against honour killing but still the practice of honour killing has become wide spreading incident." Discuss.

Hints:

- ◆ Every year around the world an accelerating number of women or person associated with those women are reported killed in the name of "honour". Relatives, usually male, commit acts of violence against wives, sisters, daughters and mothers to reclaim their family honour from real or suspected actions that are perceived to have compromised it.
- ◆ In India honour killings happen in cases of inter-religion or inter -caste marriage. In India, it is a part of the community mentality. Large sections of society share traditional conceptions of family honour and approve of "honour" killings to preserve that honour. Even mothers whose daughters have been killed in the name of honour often condone such violent acts.
- ◆ 'Khap' panchayats are caste or community groups, present largely in rural areas of north India, which at times act as quasi-judicial bodies and pronounce harsh punishments based on age-old customs.
- ◆ The accused knowing that there is rigorous punishment for such a crime still practices it with a mindset that honour of the family is more important than the victim. They are ready to face the consequences of punishment than facing the consequence of bringing dishonour to the family due to lack of deterrence. Education and awareness about the importance of life of every citizen in this world should be promoted.
- ◆ The laws related to these incidents should be circulated and advertised to create deterrence. The people in the rural and urban areas should be educated and the consequences of the heinous crimes should be known creating awareness to them.

UN Arms Trade Treaty : An Understanding

Q3. "Management of the global flow of arms is essential to maintain international peace and security." Discuss it in the context of recent withdrawal of US from the UN Arms Trade Treaty.

Hints:

- ◆ The ATT is a multilateral agreement that contains 28 articles. Its stated objectives are to establish an international standard for regulating the international trade of conventional arms and to prevent and eradicate the illicit trade in conventional arms and their diversion.
 - ◆ According to Amnesty International, more than 500 people die every day from gun violence, 44 percent of all killings globally involve gun violence, and there were over 1 million firearm-related deaths globally between 2012 and 2016. It is for these reasons that the recent announcement to “revoke” the U.S. signature of the ATT is so troubling. The world is in dire need of an effective implementation of the only global legally binding instrument that regulates the international trade in arms.
 - ◆ Withdrawal is being used as a weapon to secure the unilateral interests of the United States and this poses serious challenges to the post-World War II multilateral framework that is based on mutual understanding and negotiations. The complex challenges facing the world today demand greater, rather than reduced, cooperation. No country can single-handedly manage these challenges.
 - ◆ Management of the global flow of arms is essential to maintain international peace and security. The United States, as a permanent member of the UN Security Council, should lead by example in this regard. By withdrawing from the ratification process of the ATT, the United States is also forgoing its privileges under the treaty to hold other nations accountable in respect of their arms trade activities.
 - ◆ The aggressive pursuit of unilateral solutions is weakening the multilateral framework of international relations. The Trump administration needs to re-examine its foreign relations orientation in this regard.
- ◆ It is witnessed that since the beginning of the 21st century, a remarkable improvement has been recorded and the current tendency in the development of air transport safety is positive. For a substantial progress in air transportation safety to be achieved, it is necessary to focus on the most frequently occurring and types of air accidents. It is also important to focus on the phases of flight especially on its beginning (takeoff) and end (landing).
 - ◆ The main causes of aviation accidents include human error and mechanical problems. The regulatory authorities world over have safety protocols for pilots, aircraft maintenance, and manufacturers of aircraft but even with all these safety procedures in place accidents occur. Any misstep in the chain of inspection or overlooked detail can have devastating consequences.
 - ◆ Roughly, 80 percent of all aviation accidents occur shortly before, after, or during takeoff or landing. These accidents are frequently due to human error. Aviation mid-flight accidents are very rare but they do happen and can have disastrous and deadly consequences. The leading causes of mid-air disasters are: Sabotage; Mid-air collisions; and Structural failure.
 - ◆ India is one of the lowest-ranked countries in the world when it comes to air safety. India's air safety oversight is lower than its Asia-Pacific counterparts such as Bangladesh, Maldives, Pakistan, Nepal, Sri Lanka and North Korea. The countries that have fared worse than India are small, lesser-known states like Timor-Leste, Samoa, and Vanuatu. India is one of the 15 countries that have scored below the minimum target rates.

Aircraft Crash : A Big Challenge to Aviation Industry

Q4. Airline industry has witnessed the remarkable improvement in the overall development as well as in air transport safety. But for a substantial progress in air transportation safety to be achieved, it is necessary to focus on the most frequently occurring and types of air accidents. Discuss.

Hints:

- ◆ 2019 saw some major aviation failure where aircraft crashed or faced technical glitches. Recently, in this addition were two Boeing- 737 crashes in the Java Sea

near Indonesia and Ethiopia and Russian passenger plane crashed killing at least 41 people after aircraft caught fire while making an emergency landing at airport.

- ◆ It is witnessed that since the beginning of the 21st century, a remarkable improvement has been recorded and the current tendency in the development of air transport safety is positive. For a substantial progress in air transportation safety to be achieved, it is necessary to focus on the most frequently occurring and types of air accidents. It is also important to focus on the phases of flight especially on its beginning (takeoff) and end (landing).
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Internet of Things : Communication among Machines

Q5. What do you understand by Internet of Things (IoT)? Discuss its application in day to day life as well as challenges in adoption of this technology.

Hints:

- ◆ Internet of things (IoT) is an integrated system in which devices are connected in a network of information in such a way that they can communicate with each other without any human intervention. It actually is the inter-networking of physical devices, vehicles (also referred to as "connected devices" and "smart devices"), buildings, and other items embedded with

electronics, software, sensors, actuators, and network connectivity which enable these objects to collect and exchange data.

- ◆ Applications of IoT are normal life, agriculture, business and work, healthcare, society in general, smart environment, building smart cities, etc.
- ◆ Disadvantages of IoT are the breach of privacy, over-reliance on technology, loss of jobs, lesser employment of menial staff, complexity, technology takes control of life, etc.
- ◆ The IoT value chain in India is also disconnected and fragmented. There is a lack of component players, which is a key hindrance for design, testing and development of IoT products in India.
- ◆ If we are to deliver the benefits which IoT promises – from more equitable sharing of healthcare services to connected homes (with permanently stocked fridges); to self-optimizing production lines and super-productive farms etc.; there is an inherent need to educate the population on everything IoT comprises and what they can expect in their futures.

Biodiversity and Ecosystem Services : Declining at Unprecedented Rate

Q6. “The advancing global biodiversity crisis poses serious threats to human health, prosperity, security and even to the future of modern society.” Discuss.

Hints:

- ◆ According to the Report, more than one million species of plants and animals are at risk of extinction - many of which are predicted to be pushed into extinction within just a few decades - thanks to decades of rampant poisoning, looting, vandalism and wholesale destruction of the planet's forests, oceans, soils, watersheds, and air.
- ◆ The biodiversity crisis also means we're potentially setting ourselves up for a food crisis. Increasingly, the world's diet is homogeneous. Fewer and fewer varieties and breeds of plants and animals are being cultivated, raised, traded and maintained around the world. If a disease were to wipe them out, we couldn't necessarily turn to nature to find new sources of food.
- ◆ The advancing global biodiversity crisis poses serious threats to human health, prosperity, security and even to the future of modern society; indeed, these threats are at least perilous as climate change.
- ◆ The global assessment serves as an urgent clarion call to politicians, corporate leaders and other decision-

makers: we have not met our goals for biodiversity conservation and sustainable development, and as a result, we are courting disaster.

UN Security Council Reforms Still Awaited

Q7. “The world is changing, but not the United Nations Security Council (UNSC).” Discuss the need for expansion of permanent membership in UNSC in present geopolitical context.

Hints:

- ◆ The world is changing, but not the United Nations Security Council (UNSC). Today the geo-political and economic scenario of world is quite different from the situation of 1945 when the UNSC was established by 51 countries 70 years ago.
- ◆ Presently there are 10 non-permanent and 5 permanent members in the UNSC. These are not representing the world in a balanced manner, therefore, it is the need of the present day to accommodate various regions e.g. African, Asia Pacific, Latin America etc. in the UNSC.
- ◆ The power of veto is frequently cited as a major problem as the P5 members often influence the resolutions making those countries to suffer, which rather need a platform to grow. In this context, the veto must be abolished and by that time the use of veto should be limited in case of vital national security.
- ◆ India's strategy with regard to UNSC expansion has followed two parallel tracks. The first focuses on a narrow major-power claim, which emphasizes India's capabilities and contributions to the UNSC as the basis for permanent membership. The second approach focuses on the problem of representation in the UNSC and makes the case for expanding both permanent and non-permanent categories of membership with a view to ensuring that the world's foremost organization for international peace and security reflects the dramatically altered distribution of power since 1945.
- ◆ The road for the reforms is not easy. Three powerful members of the UNSC namely Russia, China, and the U.S. are opposed to any major restructuring of the Council. Though Russia and the U.S. have said they would support India's UNSC bid, however, when it comes to proceedings at the UN their positions represent a far cry from the promises they make at bilateral meetings.

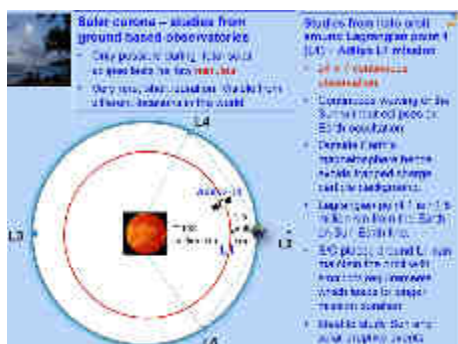
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SEVEN IMPORTANT NEWS

1. Aditya - L1 Mission

According to the Indian Space Research Organisation, India's first mission to study the sun, Aditya-L1, will be launched in the first half of next year. It is designed to study the solar corona (outer layers of the Sun) which is quite similar to NASA's Parker Solar Probe.

The Aditya-1 mission was conceived as a 400kg class satellite carrying one payload, the Visible Emission Line Coronagraph (VELC). A satellite will be placed in the halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system has the major advantage of continuously viewing the Sun without any occultation/ eclipses. Therefore, the Aditya-1 mission has now been revised to "Aditya-L1 mission" and will be inserted in a halo orbit around the L1, which is 1.5 million km from the Earth. The satellite carries additional six payloads with enhanced science scope and objectives.



Payloads

Visible Emission Line Coronagraph (VELC) to study the diagnostic parameters of solar corona and dynamics and origin of Coronal Mass Ejections and magnetic field measurement of solar corona down to tens of Gauss.

Solar Ultraviolet Imaging Telescope (SUIT) to image the spatially resolved Solar Photosphere and Chromosphere in near Ultraviolet (200-400 nm) and measure solar irradiance variations.

Aditya Solar wind Particle Experiment (ASPEX) to study the variation of solar wind properties as well as its distribution and spectral characteristics.

Plasma Analyser Package for Aditya (PAPA) to understand the composition of solar wind and its energy distribution.

Solar Low Energy X-ray Spectrometer (SoLEXS) to monitor the X-ray flares for studying the heating mechanism of the solar corona.

High Energy L1 Orbiting X-ray Spectrometer (HEL1OS) to observe the dynamic events in the solar corona and provide an estimate of the energy used to accelerate the particles during the eruptive events.

Magnetometer to measure the magnitude and nature of the Interplanetary Magnetic Field. ■

2. Genetic Study on people of Lakshadweep Islands

Scientists have done first ever genetic studies done on the people of the archipelago by a team of CSIR-Centre for Cellular and Molecular Biology (CCMB).

Key Highlights

A majority of human ancestry in Lakshadweep is largely derived from South Asia with minor influences from East and West Eurasia. And, there was no evidence of early human migration through the Lakshadweep islands. Scientists have studied the

major islands of Agatti, Andorth, Bitra, Chetlat, Kadmat, Kalpeni, Kiltan and Minicoy of Lakshadweep and demonstrated a close genetic link of Lakshadweep islanders with people from Maldives, Sri Lanka and India.

Scientists have found a strong founder effect for both paternal and maternal lineages. The maternal ancestry was closer to South Indian populations, whereas the paternal ancestry was overwhelmed with the haplogroups, more common in the Maldives and North of India.

About Lakshadweep

Lakshadweep is an archipelago of 36 islands, scattered over approximately 78,000 square km of the Arabian Sea. The islands were known to sailors since ancient times and historical documents say that the spread of Buddhism to these islands happened during 6th century B.C., Islam in 661 A.D. by Arabians. Cholas ruled the islands in 11th century, Portuguese in 16th century, Ali Rajahs in 17th and Tipu Sultan in 18th before the British Raj of 19th century. ■

3. Elimination of Industrially Produced Trans Fats by 2023: WHO

The World Health Organization (WHO) has welcomed the commitment by the International Food and Beverage Alliance (IFBA) to align with the WHO target to eliminate industrially produced trans fat from the global food supply by 2023. IFBA ensured that the amount of industrial trans fat (iTFA) in their products does not exceed 2 g of iTFA per 100 g fat/oil globally by 2023. This is in line with the WHO's objective and recommendations of its 'REPLACE' action package, which was developed and launched in 2018. Trans fat, also called the worst form of fat in food, responsible for over 5,00,000 deaths

globally from coronary heart disease each year.

What is Trans Fat?

Trans fat, or trans-fatty acids, are unsaturated fatty acids that come from either natural or industrial sources. Naturally-occurring trans fat come from ruminants (cows and sheep). Industrially produced trans fat are formed in an industrial process that adds hydrogen to vegetable oil converting the liquid into a solid, resulting in "partially hydrogenated" oil (PHO). Trans fat increases LDL ("bad") cholesterol levels while lowering HDL ("good") cholesterol levels. Trans fat has no known health benefits.

Concerns

Approximately 540,000 deaths each year can be attributed to intake of industrially produced trans-fatty acids. High trans fat intake increases the risk of death from any cause by 34%, coronary heart disease deaths by 28% and coronary heart disease by 21%.

What is REPLACE?

The REPLACE action package provides a six-step action package for the elimination of industrially-produced trans fat from the global food supply. The six areas of action include:

- ◆ 'R'eview dietary sources of industrially-produced trans fat and the landscape for required policy change.
- ◆ 'P'romote the replacement of industrially-produced trans fat with healthier fats and oils.
- ◆ 'L'egislate or enact regulatory actions to eliminate industrially-produced trans fat.
- ◆ 'A'ssess and monitor trans fat content in the food supply and changes in trans fat consumption in the population.
- ◆ 'C'reate awareness of the negative health impact of trans fat among policy-makers, producers, suppliers, and the public.
- ◆ 'E'nforce compliance with policies and regulations. ■



4. India has Extended ban on LTTE for Five More Years

The government of India has extended the ban on the Liberation Tigers of Tamil Eelam (LTTE) for violent and disruptive activities that are prejudicial to the integrity and sovereignty of the country. The Ministry of Home Affairs (MHA) has renewed its 2014 notification to declare the LTTE as an "unlawful association" under the Unlawful Activities (Prevention) Act, 1967 for another five years. Previously, India had banned the LTTE after the assassination of Gandhi in 1991. The ban on the group was last extended for five years in 2014.

Why?

According to the MHA, the LTTE continues to adopt a strong anti-India posture as also continues to pose a grave threat to the security of Indian nationals.

The diaspora continue to spread through articles in the Internet portals, anti-India feeling amongst the Sri Lankan Tamils by holding the government of India responsible for the defeat of the LTTE and such propaganda through Internet, which remains continued, is likely to impact Very Very Important Persons (VVIP) security adversely in India.

Even after its military defeat in May 2009 in Sri Lanka, the LTTE had

not abandoned the concept of 'Eelam' (separate land for Tamils) and had been clandestinely working towards the cause by undertaking fund-raising and propaganda activities. The remnant LTTE leaders or cadres have also initiated efforts to regroup the scattered activists and resurrect the outfit locally and internationally.

About LTTE

It's objective for a separate homeland (Tamil Eelam) for all Tamils threatens the sovereignty and territorial integrity of India and amounts to cession and secession of a part of the territory of India from the Union and thus falls within the ambit of unlawful activities. ■

5. Thrissur Pooram Temple Festival

The 2019 edition of the Thrissur Pooram, an extravagant temple festival in Kerala came to an end with the ceremonial 'Upacharam Cholli Piriya' in front of Sree Vadakkumnathan during which the elephants carrying the idols of the deities bid goodbye to each other by raising their trunks.

Key Highlights

The central attraction of the festival was the Elanjithara Melam, considered the world's largest live orchestra of percussionists known for its technical brilliance. In the evening, 30 caparisoned elephants, with 15 on either side, stood facing each other in a wonderful ceremony called the 'Kudamattam'.

The Thrissur Pooram, celebrated in the Malayalam month Of Medom (April-May) is a grand assembly of Gods and Goddesses in and around Thrissur. These Gods and Goddesses make their visit to the Vadakkumnathan Temple

premises on caparisoned elephants accompanied by grand ensembles of Chenda melam and pancha vadyam.

Thrissur Pooram is billed as the 'mother of all festivals' in Kerala and its history dates back to the late 18th century when it was started by Sakthan Thampuran, the 'Maharaja' of the erstwhile Kochi state. It is not a mere temple festival in its strict sense but at the same time it is the festival of festivals of Kerala.

The festival was synonymous with elephants and the ban on popular tusker Thechikkottukavu Ramachandran had created such a furore that the Collector had to give permission to parade the animal for an hour. Around 90 elephants participated in various functions of



pooram. One could find elephants on every street. The ten participants of the Pooram are the Thiruvambady Bhagavathi Paramekkavu Bhagavathi, Nethilakkavu Bhagavathi, Karamukku Bhagavathi, Ayyanthole Bhagavathi, Laloore Bhagavathi, Choorakkattukavu Bhagavathi, Chembukkavu Bhagavathi, Panamukkumpally Sastha, Kanimangalam Sastha. ■

6. Indian Air Force got First Apache Attack Helicopter

The first Apache Guardian attack helicopter was formally handed over to the Indian Air Force (IAF) at a production facility of Boeing in Arizona. The IAF had signed a contract with the US government and Boeing in September 2015 for 22 Apache helicopters. The first of these helicopters is scheduled to be shipped to India in July this year and are likely to be inducted in the IAF at a special ceremony in Pathankot air base.

Significance of the Helicopter

- ◆ It has been customised to suit the IAF's future requirements and would have significant capability in mountainous terrain.
- ◆ The introduction of Apache will lead to the modernisation of the

IAF's attack helicopter fleet which at present is equipped with Russian origin MI-35 helicopters.

- ◆ It has the capability to carry out precision attacks at standoff ranges and operate in hostile airspace with threats from ground. The ability of these helicopters to transmit and receive battlefield picture, to and from the weapon systems through data networking, makes it a lethal acquisition.
- ◆ It is the highly effective platform for destruction of tanks and armoured vehicles it made sense for the Army to raise Apache squadrons.

About Helicopter

- ◆ The AH-64E (I) Apache Guardian is an advanced all-weather attack

helicopter that can engage both air and ground targets with relative stealth using low-altitude obstacles like trees and hills as cover.

- ◆ The Apache comes with Hellfire precision strike missiles, 70 mm rockets and a 30mm chin-mounted automatic cannon which is cued by the pilot's helmet system. It will also come with Stinger missiles and Longbow fire control radar system. The latter gives the helicopter the capability to make precision attacks from a distance.
- ◆ The helicopter is powered by two high - performance turboshaft engines with a maximum cruise speed of 284 km per hour or 152 knots. ■

7. Iran has Announced Partial Withdrawal from 2015 Nuclear Deal

Iran has announced partial withdrawal from the landmark 2015 nuclear deal titled 'Joint Comprehensive Plan of Action (JCPOA)' signed with the world powers, a year after the United States unilaterally pulled out of the agreement. The partial withdrawal would mean that Iran would stop exporting enriched uranium stocks as stipulated by the 2015 agreement. Tehran warned that the remaining signatories - the UK, France, Germany, China, and Russia -- had 60 days before it would resume high-level enrichment of uranium.

Key Points

The decision came amid heightened tension between Iran and the US in recent weeks after Washington announced that no fresh sanction waivers will be issued for Iranian oil

imports to eight countries, including India.

Over the last year, the U.S. has imposed new sanctions in an attempt to strangle the Iranian economy, leading to heightened tensions.

Following U.S. announcements, Iran would no longer observe the ceilings of 130 MT of heavy water and 300 kg of low enriched uranium, and excess production would be retained within the country.

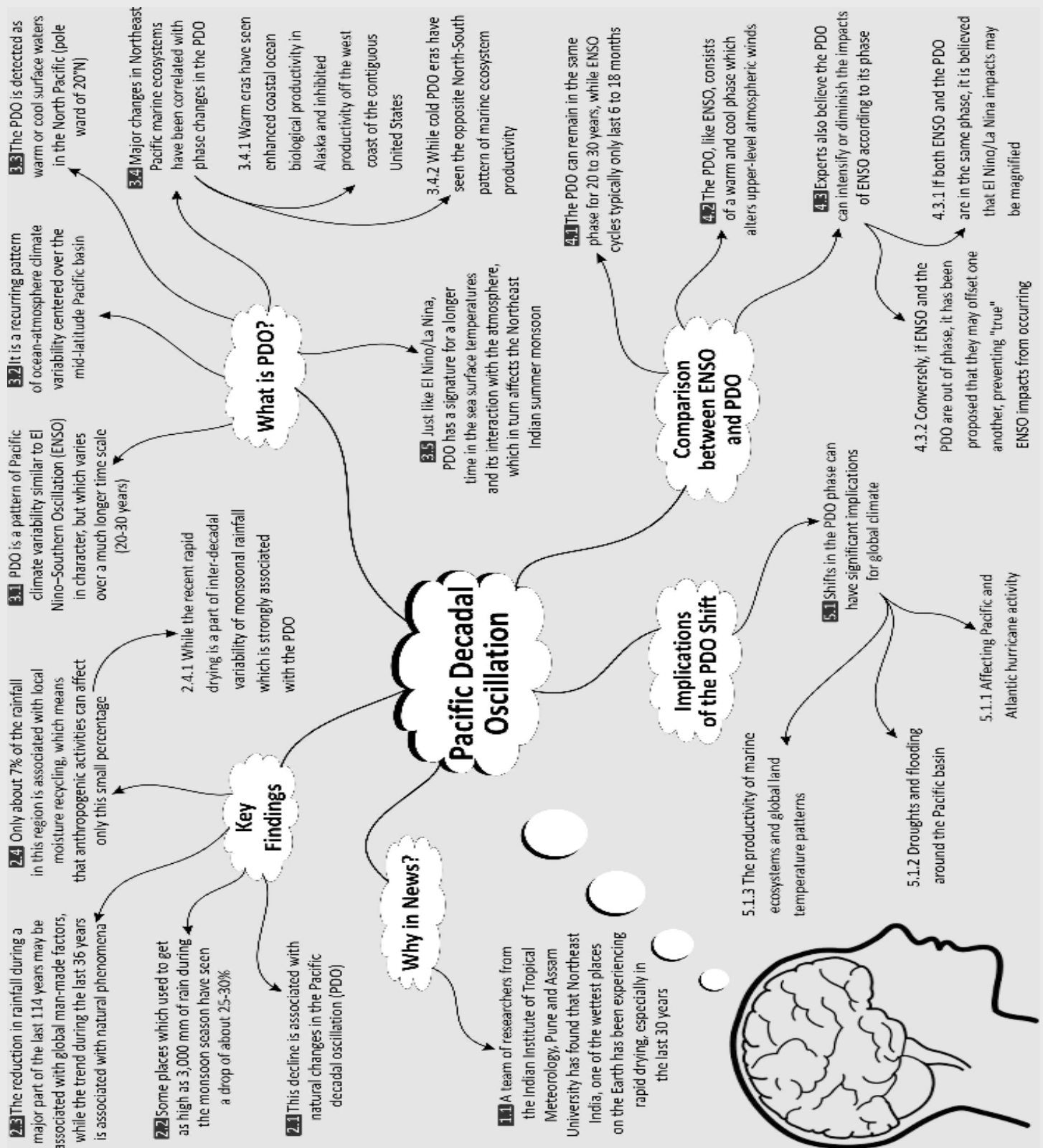
Iran has announced a window of 60 days for other JCPOA members to make good on their commitment to ensure sanctions relief, failing which Iran could undertake uranium enrichment above 3.67% (a restriction under the JCPOA) and resume construction of Arak heavy water reactor (this was mothballed). This would mean the end of the JCPOA.

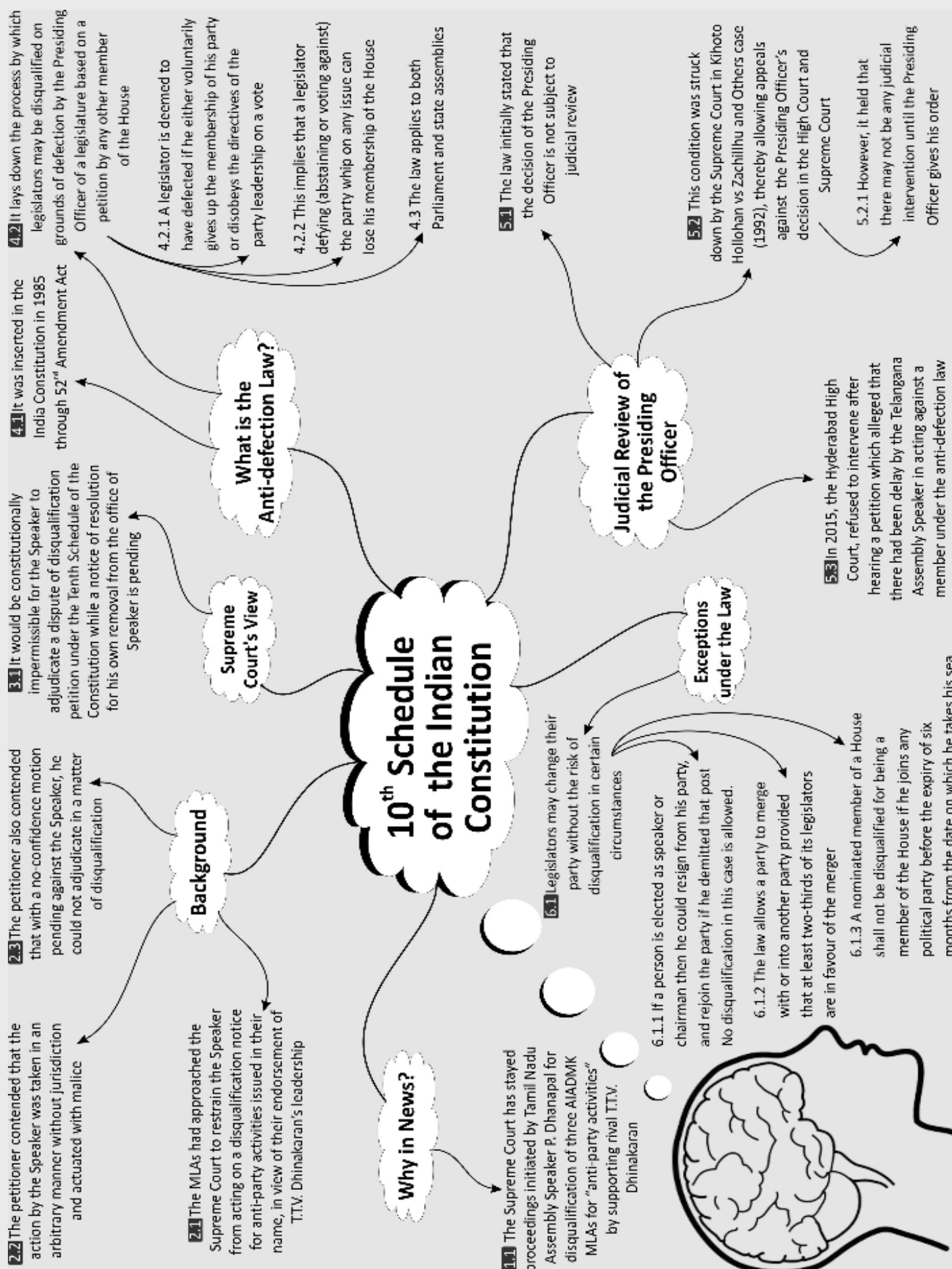
The U.S. responded by announcing additional sanctions on Iran's industrial metal industry, the second largest export item after oil. In addition, a USS Arlington (transporter of amphibious vehicles and aircraft) and a Patriot missile defence battery have also been deployed in the Persian Gulf amid Iran tension.

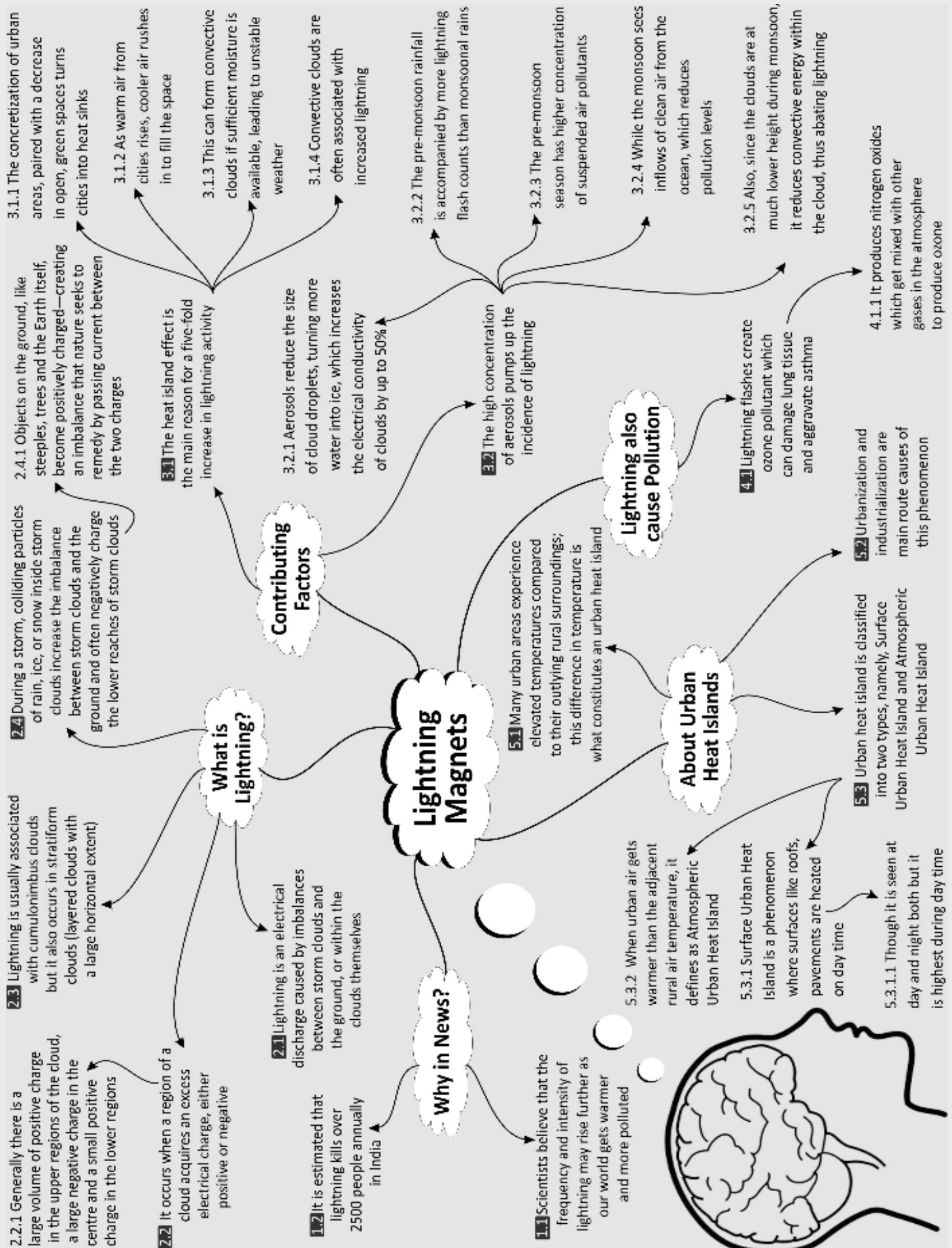
About JCPOA

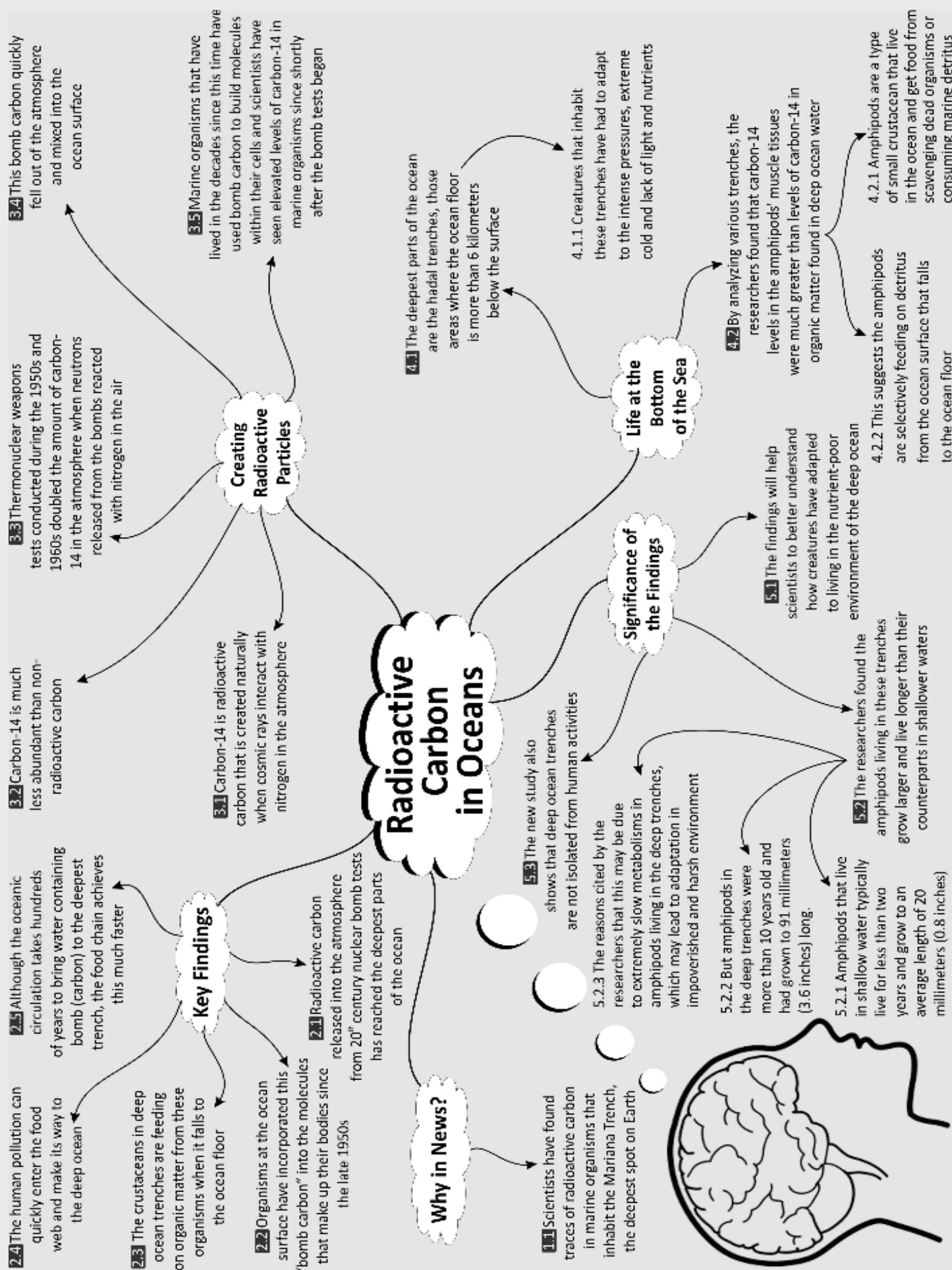
The JCPOA was the result of prolonged negotiations between 2013 and 2015 between Iran and P5+1 (China, France, Germany, Russia, U.K., U.S. and the European Union). It was intended to limit Iran's civilian energy programme - thereby preventing it from developing nuclear weapons at some point in the future - in exchange for relief from sanctions that were crippling the country's economy. ■

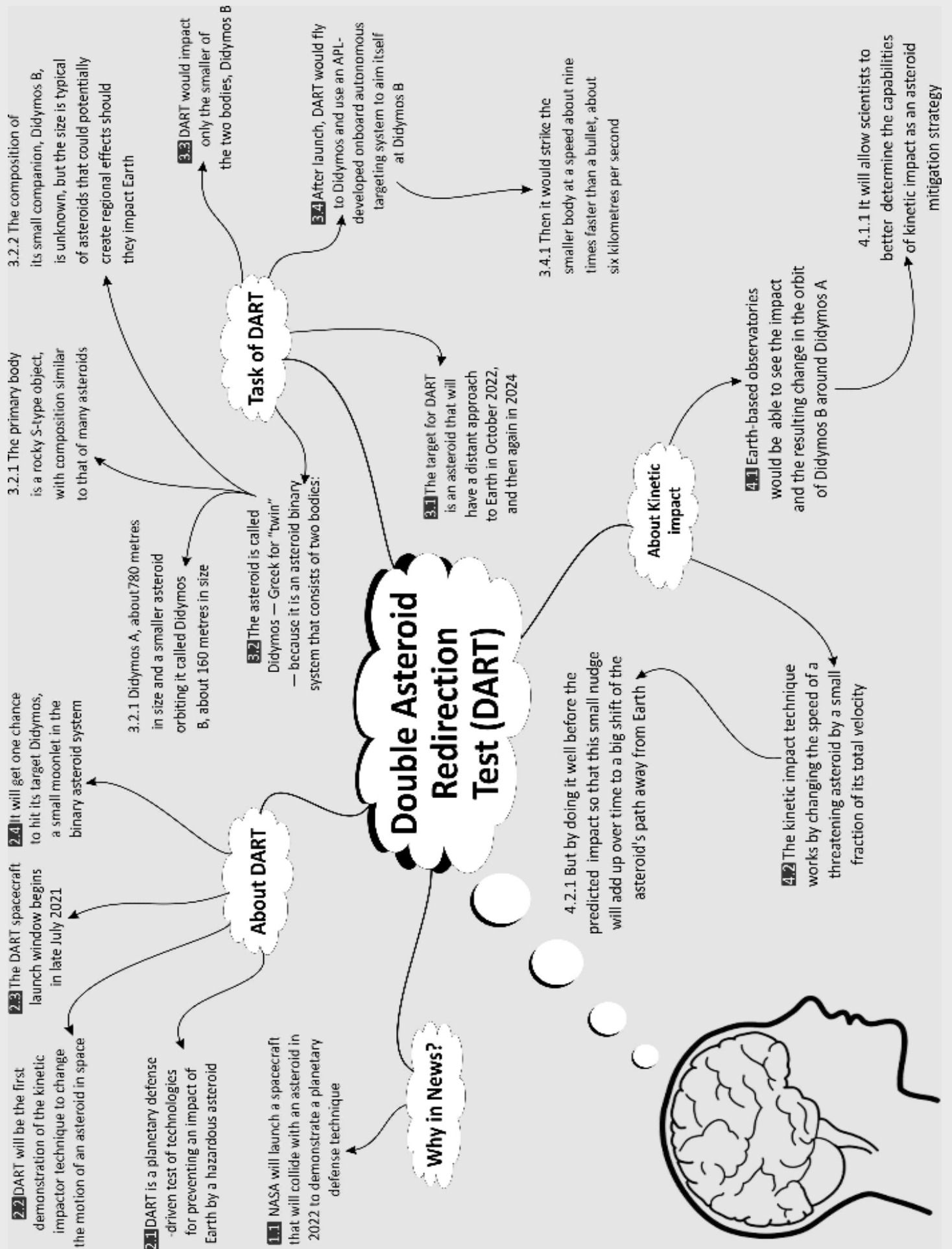
SEVEN BRAIN BOOSTERS

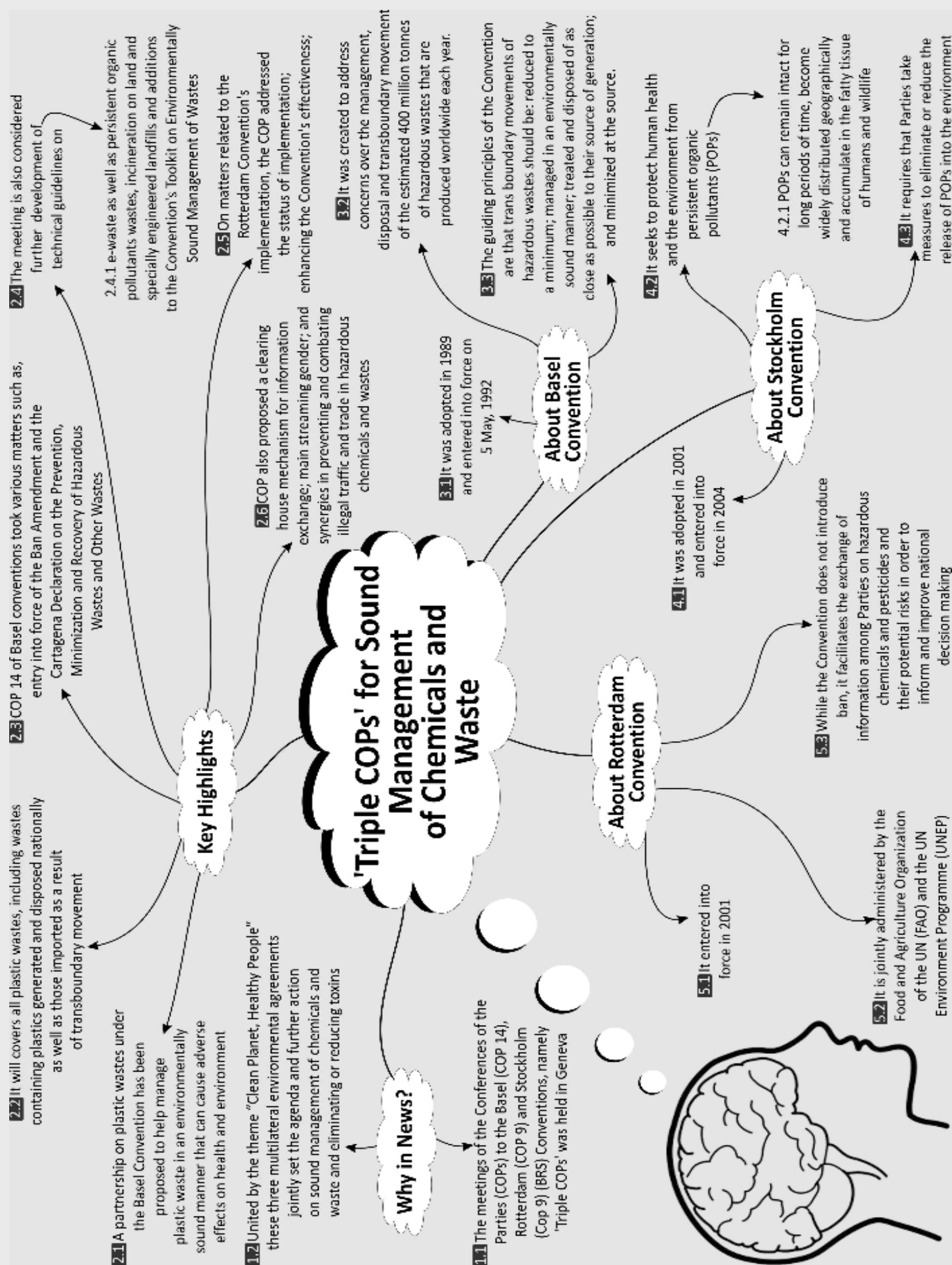


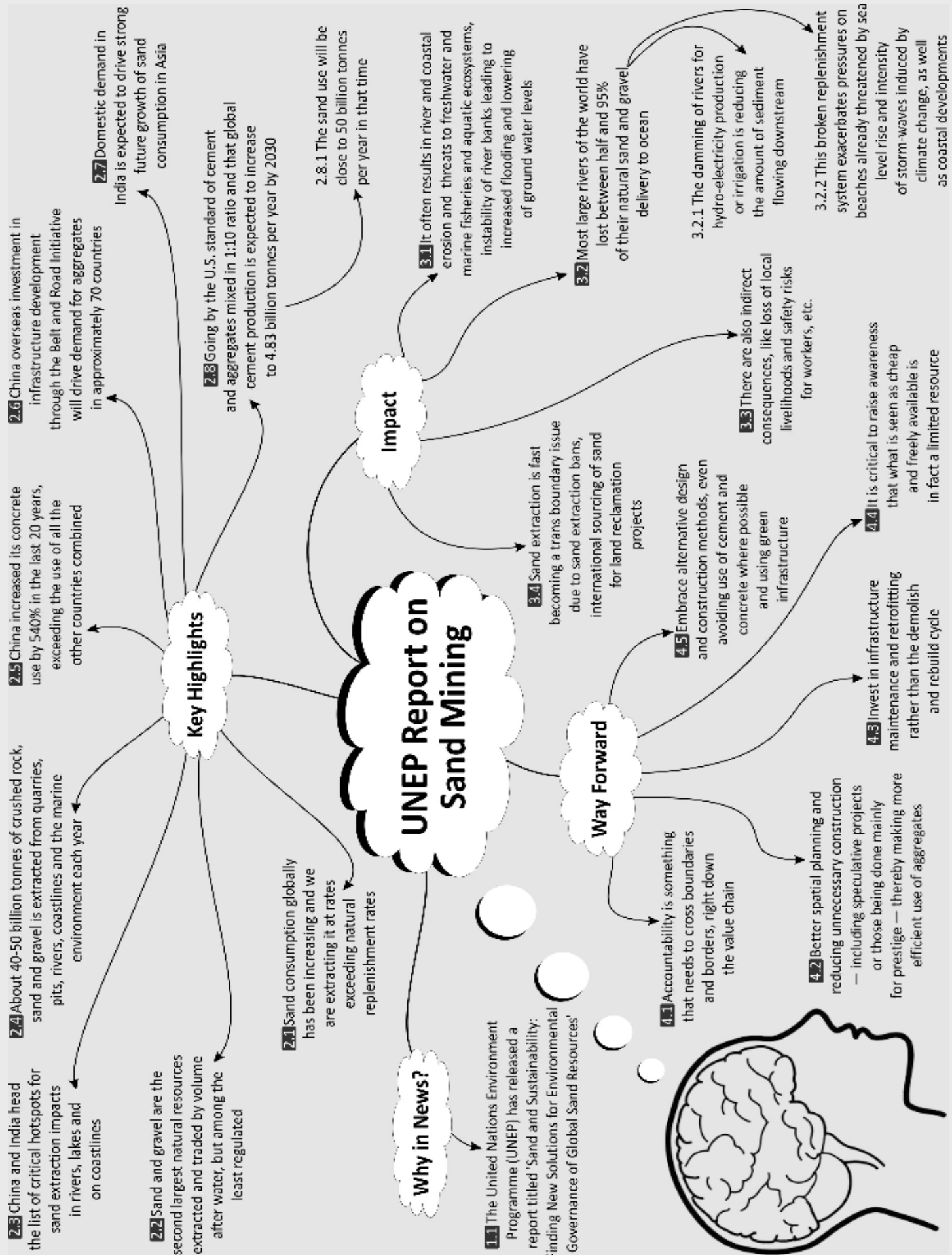












SEVEN MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

Pacific Decadal Oscillation

Q1. Consider the following statements in respect of 'Pacific Decadal Oscillation':

1. It is a recurring pattern of ocean-atmosphere climate variability centered over the mid-latitude Atlantic basin.
2. PDO has a signature for a longer time in the sea surface temperatures and its interaction with the atmosphere, which in turn affects the Northeast Indian summer monsoon.

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 not correct. PDO is a pattern of Pacific climate variability similar to El Nino–Southern Oscillation (ENSO) in character, but which varies over a much longer time scale (20-30 years).

Statement 2 is correct. Just like El Nino/La Nina, PDO has a signature for a longer time in the sea surface temperatures and its interaction with the atmosphere, which in turn affects the Northeast Indian summer monsoon.

10th Schedule of the Constitution

Q2. With reference to the 'Tenth Schedule of the Indian Constitution', consider the following statements:

1. It lays down the process by which legislators may be disqualified on grounds of defection by the Presiding Officer.
2. The decision of the Presiding Officer related to disqualification of legislators is not subject to judicial review.

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: (a)

Explanation: Statement 1 is correct. The anti-defection law was inserted in the Constitution in 1985.

Statement 2 is not correct. The law initially stated that the decision of the Presiding Officer is not subject to judicial review. This condition was struck down by the Supreme Court in 1992, thereby allowing appeals against the Presiding Officer's decision in the High Court and Supreme Court. However, it held that there may not be any judicial intervention until the Presiding Officer gives his order.

Lightning Magnets

Q3. Consider the following statements:

1. Lightning produce nitrogen oxides which get mixed with other gases in the atmosphere to produce ozone.
2. Monsoonal rainfall is accompanied by more lightning flash counts than pre-monsoon rainfall.

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: (a)

Explanation: Statement 1 is correct. Lightning produce nitrogen oxides which get mixed with other gases in the atmosphere to produce ozone. A layer of ozone shields the Earth from harmful ultraviolet rays when present in upper atmosphere. But closer to Earth, it is a harmful pollutant.

Statement 2 is not correct. Research said that pre-monsoon rainfall is accompanied by more lightning flash counts than monsoonal rains. The pre-monsoon season has higher concentration of suspended air pollutants. By comparison, the monsoon sees inflows of clean air from the ocean, which reduces pollution levels.

Radioactive Carbon in Oceans

Q4. Consider the following statements in respect of 'radioactive carbon':

1. Carbon-14 is radioactive carbon that is created naturally when cosmic rays interact with nitrogen in the atmosphere.

2. Thermonuclear weapon testing during 1950s and early 1960s doubled the concentration of radioactive carbon in the atmosphere.

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. Carbon-14 is radioactive carbon that is created naturally when cosmic rays interact with nitrogen in the atmosphere. Thermonuclear weapons tests conducted during the 1950s and 1960s doubled the amount of carbon-14 in the atmosphere when neutrons released from the bombs reacted with nitrogen in the air.

Double Asteroid Redirection Test (DART)

Q5. With reference to the 'Double Asteroid Redirection Test (DART)', consider the following statements:

1. DART is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid.
2. European Space Agency will launch DART spacecraft in late July 2021.

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: (a)

Explanation: Statement 1 is correct. DART is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid 'Didymos'.

Statement 2 is not correct. NASA will launch DART spacecraft in late July 2021 and will collide with an asteroid in 2022 to demonstrate a planetary defense technique.

'Triple COPs' for Sound Management of Chemicals and Waste

Q6. Consider the following statements:

1. The Basel Convention is related to the control of trans boundary movements of hazardous wastes and their disposal.
2. The Rotterdam Convention seeks to protect human health and the environment from persistent organic pollutants (POPs).

3. The Stockholm Convention does not introduce bans, but it facilitates the exchange of information among Parties on hazardous chemicals and pesticides.

Which of the statements are correct?

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

Answer: (a)

Explanation: Statement 1 is correct. The guiding principles of the Basel Convention are that trans boundary movements of hazardous wastes should be reduced to a minimum; managed in an environmentally sound manner; treated and disposed of as close as possible to their source of generation; and minimized at the source.

Statement 2 is not correct. The Stockholm Convention seeks to protect human health and the environment from persistent organic pollutants (POPs). It requires that Parties take measures to eliminate or reduce the release of POPs into the environment.

Statement 3 is not correct. The Rotterdam Convention does not introduce bans, it facilitates the exchange of information among Parties on hazardous chemicals and pesticides and their potential risks in order to inform and improve national decision making.

UNEP Report on Sand Mining

Q7. Consider the following statements in respect of UNEP report on sand mining:

1. China and India head the list of critical hotspots for sand extraction impacts in rivers, lakes and on coastlines.
2. Sand and gravel are the second largest natural resources extracted and traded by volume after water.

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. According to the report, sand and gravel are the second largest natural resources extracted and traded by volume after water, but among the least regulated. China and India head the list of critical hotspots for sand extraction impacts in rivers, lakes and on coastlines.

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SEVEN IMPORTANT FACTS FOR PRELIMS

1. Which Indian judge has been appointed as a member of the Commonwealth Secretariat Arbitral Tribunal, London?

- *K S Radhakrishnan*

2. Which nation is facing US sanctions on iron, steel, aluminium and copper sectors recently?

- *Iran*

3. Which nation has been re-elected as observer to the 'Arctic Council'?

- *India*

4. Which Indian figure has been appointed as 'SDG Advocate' along with 17 other global public figures to drive action and solidify global political will for the ambitious Sustainable Development Goals?

- *Dia Mirza*

5. Who has been elected new President of Panama?

- *Laurentino Cortizo*

6. Which country will host the 45th G7 Summit in 2019?

- *France*

7. Which day is celebrated every year as 'International Red Cross Day'?

- *8th May*



SEVEN IMPORTANT HIGHLIGHTS FROM PIB

1. WTO Ministerial Meeting of Developing Countries

The WTO Ministerial Meeting of Developing Countries was held in New Delhi. This meeting was held at a time when trade tensions show no signs of abating and protectionist tendencies are on the rise which makes it very essential to collectively debate and discuss the way forward in a multilateral framework.

It is an initiative by India to facilitate a free and frank exchange of views on all issues of common interest, particularly of the Developing Countries and will explore how to collectively address the challenges emerging from suggestions on World Trade Organisation (WTO) reform. The reform process will mitigate the current crisis at WTO and talk about destroying the existing system is not the correct way and may not have the desired outcome.

Key Highlights

The dispute settlement crisis is a deep crisis and all countries have to look for a resolution. Business as usual approach is not an option anymore and all members should work for a solution. The plurilaterals should not be seen as a division between developed and developing countries as

they contain members from both sides. The special and differential treatment mechanism must be innovative in order to address the impasse. The ideal way is to have a bench mark because the differentiation is already happening and is essential for small developing countries.

The Multilateral Trading System is the collective responsibility of all countries that have a stake in it. It is the duty of countries to successfully address conflicting interests, motives and ideologies, in order to preserve and strengthen this valuable institution. The principles of non-discrimination, predictability, transparency, the tradition of decision-making by consensus and, most importantly, the commitment to development, underlying the multilateral trading system, are too valuable to lose.

The approach of this meeting is to re-energize and strengthen multilateralism and put in place a more inclusive decision - making process. Towards this end, it is essential that the collective view of as many developing countries as possible is formally articulated in submissions on WTO reforms.

2. India- Vietnam Relations

Recently, Vice-President of India M. Venkaiah Naidu has paid his official four-day visit to the Vietnam.

Key Highlights

Both India and Vietnam were fully committed to an open, transparent, inclusive and rules-based regional architecture based on freedom of navigation and over flight, unimpeded economic activities and peaceful settlement of disputes in accordance with the international law.

India is providing extensive training support to Vietnamese Armed Forces and the implementation of the Line of Credit of US Dollars 100 million for building high speed patrol vessels for Vietnamese Border Guards was progressing satisfactorily. Vietnam is an important trade partner of India and their bilateral trade stood at nearly

USD 14 billion last year having nearly doubled from USD 7.8 billion three years ago.

Both sides agreed to further strengthen cooperation in defence and security, peaceful uses of atomic energy and outer space, oil and gas, renewable energy, agriculture and innovation-based sectors.

Both sides reiterated the importance of building a peaceful and prosperous Indo-Pacific region on the basis of respect for national sovereignty and international law, and expressed full commitment to an open, transparent, inclusive and rules-based regional architecture based on freedom of navigation and overflight, unimpeded economic activities and peaceful settlement of disputes in accordance with international law.

3. IN Ships Kolkata and Shakti carried out Group Sail

IN Ships Kolkata and Shakti carried out Group Sail with naval ships of Japan, Philippines and the United States of America in the South China Sea. The Group Sail was aimed to deepen the existing partnership and foster mutual understanding among participating navies.

Key Highlights

The six-day long Group Sail had participation of six combatants from the four participating countries and included the Guided Missile Destroyer INS Kolkata and Fleet Support Ship INS Shakti of India, Helicopter Carrier JMSDF Izumo and Guided Missile Destroyer JMSDF Murasame of Japan; Frigate BRP Andres Bonifacio of Philippines and Arleigh Burke Class Destroyer USS Williams P Lawrence of USA. The ships undertook various exercises en route which included formation manoeuvring, underway replenishment

runs, cross-deck flying and exchange of Sea Riders.

The combined show of naval might comes at a time of heightened tensions in the trade war between China and the US - the two world powers locked in a tussle for the commercial control of South China Sea, which serves as a passage for annual trade worth USD 3.5 trillion.

South China Sea

China claims almost all of the strategic South China Sea with Brunei, Indonesia, Malaysia, the Philippines, Taiwan and Vietnam pushing competing claims to parts of the resource-rich maritime region. However, the United States, Japan and India do not have any territorial claims there. Islands in the South China Sea - is an area which accounts for 12 per cent of global fishing and through which 30 per cent of the world's trade passes.

4. India CEO Forum on Climate Change

India CEO Forum on Climate Change was organized by Ministry of Environment, Forest and Climate Change (MoEFCC). It is the pioneering initiative of the government, inviting industry representatives, exchanged views on climate change issues and discussed opportunities to collaborate in regard to fulfilling India's national as well as international climate change commitments.

Key Highlights

The forum was being conducted to create a mechanism for the government and businesses to formally talk about climate change issues and develop a common voice at global forums so that there is no disconnect between the stand of the government and that of the industries. Businesses are recognised as crucial to meeting global climate change goals and forum on Climate Change focused on driving transition to a low-carbon economy.

The Forum consisted of high-level discussions across several sessions covering topics from India's Nationally Determined Contributions to discussions on the 2019 United Nations Secretary General's Climate Summit, to be held on 23rd September, 2019 in New York, in which India along with Sweden will be leading the discussions on Industry Transition.

Significance

This forum will help the government move from a language-based narrative on climate change to an action-based narrative and highlighted the important role that businesses play in dealing with global warming issues and a platform like this will help share best practices and facilitate cross-learning.

5. Fourth Scorpene Class Submarine - Vela

Indian Navy has launched fourth stealth scorpene class submarine Vela of Project 75, with an aim to boost Indian capability to defend and secure the strategic sea lanes.

Key Highlights

The Vela submarine will undergo a number of tests conducted by the Navy before it is commissioned in the defence fleet.

INS Vela was first commissioned on August 31, 1973 in the Indian Naval service and continued to serve for 37

years. It was the oldest submarine of the country when it was decommissioned on June 25, 2010. The new scorpene class submarine Vela, equipped with modern machinery and technology to guard the seas.

The Scorpene class of submarines can undertake multifarious tasks typically undertaken by any modern submarine which include anti-surface as well as anti-submarine warfare.

Before Vela, Mazagon Dock Shipbuilders Limited launched Kalvari, Khanderi, Karanj submarines. While

Kalvari has been commissioned, the others are at various levels of trials and tests.

Project 75

The P75I project is part of a 30-year submarine building plan that ends in 2030. As part of this plan, India was to build 24 submarines — 18 conventional submarines

and six nuclear-powered submarines (SSNs). Of the 14 conventional submarines India currently possesses, including the Scorpene, only half are operational at any given point of time. India also has two nuclear-powered submarines — INS Arihant (SSBN, a ballistic missile submarine) and INS Chakra (SSN, a nuclear-powered one) leased from Russia.

6. 20th Conference of Regional Heads of Customs Administration

The Central Board of Indirect Taxes and Customs (CBIC) had organised a Conference of the Regional Heads of Customs Administration of Asia Pacific Region of the World Customs Organisation (WCO) in Kochi. India hosted this Conference in its capacity as Vice-Chair of the Asia Pacific Region of WCO which it assumed on 1st July, 2018 for a two-year period.

Key Highlights

The Conference took stock of the progress made in carrying forward the programmes and initiatives of WCO to promote, facilitate and secure cross-border trade in the Region and the capacity building and technical assistance required by Member Administrations to achieve these goals.

Customs delegations from more than twenty countries of the Asia Pacific Region participated in the Conference along with senior officials of the WCO and its Regional Bodies, the Regional Office for Capacity Building (ROCB) and Regional Intelligence Liaison Office (RILO).

In addition to the discussions on the strategic priorities of the Asia Pacific Region, the Conference also deliberated on the work programs of the Vice-Chair, ROCB & RILO, security related issues, trade facilitation, e-commerce, performance measurement, trusted trader programmes and emerging technological and logistical challenges in the fields of trade facilitation and Customs Administrations.

About WCO

It was established in 1952 as the Customs Co-operation Council (CCC) is an independent intergovernmental body whose mission is to enhance the effectiveness and efficiency of Customs administrations.

Today, the WCO represents 183 Customs administrations across the globe that collectively process approximately 98% of world trade. As the global centre of Customs expertise, the WCO is the only international organization with competence in Customs matters and can rightly call itself the voice of the international Customs community.

7. GDP Estimation

The government has said enterprises excluded from the services sector survey are involved in some form of economic activity, making them eligible for inclusion in estimation of the gross domestic product (GDP).

There is a raging debate over the veracity of GDP estimates since a report on services sector enterprises by the National Sample Survey Office (NSSO) said 38.7% of companies in the MCA-21 database used in the study were either missing or wrongly classified. The MCA data base on the private corporate sector is a valuable addition to the data sources available for estimation of GDP and its use provides a more correct measure of economic activity in the country. The MCA-21 database is used for estimating the GDP in the new series with 2011-12 as base. It faced criticism ever since it was released in 2015 because of a wide divergence in growth from earlier estimates.

According to the NSSO report, 35,456 entities were categorised as out-of-survey enterprises. The government

said 'out of survey' does not mean that these enterprises do not exist in the economy, as was interpreted by some.

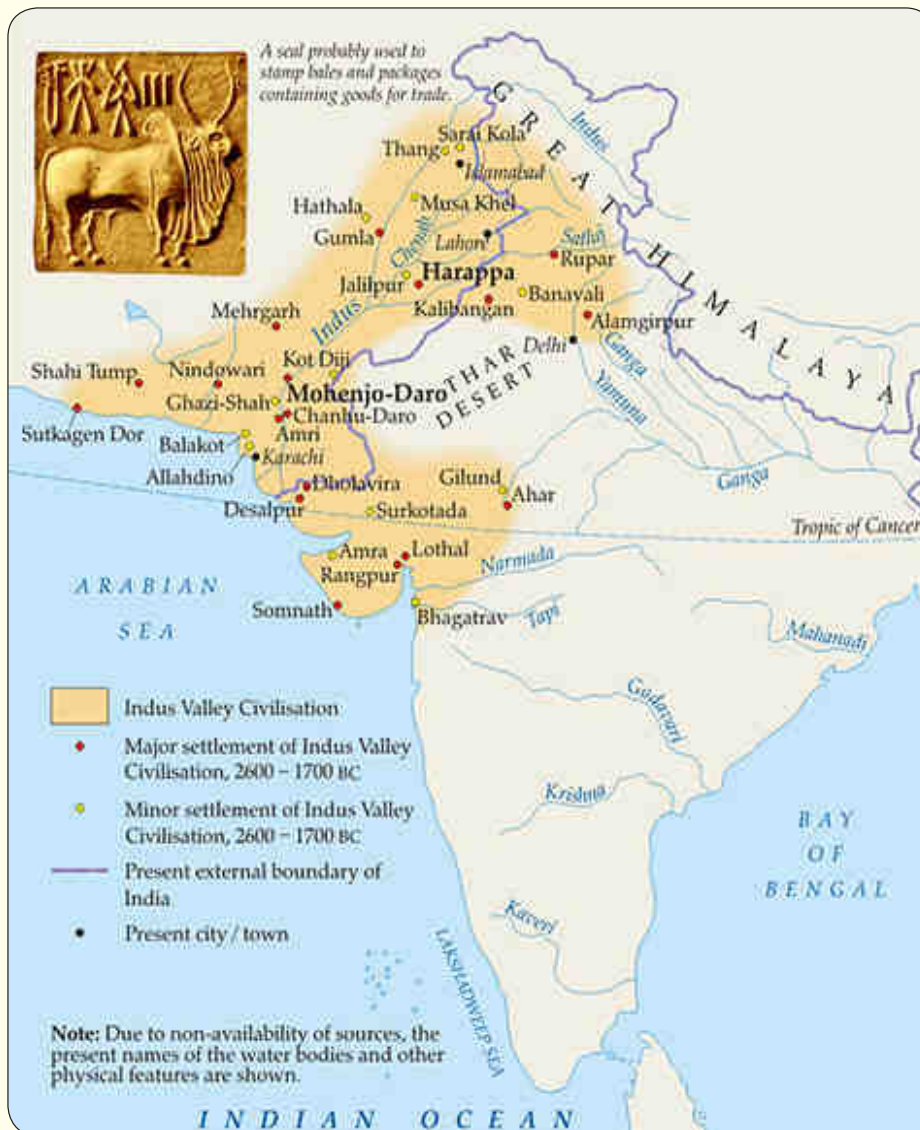
Of the 38.7 percent out-of-survey enterprises in the NSSO report, out-of-coverage enterprises comprise 21.4 percent. The out-of-coverage enterprises are simply those enterprises that are not engaged in activities intended for inclusion in the service sector survey. However, these enterprises are engaged in some economic activity, possibly in the manufacturing sector for instance. As a result, they cannot be classified as out-of-coverage enterprises for the purposes of estimating the GDP of the country. In other words, the GDP estimates based on the aforesaid out-of-coverage enterprises are very much a part of overall GDP of the country.

Crucially, we must note that the share of total paid up capital of the private corporate sector that is accounted by non-responsive enterprises affects GDP estimates using the MCA database; not the number of non-responsive enterprises in the private corporate sector.



SEVEN IMPORTANT CONCEPTS THROUGH GRAPHICS

1. Indus Valley Civilisation



Key Facts

- Indus Valley Civilisation is a 'Bronze Age Civilisation'. Being situated on the Indus river basin, it is called as Indus Valley Civilisation'. Also, it has come to be called the 'Harappan Civilisation' after the name of its first discovered site.
- Of all the four civilisations, viz. Mesopotamian, Chinese, Egyptian and Indus, Indus Valley Civilisation is largest in terms of its area.
- Harappa, Mohenjo-Daro and other Indus Valley cities had a level of architectural planning that was unparalleled in the ancient world. For protection from seasonal floods and polluted waters, the settlements were built on giant platforms and elevated grounds. The network of streets in the cities formed an orderly grid, being laid out in straight lines cutting each other at right angles.
- The advanced architecture of the Indus Valley people is evident by their impressive dockyards, granaries, warehouses, brick platforms and massive protective walls. The 'Great Bath' at Mohenjo-Daro in Sindh, Pakistan is one of the most famous structures of Harappan Civilisation. It is considered the earliest public water tank in history.
- The important sites are Kalibangan in Rajasthan, Rupar in Punjab, Banawali in Haryana, Lothal, Surkotada and Dholavira, all three in Gujarat.

- The cities of Indus Valley Civilisation had world's first known urban sanitation systems. All houses were equipped with latrines, bathing houses, and sewage drains which emptied into wider public drains and ultimately deposited the fertile sludge on surrounding agricultural fields. Some houses were even equipped with the world's earliest known flush toilets.
- The Indus Valley people pioneered techniques in metallurgy and produced copper, bronze, lead, and tin. One of the most famous artifacts from civilisation is a bronze statuette of a girl in a standing position, famous as the Dancing Girl of Mohenjo-Daro.
- In 2001, archaeologists discovered that Indus Valley people had knowledge of proto-dentistry. In April 2006, the oldest evidence for the drilling of human teeth in vivo (i.e. in a living person) was found in Mehrgarh, an civilisation site in Pakistan. 11 drilled molars from nine adults were discovered there.
- Extent of Indus Valley Civilisation : Northern boundary-Manda (Jammu and Kashmir); Southern Boundary- Daimabad (Maharashtra); Eastern boundary- Alamgirpur (U.P.); and Western boundary – Sutkagendor (Pakistan-Iran border).

2. Bharatvarsha Sixth Century



Key Facts

- By the Sixth century B.C. the use of iron had become widespread in Eastern U.P. and Western Bihar. It facilitated the formation of the large territorial state. Iron weapons helped the warrior classes to play an important role in the life of the people.
- Since North India had no single paramount power, sixth century BC witnessed the emergence of independent states. The 'Mahajanapadas' represented a conglomerate of thousands of villages and a few cities.
- The Buddhist text 'Anguttara Nikaya' which is a portion of 'Sutta – Pitaka' gives the following list of 16 Mahajanapadas in the time of Buddha. These are Kashi, Koshala, Anga, Magadha, Vajji, Malla, Chedi, Vatsa Kuru, Panchala, Maccha (Matsya), Surasena, Assaka, Avanti, Gandhara and Kambhoja.
- Of these, Magadha, Koshala, Vatsa and Avanti seem to have been considerably powerful.
- These 'Mahajanapadas' extended from the north-west Pakistan to East Bihar and from Himalayas in the North to river Godavari in the South.
- Traditional literature also refer to 16 large states each comprising several agricultural settlements (Janapadas) as existing in India in the Sixth century B.C.
- Another Buddhist text 'Mahavastu' enumerates a similar list of the 16 Mahajanapadas while omitting Gandhara and Kambhoja in the Northwest. These are substituted by Sibi and Dasarna in Punjab and Central India respectively.
- 'Bhagavati Sutra', a Jaina work gives a comparatively different list of the 16 Mahajanapadas while including Vanga and Malaya.

3. Empire of Ashoka

Key Facts

- There is little information regarding the early life of Ashoka. He acted as Governor of Ujjain and also suppressed a revolt in Taxila during his father Bindusara's reign.
- The most important event of Ashoka's reign seems to have been his conversion to Buddhism after his victorious war with Kalinga in 260 B.C. Kalinga controlled the routes to South India both by land and sea and it was therefore necessary that it should become a part of the Mauryan Empire.
- Ashoka's inscriptions mention the Southernmost kingdoms – Cholas, Pandyas, Satyaputras and Keralaputras – as border-states. Therefore these states remained outside the Mauryan Empire.
- The history of Ashoka is reconstructed on the basis of his inscriptions, Thirty-nine, in number, that are classified into Major Rock Edicts, Minor Rock Edicts, Separate Rock Edicts, Major Pillar Edicts and Minor Pillar Edicts.
- The inscriptions which do not carry his name mention only devanam piya piyadasa, dear to the gods, and leave out the name Ashoka.
- Ashoka's 7 pillar edicts have been found at Topra (Delhi), Meerut, Kausambhi, rampurva, Champaran, Mehrauli. Minor pillar edicts have been found at Sanchi, Sarnath, Rummindei, Nigalisagar.
- Although Ashoka embraced Buddhism and took efforts to spread Buddhism, his policy of Dhamma was a still broad concept. It was a way of life, a code of conduct and a set of principles to be adopted and practiced by the people at large.
- Ashoka built a number of stupas throughout his empire. The best example is the famous Sanchi stupa.



4. India in AD 150



Key Facts

- After the death of Asoka, his successors were not able to keep the vast Mauryan Empire intact.
- After the killing of the last King of the Maurya Dynasty named Brihadratha, Pushyamitra Sunga captured the throne of Magadha and founded a new dynasty known as the Sunga Dynasty.
- In the Deccan, Simuka founded the Satavahana dynasty. The greatest ruler of the Satavahana dynasty was Gautamiputra Satakarni.
- The founder of the Saka rule in India was Maues. His son and successor was Azes I, who was considered to be the founder of the 'Vikrama era'.
- The founder of the Kushana dynasty was Kujula Kadphises or Kadphises I. He occupied the Kabul valley and issued coins in his name. Kanishka was the most important ruler of the Kushana dynasty. He was the founder of the 'Saka era' which starts from 78 A.D.
- The real patrons of Gandhara art of school were the Sakas and the Kushanas, particularly Kanishka. Gandhara art was a blend of Indian and Graeco-Roman elements.
- Specimens of Gandhara sculpture have been found in Taxila, Peshawar and in several places of Northwest India.
- Mathura art flourished in the first century A.D. The Buddha images exhibit the spiritual feeling in his face which was largely absent in the Gandhara school.

5. Empire of the Guptas



Key Facts

- After the decline of the Kushanas, North India witnessed the rise of the Gupta dynasty.
- The founder of the 'Gupta dynasty' was Sri Gupta.
- Samudragupta was the greatest of the rulers of the Gupta dynasty and he was succeeded by his son Chandragupta II Vikramaditya. The famous Chinese pilgrim, Fahien visited India during the reign of Chandragupta II.
- In the sphere of religion, Brahmanism reigned supreme during the Gupta period. It had two branches - Vaishnavism and Saivism.
- Both the Nagara and Dravidian styles of art evolved during this period.
- The paintings of the Gupta period are seen at Bagh caves near Gwalior. The mural paintings of Ajanta mostly illustrate the life of the Buddha as depicted in the Jataka stories.
- The Sanskrit language became prominent during the Gupta period. The court of Chandragupta II was adorned by the celebrated Navratnas. Kalidasa remain the foremost among them.
- The Gupta period witnessed a brilliant activity in the sphere of mathematics, astronomy, astrology and medicine. Aryabhatta wrote 'Aryabhatiya' in 499 A.D. It explains scientifically the occurrence of solar and lunar eclipses.
- In the field of medicine, 'Vagbhata' lived during this period. He was the last of the great medical trio of ancient India. The other two scholars 'Charaka' and 'Susruta' lived before the Gupta age.

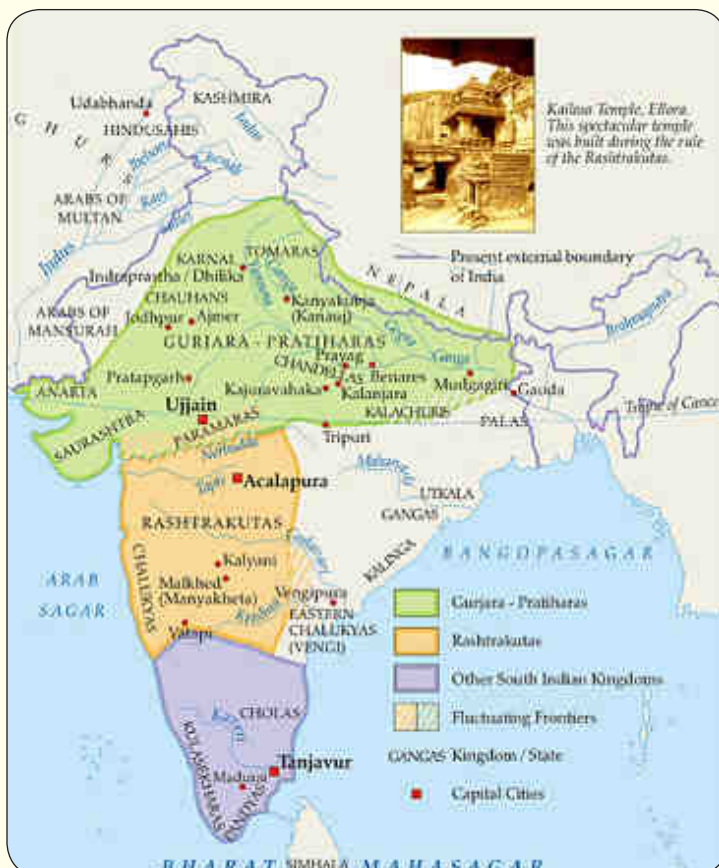
6. Empire of Harshavardhana

Key Facts

- The decline of the Gupta Empire was followed by a period of political disorder and disunity in North India.
- It was only in the beginning of the seventh century A.D. that Harshvardhana succeeded in establishing a larger kingdom in North India.
- In his first expedition, Harshvardhana drove out Sasanka from Kanauj. He made Kanauj his new capital.
- The modern day Rajasthan, Punjab, Uttar Pradesh, Bihar and Orissa were under his direct control. The peripheral states such as Kashmir, Sind, Valabhi and Kamarupa also acknowledged his sovereignty.
- In his early life, Harshvardhana was a devout Saiva but later he became an ardent Hinayana Buddhist. Hiuen Tsang converted him to Mahayana Buddhism.
- Harshvardhana organized a religious assembly at Kanauj to honour the Chinese pilgrim Hiuen Tsang towards the close of his reign.
- Hiuen Tsang mentions in his account about the conference held at Allahabad, known as Prayag. It was the one among the conferences routinely convened by Harshvardhana once in five years.
- Harshvardhana was a great patron of learning. His biographer Banabhatta wrote 'Harshacharita' and 'Kadambari'. Harshvardhana himself authored three plays 'Ratnavali', 'Priyadarsika' and 'Nagananda'.
- Harshvardhana patronised the Nalanda University by his liberal endowments.



7. India During Ninth Century



Key Facts

- After the death of Harsha, there was no political unity in North India for about five centuries.
- The important kingdoms in North India were Kashmir, Gandhara, Sind, Gujarat, Kanauj, Ajmir, Malwa, Bengal and Assam.
- The Gurjara-Pratihara were the earliest of the Rajput rulers.
- The Pratihara involved themselves in a three cornered contest with the Palas of Bengal and the Rashtrakutas of Deccan.
- Besides the Pallavas, the Western Chalukyas and the Rashtrakutas in the Deccan constitute important political forces.
- Pulakesin I was the founder of the Chalukya dynasty. He established a small kingdom with Vatapi or Badami as its capital.
- The Chalukyas were great patrons of art. They developed the vesara style in the building of structural temples.
- The Rashtrakutas were of Kannada origin and Kannada language was their mother tongue. Dantidurga was the founder of the Rashtrakuta dynasty. He defeated the Gurjara and captured Malwa from them.
- The Hindu sects of Vaishnavism and Saivism flourished during the period of Rashtrakutas. Yet, they did not affect the progress of Jainism under the patronage of Rashtrakuta kings and officers.
- The art and architecture of the Rashtrakutas were found at Ellora and Elephanta.



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**08
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**15
SEP.**

Test-16- (9:30 am to 11:30 am)

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**22
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Test-17- (9:30 am to 11:30 am)

सामान्य अध्ययन-I/General Studies-I

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