



PERFECT

WEEKLY
CURRENT AFFAIRS

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SEVEN IMPORTANT ISSUES

1. SECTION 498A: A WEAPON TO WOMEN

Why in News?

The Supreme Court has removed a buffer against arrests under IPC Section 498A, which deals with domestic violence and dowry harassment and stripped trial courts of power to quash criminal cases filed by a wife even if a matrimonial dispute has been settled. A three-judge bench headed by Chief Justice of India Dipak Misra has scrapped the condition laid down in 2017 by another bench that said arrests could be executed only after a family welfare committee filed a report.

Background

'Marriage is the voluntary union for life of one man and one woman to the exclusion of all others.' It is a social institution where husband has the responsibility to take care and maintain his wife. He cannot neglect his duties. But on this great institution a stigma called 'dowry' still exists. Women are ill-treated, harassed, killed, divorced for the simple reason that they didn't brought dowry.

For safeguarding the interest of woman against the cruelty they face behind the four walls of their matrimonial home, the Indian Penal Code, 1860 (IPC) was amended in 1983 and inserted Section 498A which deals with 'Matrimonial Cruelty' to a woman. It made matrimonial cruelty, a cognizable, non bailable and non compoundable offence in India. Further, the law prescribes a maximum three-year prison term for a woman's

husband or his relatives if they are found guilty of harassing her and subjecting her to cruelty.

Section 498A and the Allegation of Misuse

The law has been under much controversy due to its increasing misuse leading to the breakdown of families. It does not cost anything to file a complaint under section 498A of IPC and there is no penalty (or even a fine) for filing a false dowry complaint which has contributed to a fast rise of such cases in courts today.

With the rise in modernisation, education, financial security and the new found independence the radical feminist has made 498A a weapon in their hands. Many of hapless husbands and in laws have become victims of their vengeful daughter-in-laws. Most cases where Section 498A is invoked turn out to be false as they are mere blackmail attempts by the wife (or her close relatives) when faced with a strained marriage. In most cases 498A complaint is followed by the demand of huge amount of money (extortion) to settle the case out of the court.

In the last 35 years of criminal law reform a common argument made against laws relating to violence against women in India has been that women misuse these laws. The police, civil society, politicians and even judges of the High Courts and Supreme Court have offered these arguments of the 'misuse' of laws vehemently. The

Facts about Cases under Section 498A of IPC

- Between 2006-15, the number of cases being filed under section 498A is on the rise and there is roughly a 10 percent rise in number of pending cases each year.
- Since 2012, the number of withdrawn cases under this section has been more than the convictions each year. The net result is that only one out of every seven cases is resulting in conviction.
- The conviction rate of the cases under section 498A (about 12 percent) was less than one-third of the conviction rate for all other IPC crimes (about 40 percent).
- The NCRB's "Crime in India" report said that three of the 10 years, this category had the lowest conviction rate of all. It also needs to be noted that this category consistently figures in the top 10 in terms of the number of cases registered.

allegation of misuse is made particularly against Sec 498A of the IPC. One such view was expressed by former Justice K T Thomas in his article titled 'Women and the Law', which appeared in The Hindu. The 2003 Malimath Committee report on reforms in the criminal justice system also notes, significantly, that there is a 'general complaint' that Sec 498A of the IPC is subject to gross misuse; it uses this as justification to suggest an amendment to the provision, but provides no data to indicate how frequently the section is being misused. It is important therefore that such 'arguments' are responded to, so as to put forth a clearer picture

of the present factual status of the effect of several criminal laws enacted to protect women.

Understanding the Judgement

To check misuse of IPC Section 498A – husband or relative of husband subjecting a married woman to cruelty – a two-judge bench of the top court in July 2017, in the case of Rajesh Sharma and others vs State of Uttar Pradesh and another, had directed that Family Welfare Committees (FWCs) be drawn up from para-legal volunteers, social workers, retired hands, wives of working officers or other willing citizens. Every complaint under Section 498A received by the police or a magistrate be referred to and looked into by such FWCs. Till report of the committee is received, no arrest should normally be effected.

The directive was criticised for allegedly diluting the spirit of Section 498A and subsequently a PIL was filed by an NGO Nyayadhar. While hearing the petition, a three judge bench of Supreme Court set aside the previous direction to constitute FWCs. The FWCs was an extra-judicial authority, which cannot exercise powers and functions of the police and court.

The three-member Supreme Court bench while directing Directors General Police (DGPs) to sensitise investigation officers deputed to deal with cases of dowry harassment, cited four cases which the police could look to for guidance. These included the Joginder Kumar vs State of UP, D.K. Basu vs State of West Bengal, Lalita Kumari vs State of UP and Arnesh Kumar vs State of Bihar, dealing with the conditions under which suspects can be arrested. The bench noted that the police have to act as per the provisions of Section 41 of the Criminal Procedure Code (CrPC) before making arrests for offences under Section 498A of the IPC.

In Arnesh Kumar case, the apex court held that arrest for offence under

Section 498A IPC has to be made only in exceptional circumstances, that too after recording special reasons in writing in accordance with Section 41(1) (b) CrPC.

In Lalita Kumari case, a Constitution Bench of the Supreme Court held that the police has to carry out preliminary inquiry before registration of FIR in respect of matrimonial disputes.

In Joginder Kumar case, the top court said the police should not carry out arbitrary arrests.

In D.K. Basu case, the Supreme Court has laid down procedural guidelines which are to be followed by the police while arresting the accused.

Thus, the top court has directed the DGPs to ensure that the officer in charge of investigations into complaints filed under Section 498A of the Indian Penal Code should be imparted rigorous training with regard to the principles stated by the court relating to arrest. If after investigation, the police find it necessary they can arrest the person. The arrested person can also apply for anticipatory bail.

Further, in all matters where parties to the matrimonial disputes have compromised, they must approach the High Court for quashing the criminal case pending in a criminal court. The

District Court or Sessions Court has no power to quash a case, the Judgement added.

Though the three-member bench modified the two-member bench's direction with regard to constitution of family welfare committees at district level and power of the district judges to close the case under Section 498A on the ground of settlement, it has left undisturbed other directions in the Rajesh Sharma case.

Argument in Favour of stricter Anti-Dowry Law

This verdict of the court opens up a debate on the pros and cons of its applicability. For one, misuse for vested gains by the woman or her family can be a possibility. In that case, an innocent will be arrested on the basis of this law. But votaries of women's rights feel that such instances are rare and there is certainly some truth in their claim. Dowry death and harassment is rampant in our society. In most cases the allegations are found to be true and in 9 out of 10 cases, the husband or the in-laws are found responsible.

In such a backdrop, it would really equip the wrongdoers if the dowry law is relaxed. Despite all the laws in place, women in the country are still

CRIMES AGAINST WOMEN

TOTAL CASES	2016	2017*
Dowry death	249	229
Rape	1,156	1,238
Attempt to rape	125	141
Molestation	1,719	2,039
Eve teasing	221	285
Kidnapping	1,822	2,432
Dowry harassment	2,995	3,010
Acid attack	9	5
Women trafficking	9	15
Immoral trafficking	76	74
PC-PNDT Act violation	66	45
Dowry prohibition	5	10



Difference between Dowry Prohibition Act, 1961 and Section 498A of IPC

In 'Inder Raj Malik and others vs. Mrs. Sumita Malik' (1986), it was contended that section 498A of IPC is ultra vires to Article 14 and Article 20 (2) of the Indian Constitution. There is the Dowry Prohibition Act which also deals with similar types of cases; therefore, both statutes together create a situation commonly known as double jeopardy. But Delhi High Court negates this contention and held that this section does not create situation for double jeopardy. Section 498-A is distinguishable from section 4 of the Dowry Prohibition Act because in the latter mere demand of dowry is punishable and existence of element of cruelty is not necessary, whereas section 498-A deals with aggravated form of the offence. It punishes such demands of property or valuable security from the wife or her relatives as are coupled with cruelty to her. Hence a person can be prosecuted in respect of both the offences punishable under section 4 of the Dowry Prohibition Act and this section.

- Article 14 says that state shall not deny to any person equality before the law or the equal protection of the laws within the territory of India. The concept of equality before the law is equivalent to the second element of the concept of the 'rule of law' propounded by A.D. Dicey, the British jurist. But certain exceptions to it are, the president of India, state governors, public servants, judges, foreign diplomats, etc., who enjoy immunities, protections and special privileges.
- Article 20(2) says that no person shall be prosecuted and punished for the same offence more than once. This is called Doctrine of Double Jeopardy. The objective of this article is to avoid harassment, which must be caused for successive criminal proceedings, where the person has committed only one crime. There is a law maxim related to this – *nemo debet bis vexari*. This means that no man shall be put twice in peril for the same offence.

subject to various forms of torture and harassment, both in their homes and in professional space. The relative conservativeness of the womenfolk in India and their dependence on their husbands leads to this subjugation. There is too much familial and societal pressure which bars women from coming out of their shell and protest exploitation. Our society is not accommodative of such revolts and women are left alone to fend for themselves. In our society, if anything happens, the blame first falls on the woman. This is why, it is important for them to have at least the legal strength to fight atrocities.

Marriage in Indian society is still a sacred bond which is not broken just on any petty scuffle. It hardly happens that a woman files a plaint against her husband or in-laws without reason or basis. It needs immense courage and dispelling of numerous inhibitions to reach the police. If one does so, then there must be some compelling reason and the law, by supporting them, only upholds truth. That rare unfortunate husband whose wife abandons him for

some ulterior motive and files a dowry harassment case, will have to suffer the initial horrors of getting arrested, but eventually, if he is spotless, he will come out clean.

Final Analysis

While the present Judgement has successfully done the balancing act by modifying the earlier judgement in Rajesh Sharma, in fact, much more deserves to be done on this front.

The basic question is to what extent the State and the courts could interfere with the family life of a citizen needs to be addressed before embarking upon a legislative intervention.

Another equally important question that needs to be answered is: who truly represents the poor, uneducated and harassed women of the country? Whether the women bearing bias against men-folk, men and women nurturing evil designs to break the age-old and time-tested joint family system of India or a few convent educated so-called modern and forward women occupying high positions?

This deliberate attempt to divide the families and destroy the fine fabric of our society in the name of dowry harassment and cruelty needs to be tackled firmly by our law makers.

Now that the apex court has thrown back the ball into the court of Parliament, it is high time for our elected representatives to rise to the occasion and take a balanced view to ensure that while the genuine cases of dowry harassment do not go scot-free, the family laws do not become a hurdle in one's living in a peaceful, harmonious manner in a family.

The fact is that a large number of cases filed under Section 498A IPC are baseless, frivolous and vexatious. They are filed for a variety of reasons, such as blackmailing the husband and his parents for fanciful amounts, sometimes running into millions of rupees, concealing physical disability or previous history of sexual relations, illegal abortions etc. In some cases, a nexus between unscrupulous women NGOs, lawyers and police also is quite visible.

Therefore, the law should be made more stringent to heavily punish the women who misuse the provisions of any family law and Section 498A IPC to deter them from filing false cases.

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.



2. MPLAD SCHEME: AN ANALYSIS

Why in News?

Recently, the 21st all India review meeting on Members of Parliament Local Area Development Scheme (MPLADS) was held under the Chairmanship of Union Minister of Statistics & Program Implementation (MoSPI). The focus was on issues related to the implementation of MPLADS with the states/UTs so that the Ministry can take steps to address these for further improvements in its implementation.

The Cabinet Committee on Economic Affairs also has approved the proposal to continue the MPLAD Scheme beyond the 12th Plan period (2012-17) up to March 31st, 2020.

Introduction

Members of Parliament (MP), being the true representatives of the people are more conversant with the realities and intricacies of the structural requirements of their constituency, particularly with reference to the economic and social bottlenecks, more so in the remote and tribal areas.

One of the key tests of their competence is how effective have their recommendations been for utilisation of MPLADS funds. The Central Information Commission (CIC) has asked the Lok Sabha Speaker and the Rajya Sabha chairman to come up with a legal framework for the MPLADS to ensure transparency and accountability amongst lawmakers with respect to the obligations under the scheme. As per data from MoSPI, as of August 6, 318 MPLADS accounts from the 15th Lok Sabha (2009-2014) were still 'active', or had funds lying unspent. MoSPI data shows that over Rs 12,000 crore lies unspent, with some of it having not been released to lawmakers in

the first place. This capital could have been deployed elsewhere for better realisation of the development agenda.

MPLAD Scheme

Member of Parliament Local Area Development (MPLAD) scheme was introduced in December 1993 is an important scheme of government of India which empowers every MP to spend a certain sum of amount on the development of his/her constituency on various social development areas such as health, education, drinking water, electricity, family welfare, sanitations and so on.

The MPLADS allots Rs.5 crore per year to each MP to be spent on projects of their choice in their constituency. The scheme is funded and administered through the MoSPI. Projects are to be recommended to and implemented by the district-level administration.

In 1993-94, the scheme was started with an amount of Rs. 5 lakh allocated to each MP. This was increased to Rs. 1 crore in 1994-95 and to 2 crore in 1998-1999. Recently, it was further revised to Rs. 5 crore in 2011, per MP, per annum. This is released in two equal instalments of Rs. 2.5 crore each by the government of India directly to the district authority of the MP, with the state nodal department and the MP, duly intimated. It is the duty of the district authority and the implementing agency to deposit the funds in a nationalised bank and a separate account is opened for each MP for this purpose. MPLADS funds are non-lapsable.

How does the MPLADS Work?

There are three major stakeholders in the entire process: the MP, district authority and the government of India. MPs recommend works to be undertaken under the MPLADS, based on locally felt needs; with preference

to certain sectors, including drinking water facility, education, health, sanitation, irrigation, roads etc. Following the recommendation, the district authority is responsible for sanctioning the eligible works and implementation of the sanctioned ones. As per official guidelines, the district authority shall make the selection of an implementing agency for execution of the recommended works by an MP.

Performance of MPLADS

- ◆ Haryana, Chhattisgarh, Mizoram, Punjab, Sikkim, Tamil Nadu, Telangana, West Bengal, Gujarat, Odisha are best performing states/UTs in terms of uploading the information (monthly progress report and work-wise details) on the MPLADS web portal. UTs like Lakshadweep, A&N Islands and states of Kerala, Maharashtra and

Committee on MPLADS (Lok Sabha)

The Committee on Members of Parliament Local Area Development Scheme (MPLADS), Lok Sabha, is an ad hoc committee. This committee was constituted for the first time on 22nd February 1999 by the Speaker of Lok Sabha. Initially, the Committee consisted of 20 members; later, the membership was raised to 24. The chairperson of the committee is appointed by the Speaker from amongst the members of the committee. The term of the committee does not exceed one year. The functions of the committee on Members of Parliament Local Area Development Scheme are:

- To monitor and review periodically the performance and problems in implementation of the MPLAD scheme.
- To consider representations/complaints of members of Lok Sabha in regard to the scheme.
- To perform such other functions in respect of the MPLAD Scheme as may be assigned to it by the Speaker of Lok Sabha, from time to time.

Tamil Nadu are amongst the higher side of the performance having maximum percentage utilization of funds over release.

- ◆ The entire population across the country stands to benefit through creation of durable assets of locally felt needs, namely drinking water, education, public health, sanitation and roads etc., under MPLAD scheme.
- ◆ The MPLAD scheme has resulted into creation of various durable community assets which have impacted the social, cultural and economic life of the local communities in one way or the other.
- ◆ In order to avoid duplication of projects funded under the MPLAD scheme, works in as many as 100 districts have been geo-tagged, using the Geographical Information System (GIS) on the MPLADS portal, MPs can now recommend projects online across the country under the scheme.
- ◆ All states and union territories, except Sikkim, have together 318 active accounts of the 15th Lok Sabha under the MPLADS, reflecting a delay in utilising funds for public interest works recommended by the elected members.

Issues and Challenges

MPLADS has been in contention since its very inception. There are a number of issues which plague the scheme.

Corruption

There have been cases of widespread corruption and misappropriation of funds. In a lot of cases, private contractors (which are not permitted) are engaged to implement the works. Also, there have been instances where expenditure has been incurred on works which are prohibited under the scheme.

Funding

There are large amounts of unspent balances rising over the years, low utilisation of funds and an expenditure bias towards a particular sector. A significant number of MPs are yet to open a bank account.

Delivery

There are weaknesses in the process of sanction. The district authorities tend to execute works without receiving any recommendations from MPs concerned or on the recommendation of the representatives of the MPs rather than the MPs themselves. Further, there are lapses on the monitoring and supervision front, with the district authorities failing to inspect the required number of sanctioned works as well as in sending regular monitoring reports.

Sustainability of the Scheme

There have been charges that the scheme goes against the spirit of the 73rd and the 74th Amendment, with MPs enjoying the privilege of an uninterrupted yearly flow of funds to do the work which local bodies are better placed to deliver. The constitutionality of the scheme has also been questioned, with the argument that the scheme erodes the notion of separation of powers, as the legislator directly becomes the executive.

Lack of Adequate Information Available to MPs

Lack of information sometimes leads to a disproportionately large amount of money flowing into one district. There also seems to be an absence of a proper mechanism to ensure constituent participation in order to determine locally felt needs, leaving open the possibility of a small group, having easy access to the MPs, impressing upon him to recommend works according to their needs.

Arguments in Favour of Scrapping this Scheme

The MPLAD scheme is inconsistent with the spirit of federalism and distribution of powers between the Union and states. It also treads into the areas of local government institutions. More than the reports of the committees and commissions, leaders of political parties have, time and again, called for the withdrawal of the scheme to avoid blanket charges of misappropriation of funds against all MPs. In order to monitor, the National Advisory Council (NAC) in 2004 recommended discontinuance of MPLADS. It said:

- ◆ Ideally, local area development needs should be determined and interventions made by the elected local governments. Therefore, MPLADS should be dispensed with and these funds should directly go to panchayats and municipalities for the same purposes.
- ◆ Several new schemes, missions and projects have been launched by the Union government in for the betterment of society.
- ◆ Most of these programmes, and most components of these programmes, cover the subjects in XI and XII Schedules.
- ◆ All these programmes should be implemented by local governments, and all the funds should be kept at their disposal.
- ◆ This will ensure a substantial devolution to local governments. The local governments should own, manage, monitor and control all these new programmes and missions.

Argument against the Scrapping this Scheme

It should not be scrapped as this provides feasible means for ground level development. Instead, factors that result in its inefficient utilisation and those which can improve its effectiveness should be identified

and addressed. A primary reason for underutilisation is that MPs have no real knowledge of actual needs of their constituents or of the development landscape of the constituency. This can be addressed by structured research to support constituency development and planning. This will not only enable the MPs to understand the ground level reality of his/her constituency but also aid in better and planned utilisation of funds that can also ensure maintenance of assets created.

New MPs are using grievance redressal mechanisms for prioritising their constituency development agenda. However, this approach is merely targeted towards problem-solving with no development impact. Therefore, a planned approach towards development based on detailed primary survey, data analysis and empirical research that also take into account central and state welfare schemes would yield better results. It is time to locate MPLADS in the broader context of district-level planned development, which requires a more systematic approach.

Other Views

- ◆ The Central Information Commission (CIC) has taken a grim view of lack of transparency in expenditure by MP under MPLADS Scheme. In two different landmark orders, CIC has observed that there are no proper records of MPs being kept by the Centre or the parliamentary parties. It has recommended to Lok Sabha Speaker and Rajya Sabha chairman that a legal framework be set up "with specific duties and compulsory transparency obligations, definitions of breach of duties, prescribing rules and regulations, besides imposing liabilities for dereliction of duties". The legal framework should include obligations of MPs to annually inform where the allocation of

5 crore has been spent in the constituencies and the assets created.

- ◆ CIC has observed that the nodal ministry of the scheme does not maintain information on creation of assets and depends on district authorities to provide utilisation certificates to release more funds. CIC has directed the ministry to publish MP-wise, constituency-wise and work-wise details, with names of beneficiaries and reasons for delay for all MP.
- ◆ In 2002, the national commission to review the working of the Constitution recommended immediate discontinuation of the MPLAD scheme on the ground that it was inconsistent with the spirit of federalism and distribution of powers between the centre and the state.
- ◆ Former MP, Era Sezhiyan also opposed the scheme and recommended that it be scrapped since it ran contrary to the Constitutional provisions which envisaged separate roles for the Executive and Legislature. Similar views has been expressed by Second Administrative Reforms Commission.
- ◆ However, the Committee on MPLADS in its 13th report and its 15th report stated that there was nothing wrong with the scheme per se except some procedural infirmities and recommended among other things a change of nomenclature to the scheme for local area development.
- ◆ Justice E.S. Venkataramiah, former Chief Justice of India, called the scheme an assault on the Constitution. In a scintillating analysis made in February 1997, he pointed out that the scheme has the effect of interfering not merely with the federal scheme but also with the healthy constitutional principle of separation of powers; there is no provision in the

Constitution, conferring power on individual MPs for spending public money or giving directions to any officer, particularly an officer belonging to a state public service, on any matter. Collectively, when they sit in their respective Houses, they exercise the sovereign power of Parliament; individually they are like every other citizen."

Way Forward

The scheme connects the MPs to their constituents and helps citizens assess whether the spending has been in line with the promises made or not. MPLADS has resulted into creation of various assets which have impacted the social, cultural and economic life of the local communities in one way or the other.

There is a need to work on the loopholes and take corrective measures for its better implementation. Some of the 'best practices' followed across the country can also be replicated or innovated upon. In order to better assess the needs of the constituents, surveys can be conducted across the constituency. For this purpose, NGOs and local community can be involved. Once the needs of the constituency are determined, implementation can be linked to what's needed.

For the scheme to be more effective, an impact assessment study should be undertaken at the constituency level, on a yearly basis, to assess the benefits of the works implemented to the community at large. To tackle the issue of large unspent balances which have accumulated and are rising over the years, fund can be made lapsable. This way funds lying unused can be put to other uses.

General Studies Paper- II

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



3. HDI - 2018: RAISING AWARENESS ABOUT HUMAN DEVELOPMENT

Why in News?

The United Nations Development Programme (UNDP) has released its latest human development index (HDI) report. According to the latest HDI, people living in the very high human development countries can expect to live 19 years longer and spend seven more years in school, than those living in the group of low human development countries.

Introduction

HDI is a composite index focusing on three basic dimensions of human development: the ability to lead a long and healthy life, measured by life expectancy at birth; the ability to acquire knowledge, measured by mean years of schooling and expected years of schooling; and the ability to achieve a decent standard of living, measured by gross national income per capita.

To measure human development more comprehensively, the Human Development Report presents four other composite indices. The inequality-adjusted HDI discounts the HDI according to the extent of inequality. The gender development index compares female and male HDI values. The gender inequality index highlights women's empowerment. And the multidimensional poverty index measures non-income dimensions of poverty.

Key Highlights

- ◆ The overall trend globally is toward continued human development improvements, with many countries moving up through the human development categories: out of the 189 countries for which the HDI is calculated, 59 countries are today in the very high human development group and only 38 countries fall in the low HDI group.
- ◆ Just eight years ago in 2010, the figures were 46 and 49 countries respectively.
- ◆ Norway, Switzerland, Australia, Ireland and Germany lead the ranking of 189 countries and territories in the latest HDI, while Niger, the Central African Republic, South Sudan, Chad and Burundi have the lowest scores in the HDI's measurement of national achievements in health, education and income.
- ◆ Ireland enjoyed the highest increase in HDI rank between 2012 and 2017 moving up 13 places, while Turkey, the Dominican Republic and Botswana were also developing strongly, each moving up eight places. All three steepest declines in human development ranking were countries in conflict: the Syrian Arab Republic had the largest decrease in HDI rank, falling 27 places, followed by Libya (26 places) and Yemen (20 places).
- ◆ The report states that on an average, people are living longer, are more educated and have greater income today as is evident in the rise in average HDI levels since 1990 at 22 per cent globally. The least developed countries registered a 51 per cent increase. In keeping with the global trend, in the last 17 years since 1990, India registered a 50 per cent increase.
- ◆ However, despite the strides made overall, inequality manifests in the "massive differences across the world in people's well-being" with a child born in a low HDI country expected to live just over 60 years as compared to a very high HDI country where a child could live up to 80 years. Likewise, children in low HDI countries are expected to

be in school seven years fewer than children in very high HDI countries.

Inequalities in Human Development

Deep imbalances in people's opportunities and choices stem from inequalities in income but also in education, health, voice, access to technology, exposure to shocks, employment, credit and natural resources due to gender, group identity, income disparities and location. Inequality is not only normatively wrong; it is also dangerous. It can fuel extremism and undermine support for inclusive and sustainable development. High inequality can lead to adverse consequences for social cohesion and the quality of institutions and policies, which in turn can slow human development progress.

At the global level, inequality in income contributes the most to overall inequality, followed by education and life expectancy. Countries in the very high human development group lose less from inequality than countries in lower groups. Much of the recent debate on income inequality within countries focuses on the income and wealth of the richest 1 per cent of the population and even the richest 0.1 per cent relative to the rest. According to the Oxfam International report the eight men own the same wealth as the 3.6 billion people who make up the poorest half of humanity and that 82 percent of all global wealth in the last year went to the top 1 percent, while the bottom half of humanity saw no increase at all. While the share of the richest 1 percent and 0.1 percent is eye catching, focusing on these groups risks obscuring another growing concern in inequality—the decline and stagnation in the livelihood conditions of middle-income households.

For health, vast inequalities exist across countries with different levels of human development. Life expectancy averages 79.5 years in very high human development countries, compared with 60.8 in low human development countries. Life expectancy at birth is 1.6 times higher in the economy with the highest life expectancy, Hong Kong and China at 84.1 years, than in the one with the lowest, Sierra Leone at 52.2 years.

Persistent inequalities across and within countries also exist in education. Adults in very high human development countries average 7.5 more years of schooling than those in low human development countries and children of school entrance age in very high human development countries can expect to be in school for about 7 more years than those in low human development countries. Low human development countries see a large drop in the gross enrolment ratio between primary school (98 percent) and secondary school (43 percent).

Gender Inequality

The disadvantages facing women and girls are a major source of inequality and one of the greatest barriers to human development progress. Worldwide, the average HDI value for women (0.705) is 5.9 percent lower than that for men (0.749). Much of the gap is due to women's lower income and educational attainment in many countries. The gender gap is widest in low human development countries, where the average HDI value is 13.8 percent lower for women than for men.

While primary and secondary education enrolment indicates that some gender gaps in the early formative years are closing, the gender gaps in adulthood remain high. Women hold only 23.5 percent of seats in parliament and among women unemployment rates are higher and labour force participation rates lower. Yet women

provide most unpaid care work in the home—limiting their choices in paid work.

Lack of women's empowerment is a critical aspect of gender inequality. While empowerment barriers exist in many forms, girls and women are especially vulnerable to deprivations of physical integrity. Some 31.7 percent of women in South Asia, 31.5 percent in Sub-Saharan Africa and 26.3 percent in Europe and Central Asia have experienced intimate partner violence.

In low human development countries 39 percent of women ages 20–24 were married before their 18th birthday. Childhood marriage determines their way of life and—more often than not—undermines their opportunities for education, income and independence. High adolescent birth rates also undermine young women's opportunities, especially when pregnancies are by chance and not choice.

Environmental Degradation puts Human Development Gains at Risk

The degradation of the environment and atmosphere, coupled with significant declines in biodiversity, is linked to other development concerns ranging from declining food and water supplies to losses of livelihood and to losses of life from extreme weather events. This profoundly serious crisis threatens the human development of current

and future generations. Very high human development countries are the biggest contributors to climate change, with average carbon dioxide emissions per capita of 10.7 tonnes, compared with 0.3 tonne in low human development countries. Countries with lower levels of human development, especially small island developing states, generally have the lowest emissions but are often the most vulnerable to climate change.

Linked to climate change and biodiversity loss, deforestation also degrades land and reduces the quantity and quality of freshwater. The overall pace of forest loss has slowed in recent years, but the planet still lost 3.2 percent of its forests between 1990 and 2015. And low human development countries, many of them reservoirs of global biodiversity, lost 14.5 percent. Unsustainable water withdrawals and inadequate treatment of waste contaminate drinking water, with cascading impacts on health, employment and gender inequality.

HDI and India

India climbed one spot to 130th among 189 countries in the latest human development index. Within South Asia, India's HDI value is above the average of 0.638 for the region, with Bangladesh and Pakistan, countries with similar population size, being ranked 136th and 150th respectively. In 2016, India's HDI value of 0.624 put it at 131st rank.

- ◆ According to the 2018 findings, between 1990 and 2017, India's

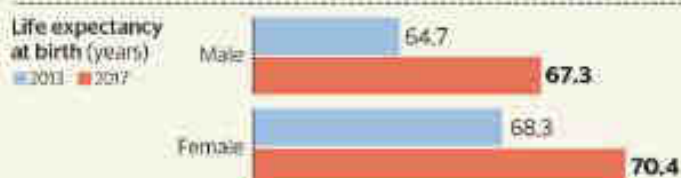
Inequality-adjusted Human Development Index (IHDI)

The IHDI combines a country's average achievements in health, education and income with how those achievements are distributed among country's population by "discounting" each dimension's average value according to its level of inequality. Thus, the IHDI is distribution-sensitive average level of HD. Two countries with different distributions of achievements can have the same average HDI value. Under perfect equality the IHDI is equal to the HDI, but falls below the HDI when inequality rises.

The difference between the IHDI and HDI is the human development cost of inequality, also termed – the loss to human development due to inequality. The IHDI allows a direct link to inequalities in dimensions, it can inform policies towards inequality reduction, and leads to better understanding of inequalities across population and their contribution to the overall human development cost.

Human development improving, but sluggishly

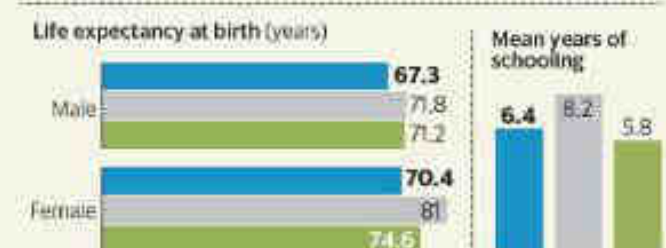
Particularly egregious is gender inequality and the suicide rate.



Maternal mortality ratio (deaths per 100,000 live births)	200 (for 2010)	174 (for 2015)
Infant mortality ratio (per 1,000 live births)	44 (for 2012)	34.6 (for 2016)
Under-five mortality ratio (per 1,000 live births)	56 (for 2012)	43 (for 2016)
Stunting (moderate or severe) (% under five years)	48% (2008-09)	37.9% (2010-2016)
Quintile ratio	5 (for 2003-2012)	5.3 (2010-2017)
Mean years of schooling—years	4.4 (for 2012)	6.4
Suicide rate (per 100,000 people)		
Female	7.8 (2003-09)	14.2 (2015)
Male	13 (2008-09)	17.9 (2015)

Some poorer countries do better than India in human development

Vietnam, despite being poorer, beats India on almost all parameters. (In 2017)



	Year	India	Vietnam	Bangladesh
Maternal mortality ratio (per 100,000 live births)	2015	174	54	176
Infant mortality (per 1,000 live births)	2016	34.6	17.3	28.2
Under-five mortality (per 1,000 live births)	2016	43	21.6	34.2
Suicide rate per 100,000 people				
Male	2015	17.9	11.3	5.3
Female	2015	14.2	3.4	6.6

Source: Human Development Reports

HDI value increased from 0.427 to 0.640, an almost 50 per cent increase, which is “an indicator that millions have been lifted out of poverty”. At the same time, in what signals the glaring inequality in the country, the HDI value declines by more than a fourth when adjusted for inequality. The value of India’s Inequality-adjusted HDI (IHDI) falls to 0.468, a 26.8 per cent decrease, far worse than the global average decrease in the global HDI value due to inequality at 20 per cent.

- ◆ In this period, life expectancy at birth in the country has increased by 11 years and children have been predicted to stay in school for 4.7 years longer than in 1990. The highest leap has been in India’s Gross National Income (GNI) per capita which registered a 266 per cent increase between 1990 and 2017.

- ◆ The unequal distribution of outcomes is visible not just between countries but also within each country. In India’s case, the inequality-adjusted HDI of 26.8 per cent is due to the stark inequality in access to education, health and income.
- ◆ Globally, the average HDI for women is six per cent lower than for men, due to women’s lower income and educational attainment in many countries. India ranks 127th out of 160 countries on the ‘Gender Inequality Index’ which reflects gender-based inequalities in reproductive health, empowerment (political and educational) and economic activity.
- ◆ India women hold only 11.6 per cent of parliamentary seats, while only 39 per cent of adult women have reached at least a secondary level of education as compared

to 64 per cent men. India’s worst performance on the gender scale is with regards to its female participation in the labour market which is 27.2 per cent compared to 78.8 per cent for men even as globally 49 per cent women are part of the labour force as compared to 75 per cent men.

Way Forward

Most people today live longer, are more educated and have more access to goods and services than ever before. Even in low human development countries people’s human development has improved significantly. But the quality of human development reveals large deficits. Living longer does not automatically mean more years spent enjoying life. Being in school longer does not automatically translate into equivalent capabilities and skills. So shifting the focus towards the quality of

human development will be important in monitoring future progress.

Every human being counts and every human life is equally valuable. That universalism is at the core of the human development concept. With the 2030 Agenda for Sustainable Development, the Sustainable Development Goals and the promises to leave no one behind, this universal perspective is more critical than

ever, particularly in a world that is increasingly unequal, unstable and unsustainable.

As far as India is concerned, India's HDI has increased tremendously in the last two and half decades. However, India need to focus on inequality and the pockets of deprivation that are dragging the HDI down. Gender inequality is another big issue which adversely affects human development.

This inequality is mainly due to the very low economic participation of women in India.

General Studies Paper- II

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

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4. MODERNIZING LAND RECORDS IN INDIA

Why in News?

The Digital India Land Records Modernisation Programme (DILRMP)—the erstwhile National Land Records Modernisation Programme—seeks to improve the quality of land records in the country, make them more accessible and move towards government-guaranteed titles. A land title is a document that helps determine land ownership. This will be achieved through complete computerization of the property registration process and digitization of all land records. The scheme completed a decade in operation in August this year.

Introduction

Land as an asset is unique because it is immovable, its value depends on its location and with growing population, its demand keeps increasing, while its supply is limited. Access to land (or land rights) has a wide-ranging impact on livelihoods, industrial, economic, and social growth. It has been noted that people with extensive rights to land are better off than the landless, due to better access to markets and other economic opportunities that come with land rights.

Land records are a combination of three types of data records: (i) textual (RoR), (ii) spatial (maps) and (iii) transaction details (sale deeds).

Three different state departments are responsible for each of this data on land records. In the presence of multiple agencies responsible for registration and maintenance of records, it is difficult to ensure that survey maps, textual data and registration records match with each other and are updated. In addition, citizens have to approach several agencies to get complete information on land records. Most of these departments work in silos and updating of records by any one of them makes the records of the others outdated.

Land ownership is broadly defined by the access to a land title. Land title is a document that determines the ownership of land or an immovable property. Having a clear land title protects the rights of the title holder against other claims made by anyone else to the property. In India, land ownership is determined through various records such as sale deeds that are registered, property tax documents, government survey records, etc. However, land titles in India are unclear due to various reasons such as legacy issues of the zamindari system, gaps in the legal framework and poor administration of land records. This has led to several legal disputes related to land ownership and affected the agriculture and real estate sectors.

The Evolution of Land Records

Prior to independence, land was mostly concentrated with the landlords or zamindars, who had permanent property rights. The zamindars collected land rent from a given territory and paid a fixed sum as land revenue to the government. This land revenue formed a key source of government income. However, the rent that was to be paid by the cultivator tenants was unregulated and was subject to the discretion of the landlords. This allowed the landlords to make profits by charging rents in excess of the amount to be paid as revenue.

Since the landlords were primarily interested in maximising rent collection, a system of land records was created and maintained to facilitate this process. These land records furnished information important for land revenue assessment such as area of the property and details of the person in possession of the property. Post-independence, the zamindari system was abolished, but land ownership continued to be determined through a combination of these records. Post-independence, the responsibility for land administration was transferred to states. All the records were collected and maintained manually by the respective revenue department. Further, with the abolition

of the zamindari system, a few land reforms were implemented. These included policies on redistribution of land and tenancy reforms.

The land redistribution reforms sought to put a cap on the amount of land a person could hold and consolidation of such extra land with the government. These were known as land ceiling laws, which were later repealed in urban areas (mostly because they were not successful and resulted in unused land banks with the government). The tenancy reforms broadly aimed at: (i) conferring security of tenure on tenant cultivators (to provide them some form of land rights) and (ii) fixing fair rents for tenants. However, these were also mostly unsuccessful. Currently, most states have either legally banned or imposed restrictions on agricultural land leasing, which has led to informal tenancy across the country.

Why are land titles in India Unclear?

Land titles in India are unclear because of various reasons. The system of land records was inherited from the zamindari system, the legal framework in India does not provide for guaranteed ownership and the manner in which information pertaining to land records is collected and maintained further exacerbates the gaps in these records. Some of the reasons are discussed below:

- ◆ First, in India, we have a system of registered sale deeds and not land titles. The Transfer of Property Act, 1882, provides that the right to an immovable property (or land) can be transferred or sold only by a registered document. These documents are registered under the Registration Act, 1908. Therefore, the transaction gets registered and not the land title. This implies that even bona fide property transactions may not

always guarantee ownership, as earlier transactions could be challenged.

- ◆ Second, land ownership is established through multiple documents maintained by different departments, making it cumbersome to access them.
- ◆ Third, the cost of registering property is high and, hence, people avoid registering transactions. While registering a sale deed, the buyer has to pay a stamp duty along with the registration fee.
- ◆ Fourth, under the Registration Act, 1908, registration of property is not mandatory for transactions such as acquisition of land by the government, property leased for less than one year and heirship partitions. Thus, several property divisions are not recorded and, hence, do not correctly reflect the ownership of the property. This often leads to litigation related to rightful ownership.

Digital India Land Records Modernization Programme

In the last three decades, in an attempt to improve the quality of land records and make them more accessible, the Central government has implemented various schemes for the modernisation of land records. Around 1988-89, the Central government started the computerisation of land records scheme to computerise all land records. Other schemes to improve land records and administration that were introduced around the same time were the strengthening of revenue administration and the updating of land records schemes. The Digital India Land Records Modernization Programme (DILRMP) was launched by government of India in August 2008, aimed to modernize management of land records, minimize scope of land/property disputes, enhance transparency in the land records

maintenance system and facilitate moving eventually towards guaranteed conclusive titles to immovable properties in the country. The programme was revamped in 2014, with its inclusion in the 'Digital India' initiative.

The scheme was changed into a central sector scheme in April 2016. With this change, the scheme will now be implemented by the Central government with 100% of the grants coming from the centre. The major components of the programme are computerization of all land records including mutations, digitization of maps and integration of textual and spatial data, survey/re-survey and updation of all survey and settlement records including creation of original cadastral records wherever necessary, computerization of registration and its integration with the land records maintenance system, development of core Geospatial Information System (GIS) and capacity building.

Progress under DILRMP

- ◆ As of August, while two states (Karnataka and Odisha) and three Union territories have completed 100% computerization of land records, four states are yet to start the process.
- ◆ The remaining states have computerized between 80-90% of the records.
- ◆ Nineteen states/Union territories have started issuing digitally-signed record of rights (RoRs), a record that shows how rights on land are derived for the land owner and records the property's transactions from time to time.
- ◆ These states have also started linking RoRs to cadastral maps (a record of the area, ownership and value of land). Out of these, three states (Goa, Odisha and Tripura) have almost completed this process.

- ◆ As of August, computerization of land records has been completed in 87% of the villages. However, mutation (transfer of ownership) records have been computerized in only 50% of the villages. Further, only about 21% of the villages have started real time updating of RoR and maps. This suggests that, while records have been digitized, they may not be up to date.
- ◆ Maps form an important component of land records as they provide data on property boundaries and details on the exact limits of ownership. However, only about 48% of the cadastral maps have been digitized so far. Spatial data has been verified in just 45% of the villages and survey and re-survey work, which helps update spatial records, has been carried out in only 9% of the villages.

The Need for Clear Land Titles

High Litigation

- ◆ A World Bank study from 2007 suggested that land-related disputes account for two-thirds of all pending court cases in the country. A NITI Aayog paper also suggested that land disputes on average take about 20 years to be resolved.

Agricultural Credit

- ◆ Land is often used as collateral for obtaining loans by farmers. Incorrect land records also affect the availability of other inputs for farming. Credit flow to agriculture has been consistently increasing with the banking sector exceeding the targets set for loan disbursement by the government. While the credit flow to agriculture has been rising every year, the extent of financial exclusion still remains large. Farmers with

smaller land holdings (less than one hectare) primarily borrow from informal sources of credit such as moneylenders and friends and relatives.

Development of New infrastructure

- ◆ Over the last few decades, the economy of the country has seen a shift from being agrarian based to becoming manufacturing and services based. This has necessitated the development of infrastructure and a shift in land use from agriculture to commercial, industrial and residential.

Urbanisation and the Housing Shortage

- ◆ The housing shortage in urban areas was estimated to be 1.87 crore units in 2012 and this is expected to increase to two crore units by 2022. Unclear land titles mean several of these new housing projects may get into land ownership disputes. Under new schemes for urban development (Smart Cities Mission, AMRUT), cities are trying to raise their own revenue through property taxes and land based financing. This further necessitates the importance of providing a system of clear land titles in urban areas.

Benami Transactions

- ◆ A benami transaction is one where a property is held by or transferred to a person, but has been provided for or paid by another person. Unclear titles and non-updated land records enable carrying out property transactions in a non-transparent way. The Standing
- ◆ Unclear land titles impede development on several fronts. For example, in rural areas, small and marginal farmers, who may not hold formal land titles, are unable to access institutionalized credit.

In urban areas, disputed land titles lead to lack of transparency in real estate transactions. Any infrastructure created on land that is not encumbrance-free can be potentially challenged in the future, making such investments risky.

Committee on Finance (2015) examining the Benami Transactions Prohibition (Amendment) Bill, 2015 noted that generation of black money through benami transactions could be pre-empted and eliminated by digitisation of land records and their regular updation.

Benefits to citizens

- ◆ Real-time land ownership records will be available to the citizen.
- ◆ Public Private Partnership (PPP) mode of service delivery will further reduce citizen interface with government machinery, while adding to the convenience.
- ◆ Abolition of stamp papers and payment of stamp duty and registration fees through banks, etc. will also reduce interface with the registration machinery.
- ◆ With the use of IT inter linkages; the time for obtaining RoRs, etc. will be drastically reduced.
- ◆ The single-window service or the web-enabled “anytime-anywhere” access will save the citizen time and effort in obtaining RoRs, etc.
- ◆ Automatic and automated mutations will significantly reduce the scope of fraudulent property deals.
- ◆ Conclusive titling will also significantly reduce litigation.
- ◆ This method will permit e-linkages to credit facilities.
- ◆ Market value information will be available on the website to the citizen.

Challenges to Establishing Clear Land Titles

Several committees have suggested that moving to a conclusive titling system will help address the issues around unclear land titles. While moving to a conclusive land titling system is desirable, it poses several challenges:

- ◆ Firstly, it would require ensuring that all existing land records are accurate and free of any encumbrances. Currently, land records are incomplete, inaccurate and do not reflect the position on ground. Cross checking all these records against all past transactions and with the existing position of ground would be time consuming and resource intensive process.
- ◆ Secondly, it would require that all information around land is available through a single window. Currently, land records are dispersed across various departments. Changes in land records in one department are not always reflected in the records in the other departments.

Integration of information across departments would require integrating such information, updating these records and ensuring that the information across the departments matches. It would also require creating systems where any new information is recorded and updated through a single window and that gets reflected across all the departments. Note that in municipal areas, some property related data is also stored in other departments such as electricity, and water supply. These would also need to reflect the updated property information.

- ◆ Thirdly, with regard to the legal framework, land, registration of documents and contracts are regulated across both centre and states. Moving to conclusive titling would require amending these central and state laws and creating a unified legal framework that provides for government guaranteed land ownership.

Conclusion

The focus in India on digitisation of land records administration is admirable and is a step in the right direction towards increasing the overall efficiency of land record administration in India.

In this system, the government provides guaranteed titles and compensation in case of any ownership disputes. However, adopting such a system in India will require several measures. Several changes in existing laws that govern registration and transfer of land will be required. A system of registered property titles will have to be developed as the primary evidence of ownership. All existing land records will have to be updated to ensure that they are free of any encumbrance. Information on land records, which is currently spread across multiple departments, will have to be consolidated.

General Studies Paper- III

Topic: Land reforms in India.



5. FOOD STORAGE IN INDIA: A PERSISTING CHALLENGE

Why in News?

India's foodgrain production is estimated to grow to an all-time high of 284.83 million tonnes in the 2017-18 crop year ending June, driven by record output in wheat, rice, coarse cereals and pulses after a normal monsoon. India stores about 30.52 million tonnes of rice, wheat, maize, gram and sorghum in such structures at Food Corporation of India (FCI) godowns and hired spaces. However, adequate food production is not sufficient to ensure food security. Not all food produced is consumed, as an enormous amount of food is lost or wasted. Poor foodgrain storage and resultant food wastage has been a persistent problem in India.

Introduction

Agriculture, along with its allied sectors, is the largest source of livelihood in India. About 82 per cent of the country's farmers are small and marginal, having holdings less than one hectare. A challenge for the Indian agricultural sector today is to feed its ever-growing population, even though India's foodgrain production has kept steady pace with its population. However, adequate food production is not sufficient to ensure food security. Not all food produced is consumed, as an enormous amount of food is lost or wasted. According to Food and Agriculture Organisation (FAO),

produce worth \$14 billion is damaged annually. It is a paradox that millions go hungry in India everyday while food goes to waste.

It is estimated that saving one-fourth of the food currently lost or wasted globally would be enough to feed 870 million hungry people in the world. Maximum food loss happens during transit from farm to fork, especially to urban markets. These losses not only impact producers with reduced income and consumers with increased costs, but also challenge overall food security.

It has been also observed that food waste and loss occurs differently in

developing and developed countries. In developing countries, food waste and loss occurs at early stages of the food value chain. This can be associated with lack of support to farmers, poor/non-scientific harvesting techniques, weak infrastructure, storage, cooling and transport facilities. In developed countries, food waste and loss occurs largely at retail and consumer stages.

Around 62,000 tonnes of food grains, mainly rice and wheat, have been damaged in the last six years in the storage facilities of FCI. Most grain in India, which is procured from farmers by the government, is stored using the CAP (cover and plinth) method. It is estimated that there is a 10% loss of harvested grain, of which 6% is lost in storage. This means that the grain is so damp and fungus-ridden that it cannot be ground and passed on to the public for consumption.

Foodgrain Storage Management in India

FCI is the only government agency entrusted with movement of food grains from the procuring states to consuming states through a network of storage infrastructure owned or hired by FCI in the whole of India. These foodgrains are distributed by the state governments through Targeted Public Distribution System (TPDS) and other welfare schemes. The foodgrains are also disposed of in the open market through sale under open market sales scheme (OMSS) to contain inflationary tendencies and generating storage space in the states. While four months requirement of food grains for issue under TPDS and other welfare schemes are earmarked as operational stocks, the surplus over that is treated as buffer stock and physically both buffer and operational stocks are merged into one and are not distinguishable. For distribution of food grains under TPDS, the government makes monthly

allocation of food grains to the states and UTs on the basis of their average annual offtake of food grains from the central pool.

Storage management is an important link in the whole system of procurement of foodgrains to its distribution for consumption. At the trader's level and urban organizational storage level, the foodgrains are stored either in covered storage and open storage. In some cases, proper plinth is not provided and in the other cases, dunnage is not provided and food grain bags are stacked directly on the ground causing huge damage of food grains. In some cases, the open storage is done in unprotected open ground without compound wall or fencing, resulting in lot of pilferage and damage by animals.

Even though FCI is the main government agency for the procurement and distribution of foodgrains held in the central pool, it is also responsible for the management of foodgrains in the central pool held by state government agencies (SGAs) and decentralized procurement states (DCP). Due to increasing procurement of food grains from 2008-09 onwards, FCI has had to depend on hired space made available from Central Warehousing Corporation (CWC), State Warehousing Corporations (SWC) and private parties. As mentioned earlier, the food grain stock is parked in covered godowns, silos and uncovered godowns called CAP.

Storage Structure in India

Grains in India, is stored at farmers, traders and industrial levels. Appropriate technology for handling and storage of pulses are been developed in all parts of the globe. Grain storage structures are a collection of devices for grains used after harvesting to store grains safely until their consumption. Grain storage structures are classified as follows:

Conventional Structures

In India, a large amount of food grains produced is stored at home level in indigenous storage structures. Farmers use locally available raw materials to develop traditional structures differing in design, shape, size and functions. The different conventional storage structures in use are:

- ◆ Straw storage structures.
- ◆ Bamboo/Reed storage structures.
- ◆ Masonary storage structures.
- ◆ Earthen storage structures.
- ◆ Underground storage structures.

Improved Grain Storage Structures

- ◆ PUSA bin is one of the important improved methods of storage developed by Indian Grain Storage Management and Research Institute (IGSMRI). One design consists of the floor and lower part of the walls burnt with a layer of plastic sheeting inserted between two bricklayers.
- ◆ Another improved structure known is Hapur Tekka. It is a cylindrical rubberised cloth structure supported by bamboo poles on a metal tube base. A small hole in the bottom facilitates grain removal.

Commercial Grain Storage Structures

In India, surplus food grains are accumulated in the warehouses owned by the FCI, CWC and SWCs. They have a network of storage depots strategically located all over India. These depots include silos and an indigenous method developed by FCI, called Cover and Plinth (CAP).

- ◆ CAP storage is a term given to storage of food grains in the open with adequate precautions such as rat and damp proof plinths, use of dunnage and covering of stacks with specially fabricated polythene covers etc. It is the most

economical storage structure and is being widely used by the FCI for bagged grains.

- ◆ Other method is known as silo system. These are tall tower like structures used to store grains. The government of India has considered only four silos to be sufficient for the nation's needs — one each in Kolkata, Chennai, Mumbai and Hapur-Ghaziabad. The last one, in Uttar Pradesh, is the most modern with a storage capacity of 500 tonnes.
- ◆ In order to export basmati rice, Punjab has, in a public-private partnership, built modern, temperature-controlled grain silos with a storage capacity of 50,000 tonnes.
- ◆ Silo Bag Technique: For bulk storage of food grains at procurement sites silo bags are used. These bags are made of High-density polyethylene (HDPE) and protect grains from rain, UV rays, atmospheric humidity and dust etc.

Challenges

Poor Farm Storage

The storage facilities at farm levels are poor often leading to damage by pests and insects. The storage facilities are also not suitable for long-time storage of grains.

Inadequate Food Storage

There has been an increase in storage capacity of FCI over the past years. The CAG report revealed serious imbalances in availability of storage capacity and huge shortage of storage space in consuming states. State-run facilities and warehouses can only store about 60% of the food that is grown in the country. This leaves millions of tonnes of food to be:

- ◆ Left in the open with just tarps to cover them.
- ◆ They deteriorate much more quickly this way since there is no temperature control and they are

exposed to the elements and often times they become infested with rodents, rendering them unable to be sold.

No 'first in-first out' Policy

As per the extant policy of issue of food grains of FCI, the principle of first-in-first-out (FIFO) should be strictly followed with respect to the crop year as well as within crop year during which the stocks are accepted. Non-adherence of this principle leads to failure of early disposal of damaged stock and also causes damage to existing stock.

Incapability of FCI

The FCI has neither the warehouse capacity nor the manpower to manage this humongous stockpile of foodgrains. Every year, the government purchases millions of tonnes of grain from farmers for ensuring they get a good price and for use in food subsidy programmes and to maintain an emergency buffer. The cruel truth is that most of it has to be left out in the open, vulnerable to rain and attacks by rodents, or stored in makeshift spaces, covered by tarpaulin sheets, creating high rates of spoilage.

Poor Infrastructure

Every year tonnes of food grains go waste because of inadequate storage and infrastructure facilities. The wastage of fruits and vegetables is even higher than grains. Insufficient cold storage and cold chain transportation system is a major cause for fruits, vegetables and other perishable products to rot.

The lack of transportation for harvested grains means that farmers often have to sell their grains to middle men for essentially whatever price they ask if they wish to sell them at all.

Health Issues

Eating mouldy grain causes a variety of illnesses. According to a World Health Organisation paper,

titled "Mycotoxins", mycotoxins, which are found in mouldy grain/foods, are associated with human disease and produce aflatoxins (cancer-causing), trichothecenes, ochratoxins, citrinin and other toxins. Aflatoxicosis causes abdominal pain, vomiting, hepatitis and (sometimes) death after acute exposure to high concentrations in food. Chronic low dose exposure to aflatoxin can result in impaired growth in children.

Government Initiatives

National Policy on Handling and Storage of Food Grains, 2000

The government of India announced the national policy on handling and storage of food grains in 2000, to reduce storage and transit losses at farm and commercial level and to modernize the system of handling, storage and transportation of food grains in India. The main thrust of the policy is:

- ◆ Declaration of foodgrains storage as infrastructure.
- ◆ Encouragement of mechanical harvesting, cleaning and drying at farm and market level.
- ◆ Transportation of grains from farm to silos by specially designed trucks.
- ◆ Construction of chain silos at receipt as well as distribution points.
- ◆ Encouraging private sector for building storage capacities in which grains procured by government agencies would be stored on payment of storage charges.
- ◆ Encouraging private sector for development of infrastructure for the integrated bulk handling, storage and transportation of foodgrains.

Gramin Bhandaran Yojana

It is a capital investment subsidy scheme for construction / renovation of rural godowns. It was introduced in 2001-2002. Under the scheme,

subsidy is provided for construction/renovation of rural godowns, so as to create scientific storage capacity with allied facilities in rural areas to meet the requirements of farmers for storing farm produce. The project for construction of rural godowns can be taken up by individuals, farmers, groups of farmers/growers, firms, non-government organizations (NGOs), Self Help Groups (SHGs), companies, corporations, co-operatives, federations and agricultural produce marketing committees in the country.

The Warehousing (Development & Regulation) Act, 2007

It made the 'Warehousing Receipt' a negotiable one. The Act came into operation in October 2010. The Act envisages the registration of quality warehouses with the authority, to issue Negotiable Warehousing Receipts (NWRs). The main objectives of the Act were to make provision for the development and regulation of warehouses, negotiability of warehousing receipts, establishment of a Warehousing Development and Regulatory Authority (WDRA) and related matters.

Recent Developments

Government is planning to take steps to utilize vacant government land with railways and other government agencies. As a part of this initiative, a joint venture between CWC and Indian Railway has resulted in and rail-side warehousing company limited which is constructing godowns at selective railheads.

The government will construct high-tech silos for storage of rice in producing states once the technology for the same is fully ready. Punjab has also planned to construct silos of 17 lakh tonnes capacity, of which work for 1.5 lakh-tonne capacity is completed while construction of another 15.5 lakh-tonnes by the state agency is underway.

Way Forward

Grain storage capacity in India cannot meet the storage requirement for buffer and operational stocks, public distribution system and farm level storage. Storage is an important link in the entire procurement and distribution system of food grains, produced seasonally but consumed

all the year round. Therefore, storage facilities in India need to be strengthened by supplying them with the much-needed scientific storage and drying equipment's.

From augmenting the existing storage capacity by construction of new ones through various means both public and private including partnerships, the need of the hour is to revamp the existing storage management of foodgrains in the country and make people and agencies accountable and responsible for their jobs of ensuring food security. Integration of the entire storage business in India through management information system (MIS) would go a long way in ensuring timely decisions are taken for optimum utilization of the existing facilities.

General Studies Paper- III

Topic: Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System-objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.

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6. TRANSFORMING INDIA'S MOBILITY: PATH TO THE FUTURE

Why in News?

A report titled 'Transforming India's Mobility: A Perspective' has been prepared by the NITI Aayog and Boston Consulting Group (BCG) calls for efficient and convenient public transport to answer the twin problems of pollution and congestion. The report quickly attracted attention amid daily increases in fuel prices.

Introduction

India's rapid growth in population and wealth over last few decades has led to considerable strain in its transport infrastructure. Since 1980,

the country's population has nearly doubled (~90% growth) and India is set to become the world's most populous country in the next decade. In the same period, its Gross Domestic Product (GDP) per capita grew by more than 5 times, with most of the growth recorded in the period post 2000. The number of registered motor vehicles has gone up from 5.4 million in 1981, to 210 million in 2015, a 40-fold increase. Urban areas have seen rapid growth. However, due to lack of integrated mobility planning, it has resulted in making Indian cities amongst the most polluted & congested.

The rapid growth in India's urbanization, population and wealth over the last few decades has had a marked effect on the mobility of its citizens. India's transport demand has grown by almost 8 times since 1980 – more than any other Asian economy. This large growth has been positive in many ways, including development of a thriving auto industry and allied economic growth. However, there are a set of challenges to be addressed. A WHO study has fourteen Indian cities featuring in the top fifteen most polluted cities in the world. This challenge leads to significant health

and welfare losses, currently estimated at 7.7% of India's GDP (PPP adjusted) by the World Bank. Additionally, major Indian cities are also now consistently ranked amongst the world's most congested cities. The average speed for vehicles in some metros are reported as low as 17 km/h. These high levels of congestion have huge cost in form of reduced productivity and fuel waste. A high-level estimate of the economic loss of congestion, for top four metros, is over USD 22 billion annually.

It is worthy to note that multiple efforts – at the city, state and national level – have been made to alleviate these challenges. For rural India, the Pradhan Mantri Gram Sadak Yojana (PMGSY) is perhaps the best example. The reinvigoration of this scheme in the last 3 years has led to record high of building all-weather roads at a rate of 130 km/day. For urban India, in order to address the twin challenges of pollution and congestion, a number of initiatives have been launched. At the national level, multiple policies such as the National Urban Transport Policy & the National Electric Mobility Mission Plan -2020 have been designed as well. While there are multiple examples of such initiatives, the magnitude and complexity of mobility challenges requires a comprehensive action-agenda that addresses the issue holistically. The high population growth, coupled with economic growth aspirations warrants a tailored approach, unique to our context.

Background: Transportation infrastructure in India

The transportation infrastructure in India—consisting of roads, suburban railways, metro lines and fuel stations—is inadequate in supporting current needs or any future rise in population. Poor transportation infrastructure development may be attributed to lack of political will, skills and coordination amongst public agencies both at the

state and city level. For example, there is insufficient route allocation for public transportation, leading to overcrowding in some routes and deficit in others. Experts have earlier noted other reasons for delay in development of infrastructure, including failure in devising and applying common design standards during construction; and high costs and time-consuming processes involved in land acquisition.

Today, Indian cities are characterised by increasing levels of congestion, pollution, road fatalities and inequity in access. To build inclusive, safer and more sustainable cities of tomorrow, technology will play a decisive role in identifying mobility gaps and transforming existing transportation services.

The urban mobility in India stands transformed today for two reasons.

- ◆ First, technology has enabled real-time analysis of public transportation routes and traffic patterns that was previously not possible.
- ◆ Second, public sector agencies have now begun to encourage the use of public transportation through new mobility business models such as on-demand and multimodal trip-planning applications.

This is the reflection of a global trend where governments and businesses are exploring mobility solutions through multimodal transportation where users will have the option of seamlessly integrating services like public transportation and ride-sharing, instead of having to choose one over the other. Integration will require collaborative efforts by a diverse set of stakeholders: among them, central and state governments, transit agencies, infrastructure developers, transportation service providers and data scientists.

NITI Aayog Report on Transforming India's Mobility'

Based on exhaustive study of global examples and learning from India's past efforts, a holistic framework for 'Transforming India's Mobility' is proposed. The crown of the framework defines the overall objectives (3C)

- ◆ **Clean:** Pollution-free, leading to clean air and hence better health and living standards.
- ◆ **Convenient:** Seamless, safe, affordable, accessible for all sections including the elderly & disabled and connected – both in terms of technology as well as connecting key rural and urban centers.
- ◆ **Congestion-free:** Minimum congestion levels and hence enhanced economic efficiency.

To achieve the objectives, following action-agenda is advocated around four key pillars, namely,

- (a) Connect Bharat.
- (b) Optimize travel footprint.
- (c) Promote seamless, co-operative transport.
- (d) Adopt green modes and technologies.

These pillars have to be well supported by a common set of enablers – skills and employment, intelligent transport systems, public awareness, governance and financing.

Connect Bharat

One clear imperative for mobility paradigm is to build Safe, Adequate and Holistic Infrastructure (SAHI) for all citizens, including women, elderly and disabled. Also, the infrastructure network needs to solve for all types of connectivity - urban - to - urban, urban - to - rural and rural - to - rural. Through multiple current schemes such as Pradhan Mantri Gram Sadak Yojana (PMGSY), Pradhan Mantri Jal Marg Yojana (PMJM) and UDAN (Ude

Desh ka Aam Naagrik). There is a need for continued action and focus on this, aided with few elements as detailed below:

- ♦ Increased emphasis on safety and accessibility.
- ♦ Leveraging multiple modes of transport – road, rail, coastal and inland waterways, small regional airports, ropeways etc.
- ♦ Higher usage of data for holistic mobility needs.

Optimize Travel Footprint

Another focus area is to reduce congestion caused by passenger and goods flow, especially in urban context. This reduced congestion would also significantly help the cause of clean air. Indian cities have one of the highest peak-time congestion amongst Asian cities - India citizens spend almost 1.3-1.6x additional time in peak traffic for our top four metros, compared to 0.6x for Singapore and Hong Kong. This can be greatly reduced through concerted focus along following dimensions.

- ♦ Integrated land use.
- ♦ Focused policy based measures for optimizing travel.
- ♦ Data-based measures such as intelligent transport systems.

Further, a comprehensive logistics framework that minimizes impact on the city's internal traffic, through measures such as timing, zoning and optimal planning of warehouses is required. This also needs to be supported by building more bypass routes (where needed) and encouraging multiple modes transport modes. Also, latest technological advances and ubiquitous connectivity needs to be leveraged. The considerable amount of post-harvest losses in India can be reduced through effective logistics management, integrated crop management systems, cold chain networks and demand aggregation. Initiatives such as the national logistics

action plan (NLAP) being drafted by the Ministry of Commerce are steps in the right direction.

Promote Seamless, Public Transport

An efficient and convenient public transport (PT) will go a long way in answering the twin problems of pollution and congestion. There is a need to improve both the adequacy and adoption of PT in India, and this would need holistic focus across multiple dimensions

- ♦ Data-driven planning and urban transport, with a clear hierarchy amongst different modes
- ♦ Focus on multi-modal systems
- ♦ Make PT attractive for urban India, to increase adoption

Further, our mobility solutions need to be harmonized with the global shared mobility revolution.

Adopting Green Modes and Technologies

The final pillar focuses on adopting green modes and technologies such as electric vehicles and non-motorized transport (NMT). For improving adoption of non-motorized transport, the routes and paths should be planned so that they integrate seamlessly with public transport. Lastly, ensuring safety for NMT users by outlining norms & dedicated traffic signals should be a key priority.

Further, a clear push towards cleaner technologies is need of the hour. This has to be enabled through ecosystem development which includes domestic manufacturing, deployment of charging infrastructure etc. The goal should be to holistically reduce well-to-wheel emissions.

Overarching Strategic Levers

To ensure effective execution of these key pillars, a number of supporting enablers need to be put in place for laying the foundation.

Skills and Employment

The vast agenda calls for a number of new skills that will be required at a local and national level. Timely skill gap assessment and requisite planning can ensure high employability while addressing the potential resource demand.

Intelligent Transport Systems

There is a need to leverage ongoing technological developments to build more connected and data centric mobility systems.

Governance

There is a need for a well-defined governance mechanism involving different stakeholders.

Public Awareness

A strong public awareness and communication campaign would help include the beneficiary citizen as an equal stakeholder in success.

If the suggested 3C approach along with key pillars and enablers is executed effectively, the results can be transformative for India's mobility landscape. Improvement in rural connectivity can help in increased connectivity of villages with high adoption of public transport. PM2.5 emissions can reduce significantly across Indian cities. Additionally, the speed on arterial roads of major cities can be improved significantly. This holistic advancement should support India to have a target mobility landscape that is clean, convenient & congestion free.

Suggestions

- ♦ The public and private sectors must collaborate to devise and develop India-centric solutions to fix the country's cities. Government agencies should invest resources to

make transportation data open to the public to encourage innovation through development of new business models to mitigate the mobility crisis in the country.

- ◆ The private sector can share data on number of vehicles, traffic patterns, accidents and user behaviour to allow policymakers to introduce evidence-based regulations on pricing and safety.
- ◆ Private car ride-sharing and car-pooling services will form only a part of the solution. Policymakers must look at revamping public transportation and infrastructure to transform urban mobility.
- ◆ Regulations must be introduced to encourage efficient use of existing roads and smarter traffic management. For example, not allowing trucks and large commercial carriers to ply city roads during the day.
- ◆ Policymakers must collaborate with data scientists to explore mechanisms to implement congestion pricing and dynamic pricing for parking spaces.

- ◆ The ride-sharing industry in the country must look at reducing, even eliminating, driver dependency on middlemen or intermediaries to procure cars. The ride-sharing industry must explore different credit-rating processes for their driver-partners.
- ◆ Transit agencies must ensure that buses are equipped with GPS tracking in order to provide real-time schedules and routes.
- ◆ Governments must ensure that the adequate ecosystem is in place before adopting new technologies in mobility. For instance, to adopt electric vehicles, cities must have first installed sufficient number of charging stations.
- ◆ Authorities must consider revising the regulatory framework in place to use vehicles for commercial use.

Conclusion

As India's urban hubs continue to become more congested and polluted — and with increasing road fatalities and inequity in access — India will need

to find a solution to fix its urban mobility crisis. Expanding public transportation services will be key to transforming mobility in India's urban centres, along with efficient use of existing roads and smarter traffic management through technology-based interventions.

India's urban mobility challenge will only become more acute in the coming decade as cities become more crowded, polluted and unsafe. To meet the challenge effectively, a dialogue between stakeholders is essential to evaluate assets and to devise innovative mobility solutions. To encourage new businesses that leverage technology to provide mobility, policymakers must first agree on principles for regulation based on fairness, safety and equity. New mobility is a lucrative industry one that can serve local communities and provide opportunities to many.

General Studies Paper- III

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

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7. REVIVAL OF SPRINGS IN THE HIMALAYAS FOR WATER SECURITY

Why in News?

Nearly 50 per cent of the springs in the Indian Himalayan Region (IHR) are drying up, according to a report released by NITI Aayog. This has affected thousands of villages that depend on natural spring water for domestic and livelihood needs like drinking water and irrigation. In fact, the water crisis in Shimla and other hill towns in India are a direct result of drying up of springs.

Introduction

Springs are the main source of water for millions of people in the Himalayas.

Both rural and urban communities depend on springs for their drinking, domestic and agricultural water needs. Most water supply schemes that have been laid in the areas have their origins in a spring. There is increasing evidence that springs are drying up or their discharge is reducing throughout the Himalayas. It is reported that half of the perennial springs have already dried up or have become seasonal resulting in acute water shortages across hundreds of Himalayan villages. If this crisis persists it will affect lives and livelihoods of millions of people in the mountains.

While glaciers are generally considered to be the source of they mighty Himalayan Rivers, most of them have their origin in the form of springs. The non-glacial rivers clearly show how hundreds of springs provide the flows in stream and river channels even during the dry season. Any significant depletion in such spring flows at river origins will surely impact the flow of rivers. Hence, high dependency on one hand and an increasing sensitivity to depletion on the other, make Himalayan springs greatly vulnerable in the current context, despite being part of heritage, traditions and cultures in the region.

The Himalayas

The majestic Himalayas, a life-support system for millions of people in uplands and much more in lowland areas of the country, acts as climate regulator for much of Asia. All this, accompanied by the richness and uniqueness of bio-physical and socio-cultural diversity, has earned a global recognition to the region. The Himalayas, aptly known as 'the water tower of the earth', are therefore a major source of fresh water for perennial rivers such as the Indus, the Ganga and the Brahmaputra.

The Himalayas are the largest and tallest mountain range in the world, spanning 8 countries viz., Afghanistan, Pakistan, China, India, Nepal, Bhutan, Bangladesh and Myanmar and covering an area of about 43 lakh km². Nine major perennial rivers viz., Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, Tarim, Yangtse and Yellow River have their origins in the Himalayas. More than 30 peaks of the Himalayas rise to heights of 7,620 m (25,000 ft) or more, including Mount Everest (8,848 m), the world's highest mountain. Nearly 1.5 billion people depend on the Himalayas for water, food and energy. The Indian Himalayan Region (IHR) spans 10 hill States viz., Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and two partial hill states – Assam and West Bengal. Nearly 50 million people reside in the IHR alone.

Major Issues and Challenges

- ◆ There are 5 million springs across India, of which nearly 3 million are in the IHR alone. Over 200 million people in India depend on springs, out of which 50 million people are in the 12 states of the region. But despite this, these springs have not received due attention and continue to dry up due to increasing

demand for water, ecological degradation of the mountain areas and unsustainable land use.

- ◆ Nearly 30% of springs crucial to water security of people are drying and 50% have reported reduced discharge. Himalayan tourism growing annually at 6.8% has created huge challenge related to solid waste, water traffic, loss of bio-cultural diversity etc. With the projected arrival of tourists in IHR states to more than double by 2025, urgent actions will be needed to address critical issues of waste management and water crisis in addition to other environmental and social issues.
- ◆ Spring depletion has not only affected people, but has also had serious impact on forests and wildlife. Many natural watering holes for wildlife are in the form of springs and seeps. Depletion has led to water insecurity inside forests and national parks and on their fringes as well. The problem, therefore, transcends the entire spectrum of dependents and dependencies, rural and urban to forests and wildlife.
- ◆ The Himalayas are a major source of fresh water for India's perennial rivers such as the Ganga and the Brahmaputra. The drying up of springs will affect the flow of these rivers. The springs and streams contribute up to 90 per cent of water to the Ganga. Going by the NITI Aayog report, tens of thousands of villages are facing acute shortage of water for drinking and other domestic purposes.
- ◆ Springs and rivers enjoy a very close relationship that is reflected in innumerable ways. Any change in spring hydrology has clear ramifications on river hydrology, whether in the headwater regions, where springs manifest themselves

as sources of rivers, or in the lower-reach plains of river systems where they contribute almost invisibly as base flows to river channels.

- ◆ Contamination originating from two different sources – geogenic and anthropogenic – can lead to deterioration of spring water supplies. Microbial content, sulphates and nitrates are primarily because of anthropogenic reasons. Fluoride, arsenic and iron contamination is mainly derived from geogenic sources. For example, coliform bacteria in spring water may be derived from septic tanks, household wastewater, livestock facilities and manure lagoons in the source area or in the aquifers feeding springs. Similarly, nitrate sources include septic tanks, household wastewater, agricultural fertilizers and livestock facilities, or in some instances – natural deposits.

National Spring Water Management Programme

In 2014, the National Mission for Sustaining the Himalayan Eco-System, under India's National Action Plan on Climate Change, had suggested state-wide programme for rejuvenation of Himalayan springs and protection of high-altitude lakes. It had also suggested creating an inventory of mountain springs—active and dormant—along with detailed geological mapping to identify the spring recharge zone.

Four years later, the NITI Aayog report, too, has laid down the road map for revival of springs in the region. The most important recommendation of the group is to launch a national programme on regeneration of springs in the Himalayan region. The programme will entail several short (first four years), medium (4-8 years) and long-term (beyond 8th year) actions.

Short-term Actions (for first 4 years)- Phase I

The intensive phase (first four years) will essentially include launching the spring revival programme in one vulnerable block in each of the mountain states. This phase will include partnerships and collaborations designed to provide technical, financial and institutional support while building local capacity with the objective of adapting the programme to the local context and enable scaling up from this resource block from the fourth year onwards.

Vulnerability will be defined on the basis of spring depletion in spring-dependent regions that are not supplied through piped water supply schemes, e.g. regions in the middle Himalayas with higher population density are likely to be more vulnerable than the higher Himalayas.

Strong monitoring and evaluation with proper scientific instrumentation, with the involvement of local Block Development staff, educational institutions and NGOs, must be ensured so that the learnings from the programme are well documented.

This phase will involve the following set of activities:

- ◆ Creation of a web-enabled database/web portal on which the springs can be mapped/ tagged.
- ◆ Capacity building activities, focusing on creation of a cadre of para-hydrogeologists will be needed and can be taken up through 'Skill India Initiative'.
- ◆ Organizing a national level workshop for policymakers and decision-makers must become an annual event during this phase.
- ◆ Awareness and education of communities regarding spring water management under a changing climate can play a crucial role in springshed management.

Medium-term Actions (for 5th – 8th years)- Phase II

The knowledge – network phase of the following four years will involve handing over the programme to the state governments who can use existing funds (state budget, plus funds generated through Compensatory Afforestation Fund Management and Planning Authority (CAMPA)) to scale up this initiative to other larger areas, making it possible to reach as many springsheds as possible.

Some states such as Himachal Pradesh, Uttarakhand, Sikkim, Meghalaya and Nagaland are already piloting spring-revival through a variety of programmes. This work could be leveraged for achieving some scale during the medium-term phase.

The programme should be integrated with the on-going development activities of the states, whether through dedicated springshed programmes or through a strong link-up with allied programmes such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The programme would continue to provide scientific inputs and analysis, organize coordination workshops, exposure visits, documentation and function around the short-term pilots, as knowledge and learning process under the programme.

- ◆ Mainstreaming and convergence of springshed management with other developmental programmes will be required to facilitate greater synergies with government schemes at this stage.
- ◆ A digital atlas of springsheds could be developed as a clear output in the second phase. This would also help in the periodic assessment of groundwater resources in the country.

Long-term Actions (beyond 8th year)- Phase III

All springs and springsheds would need to be covered during the long-term phase, the duration of which can be decided at the end of the medium-term action plan. Standardisation of the springshed management process would be more or less established by the end of Phase II. However, resources will have to be mobilised for scaling up and reaching out to diverse geographies and communities in a challenging landscape. Hence, the idea of developing a proposal for the Green Climate Fund (GCF) on springshed management covering the IHR is suggested here, in order to access financial resources required for implementation on a large scale.

Bhutan is preparing a similar proposal on springshed revival for the GCF. There are newer financial opportunities including development bonds that could be explored. Further, there is scope for mobilisation of resources through instruments such as National Mission for Sustaining Himalayan Ecosystem (NMSHE) where spring-water conservation could also have a bearing on India's commitments under the global climate change regimes. Moreover, given the dependence of mountain communities on spring water for meeting their drinking water needs, springshed revival contributes to meeting commitments under the Sustainable Development Goals (SDGs), especially SDG 6 (including safe water).

Practice and Policy Gaps

Springs are the de facto groundwater resources of the hills and mountains. Their recognition as such is virtually missing from both water supply and water conservation programmes at large scales. While there are growing examples of integrating the concept of groundwater management with springshed management from many

areas in the region, the effort is small as compared to the need.

Sustainable Urbanization in Mountain Habitats

In the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) includes the topic of springs and spring management. However, there is a need for a balanced approach covering urban as well as rural contexts to address the problem of reduced spring discharge. Bringing science to bear upon the practice of efficient and equitable spring water management will logically bring about a greater degree of sustainability to mountain water management.

National Water Policy (2012)

The Himalayan region has been mentioned in the National Water Policy only in the context of consideration of environmental issues while planning. There is no specific emphasis on springs and springshed management in the document, or for that matter, the connection between springs and groundwater, or springs and river flows.

Neglect of Springs in Planning of Urban Water Supply

When water supply for hill towns is considered, typically engineering solutions are provided as the first line. Project reports are made that aim to lift water from distant downstream rivers. More often than not, however, major springs are available near the town which can be tapped for water by gravity or at most small lift schemes. Protecting these springs and their

springsheds often offers low cost and sustainable solutions.

Large Scale Drilling

Large scale drilling in the mountains to improve agricultural productivity, provide access to drinking and domestic water and enable industrial growth is leading to competition between uses and users of groundwater and between natural (springs) and anthropogenic sources (wells) that tap a common resource (aquifers). This might lead to a conflict between two types of sources tapping the same aquifer in addition to affecting the sustainability of river flow. This paradox of sources and the resource is neither brought into improved practices of water management nor is it clearly mandated as a paradigm shift in any water policy documents.

Way Forward

The Gandhian quote 'There is enough on the earth for everyone's need, not for everyone's greed' is true about our water resources too. The burgeoning population and its consequent impact are exhausting the available freshwater resources leading towards a water crisis.

The Indian Himalaya Region (IHR), a part of Himalaya also has huge water resources in its lakes, river and glaciers, however yet under threat. It may also be due to changing rainfall pattern, protracted droughts, fluctuating temperatures, more frequent and severe weather events, including floods, potential for hydropower generation, forest cover degradation

and other anthropogenic activities. It outlines the importance of planning for management of all the Himalaya's water resources. Lives in the mountains depend on springs. They are not just part of the heritage but the health of the rivers also depends on the health of the springs. It requires seriousness on the part of the government. As the springs are directly related to the health of catchment areas as well as forestation.

Integrated monitoring of water and ecosystems must become an intrinsic and permanent part of water management. The success of such water management will depend on an active, water-literate public. Water resources are inextricably linked with climate, and therefore the prospect of global climate change has serious implications for water resources and regional development. Sustainable mountain development in Indian Himalayan Region (IHR) is under the shadow of regional instability. Water scarcity may become a security threat in the future. Water is no longer only a resource, but also a topic of conflict. It is limited and cannot be expanded; so the only option is its efficient management. Capacity building is also needed for the water resources managers and developers for updating the knowledge and technology in the area of water resources management.

General Studies Paper- III

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



SEVEN SUBJECTIVE QUESTIONS WITH MODEL ANSWERS

Section 498A: A Weapon to Women

Q1. "There should be gender justice for women as dowry has a chilling effect on marriage on the one hand and on the other hand, there is right to life and personal liberty of the man." Analyse the statement in respect with the recent judgement by Supreme Court on the matter related to misuse of Section 498A of IPC?

Hints:

- ◆ For safeguarding the interest of woman against the cruelty they face behind the four walls of their matrimonial home, the Indian Penal Code, 1860 (IPC) was amended in 1983 and inserted Section 498A which deals with 'Matrimonial Cruelty' to a woman. It made matrimonial cruelty, a cognizable, non bailable and non compoundable offence in India. The main objective of section 498A of IPC is to protect a woman who is being harassed by her husband or relatives of husband.
- ◆ With the rise in modernisation, education, financial security and the new found independence the radical feminist has made 498A a weapon in her hands. Many a hapless husbands and in laws have become victims of their vengeful daughter-in-laws.
- ◆ In the last 35 years of criminal law reform a common argument made against laws relating to violence against women in India has been that women misuse these laws. The police, civil society, politicians and even judges of the High Courts and Supreme Court have offered these arguments of the 'misuse' of laws vehemently.
- ◆ Between 2006-15, the number of cases being filed under section 498A is on the rise and there is roughly a 10 percent rise in number of pending cases each year. Since 2012, the number of withdrawn cases under this section has been more than the convictions each year. The net result is that only one out of every seven cases is resulting in conviction. The conviction rate of the cases under section 498A (about 12 percent) was less than one-third of the conviction rate for all other IPC crimes (about 40 percent). The NCRB's "Crime in India" report says that three of the 10 years, this category had the lowest conviction rate of all. It also needs to be noted that this category consistently figures in the top 10 in terms of the number of cases registered.

- ◆ Marriage in Indian society is still a sacred bond which is not broken just on any petty scuffle. It hardly happens that a woman files a complaint against her husband or in-laws without reason or basis. It needs immense courage and dispelling of numerous inhibitions to reach the police. If one does so, then there must be some compelling reason and the law, by supporting them, only upholds truth.
- ◆ The fact is that a large number of cases filed under Section 498A IPC are baseless, frivolous and vexatious. They are filed for a variety of reasons, such as blackmailing the husband and his parents for fanciful amounts, sometimes running into millions of rupees, concealing physical disability or previous history of sexual relations, illegal abortions etc. In some cases, a nexus between unscrupulous women NGOs, lawyers and police also is quite visible. Therefore, the law should be made more stringent to heavily punish the women who misuse the provisions of any family law and Section 498A IPC to deter them from filing false cases.

MPLAD Scheme: An Analysis

Q2. There are men, money and machinery but MPs do not have the will to use all the money for the people of their constituency. In spite of having system, mechanism and funds, most of the MPLADS funds are lying un-utilised or underutilised. Does it not amount to abdication of responsibility by elected representatives? Critically Examine.

Hints:

- ◆ Recently, the 21st all India review meeting on Members of Parliament Local Area Development Scheme (MPLADS) was held under the Chairmanship of Union Minister of Statistics & Program Implementation (MoSPI). The focus was on issues related to the implementation of MPLADS with the states/UTs so that the Ministry can take steps to address these for further improvements in its implementation. The Cabinet Committee on Economic Affairs also has approved the proposal to continue the MPLAD Scheme beyond the 12th Plan period (2012-17) up to March 31st, 2020.
- ◆ Members of Parliament (mp), being the true representatives of the people are more conversant

with the realities and intricacies of the structural requirements of their constituency, particularly with reference to the economic and social bottlenecks, more so in the remote and tribal areas.

- ◆ Member of Parliament Local Area Development (MPLAD) scheme was introduced in December 1993 is an important scheme of government of India which empowers every MP to spend a certain sum of amount on the development of his/her constituency on various social development areas such as health, education, drinking water, electricity, family welfare, sanitations and so on.
- ◆ The MPLADS allots Rs.5 crore per year to each MP to be spent on projects of their choice in their constituency. The scheme is funded and administered through the MoSPI. Projects are to be recommended to and implemented by the district-level administration.
- ◆ The Central Information Commission (CIC) has taken a grim view of lack of transparency in expenditure by MP under MPLADS scheme. In two different landmark orders, CIC has observed that there are no proper records of MPs being kept by the Centre or the parliamentary parties. It has recommended to Lok Sabha Speaker and Rajya Sabha chairman that a legal framework be set up “with specific duties and compulsory transparency obligations, definitions of breach of duties, prescribing rules and regulations, besides imposing liabilities for dereliction of duties”. The legal framework should include obligations of MPs to annually inform where the allocation of 5 crore has been spent in the constituencies and the assets created.
- ◆ Arguments in favour of scrapping this scheme: The MPLAD scheme is inconsistent with the spirit of federalism and distribution of powers between the Union and states. It also treads into the areas of local government institutions. More than the reports of the committees and commissions, leaders of political parties have, time and again, called for the withdrawal of the scheme to avoid blanket charges of misappropriation of funds against all MPs.
- ◆ The scheme connects the MPs to their constituents and helps citizens assess whether the spending has been in line with the promises made or not. MPLADS has resulted into creation of various assets which have impacted the social, cultural and economic life of the local communities in one way or the other.
- ◆ There is a need to work on the loopholes and take corrective measures for its better implementation. Some of the 'best practices' followed across the country can also be replicated or innovated upon. In order to better assess the needs of the constituents, surveys can be conducted across the constituency. For this

purpose, NGOs and local community can be involved. Once the needs of the constituency are determined, implementation can be linked to what's needed.

HDI - 2018: Raising Awareness about Human Development

Q3. “Human development is about human freedoms. It is about building human capabilities—not just for a few, not even for most, but for everyone.” Discuss the statement in light of recently launched human development index report by the United Nations Development Programme (UNDP).

Hints:

- ◆ The United Nations Development Programme (UNDP) has released its latest human development index (HDI) report. The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. According to the latest HDI, people living in the very high human development countries can expect to live 19 years longer and spend seven more years in school, than those living in the group of low human development countries.
- ◆ The overall trend globally is toward continued human development improvements, with many countries moving up through the human development categories: out of the 189 countries for which the HDI is calculated, 59 countries are today in the very high human development group and only 38 countries fall in the low HDI group. Just eight years ago in 2010, the figures were 46 and 49 countries respectively.
- ◆ Norway, Switzerland, Australia, Ireland and Germany lead the ranking of 189 countries and territories in the latest Human Development Index (HDI), while Niger, the Central African Republic, South Sudan, Chad and Burundi have the lowest scores in the HDI's measurement of national achievements in health, education and income.
- ◆ However, despite the strides made overall, inequality manifests in the “massive differences across the world in people's well-being” with a child born in a low HDI country expected to live just over 60 years as compared to a very high HDI country where a child could live up to 80 years. Likewise, children in low HDI countries are expected to be in school seven years fewer than children in very high HDI countries.
- ◆ Human development gaps reflect unequal opportunity in access to education, health, employment, credit and natural resources due to gender, group identity, income disparities and location. Inequality is not only normatively wrong; it is also dangerous. It can fuel

extremism and undermine support for inclusive and sustainable development. High inequality can lead to adverse consequences for social cohesion and the quality of institutions and policies, which in turn can slow human development progress.

- ◆ Persistent inequalities across and within countries also exist in education. Adults in very high human development countries average 7.5 more years of schooling than those in low human development countries and children of school entrance age in very high human development countries can expect to be in school for about 7 more years than those in low human development countries. Low human development countries see a large drop in the gross enrolment ratio between primary school (98 percent) and secondary school (43 percent).
- ◆ The degradation of the environment and atmosphere, coupled with significant declines in biodiversity, is linked to other development concerns ranging from declining food and water supplies to losses of livelihood and to losses of life from extreme weather events. This profoundly serious crisis threatens the human development of current and future generations.
- ◆ Most people today live longer, are more educated and have more access to goods and services than ever before. Even in low human development countries people's human development has improved significantly. But the quality of human development reveals large deficits. Living longer does not automatically mean more years spent enjoying life. Being in school longer does not automatically translate into equivalent capabilities and skills. So shifting the focus towards the quality of human development will be important in monitoring future progress.
- ◆ Every human being counts and every human life is equally valuable. That universalism is at the core of the human development concept. With the 2030 Agenda for Sustainable Development, the Sustainable Development Goals and the promises to leave no one behind, this universal perspective is more critical than ever, particularly in a world that is increasingly unequal, unstable and unsustainable.

Modernizing Land Records in India

Q4. Why are land titles in India unclear? Discuss the various factors have led to unclear land titles. What are the possible policy responses to addressed modernisation and digitisation of land records?

Hints:

- ◆ Land titles in India are unclear because of various reasons. The system of land records was inherited from the zamindari system, the legal framework in India does

not provide for guaranteed ownership and the manner in which information pertaining to land records is collected and maintained further exacerbates the gaps in these records.

- ◆ In India, we have a system of registered sale deeds and not land titles, land ownership is established through multiple documents maintained by different departments, making it cumbersome to access them, the cost of registering property is high and, hence, people avoid registering transactions and finally under the Registration Act, 1908, registration of property is not mandatory for transactions such as acquisition of land by the government, property leased for less than one year and heirship partitions. Thus, several property divisions are not recorded and, hence, do not correctly reflect the ownership of the property. This often leads to litigation related to rightful ownership.
- ◆ Prior to independence, land was mostly concentrated with the landlords or zamindars, who had permanent property rights. The land redistribution reforms sought to put a cap on the amount of land a person could hold and consolidation of such extra land with the government. Around 1988-89, the central government started the Computerisation of Land Records scheme to computerise all land records. The Digital India Land Records Modernization Programme (DILRMP) was launched by government of India in August 2008, aimed to modernize management of land records, minimize scope of land/property disputes, enhance transparency in the land records maintenance system and facilitate moving eventually towards guaranteed conclusive titles to immovable properties in the country. The programme was revamped in 2014, with its inclusion in the 'Digital India' initiative.
- ◆ The Standing Committee on Finance (2015) examining the Benami Transactions Prohibition (Amendment) Bill, 2015 noted that amendments to the Transfer of Property Act, 1882 and Registration Act, 1908 may be made to provide for: (i) online registration of all immovable properties, (ii) linkage of Aadhar and PAN numbers of all parties involved in purchase of a property and (iii) sharing of data by the registration authorities with tax authorities.
- ◆ A system of registered property titles will have to be developed as the primary evidence of ownership. All existing land records will have to be updated to ensure that they are free of any encumbrance. Information on land records, which is currently spread across multiple departments, will have to be consolidated.

Food Storage in India: A Persisting Challenge

Q5. In India, it is estimated that there is a 10% loss of harvested grain, of which 6% is lost in storage. Most grain in India is stored using the cover and plinth (CAP) method. Discuss why the government must stop storing millions of tonnes of foodgrains in the open under tarpaulins.

Hints:

- ◆ India's foodgrain production is estimated to grow to an all-time high of 284.83 million tonnes in the 2017-18 crop year ending June, driven by record output in wheat, rice, coarse cereals and pulses after a normal monsoon. India stores about 30.52 million tonnes of rice, wheat, maize, gram and sorghum in such structures at Food Corporation of India (FCI) godowns and hired spaces. However, adequate food production is not sufficient to ensure food security. Not all food produced is consumed, as an enormous amount of food is lost or wasted. Poor foodgrain storage and resultant food wastage has been a persistent problem in India.
- ◆ It is estimated that saving one-fourth of the food currently lost or wasted globally would be enough to feed 870 million hungry people in the world. Maximum food loss happens during transit from farm to fork, especially to urban markets. These losses not only impact producers with reduced income and consumers with increased costs, but also challenge overall food security.
- ◆ It has been also observed that food waste and loss occurs differently in developing and developed countries. In developing countries, food waste and loss occurs at early stages of the food value chain. This can be associated with lack of support to farmers, poor/non-scientific harvesting techniques, weak infrastructure, storage, cooling and transport facilities. In developed countries, food waste and loss occurs largely at retail and consumer stages.
- ◆ There has been an increase in storage capacity of FCI over the past years. The CAG report revealed serious imbalances in availability of storage capacity and huge shortage of storage space in consuming states. State-run facilities and warehouses can only store about 60% of the food that is grown in the country.
- ◆ The FCI has neither the warehouse capacity nor the manpower to manage this humongous stockpile of foodgrains. Every year, the government purchases millions of tonnes of grain from farmers for ensuring they get a good price and for use in food subsidy programmes and to maintain an emergency buffer. The cruel truth is that most of it has to be left out in

the open, vulnerable to rain and attacks by rodents, or stored in makeshift spaces, covered by tarpaulin sheets, creating high rates of spoilage.

- ◆ Eating mouldy grain causes a variety of illnesses. According to a World Health Organisation paper, titled "Mycotoxins", mycotoxins, which are found in mouldy grain/foods, are associated with human disease and produce aflatoxins (cancer-causing), trichothecenes, ochratoxins, citrinin and other toxins. Aflatoxicosis causes abdominal pain, vomiting, hepatitis and (sometimes) death after acute exposure to high concentrations in food. Chronic low dose exposure to aflatoxin can result in impaired growth in children.
- ◆ Grain storage capacity in India cannot meet the storage requirement for buffer and operational stocks, public distribution system and farm level storage. Storage is an important link in the entire procurement and distribution system of food grains, produced seasonally but consumed all the year round. Therefore, storage facilities in India need to be strengthened by supplying them with the much-needed scientific storage and drying equipment's.

Transforming India's Mobility: Path to the Future

Q6. Urban form and mobility architectures have a symbiotic relationship. What does that mean for the kind of mobility solutions they need to put in place? Analyze.

Hints:

- ◆ Urban areas have seen rapid growth. However, due to lack of integrated mobility planning, it has resulted in making our cities amongst the most polluted & congested. The rapid growth in India's urbanization, population and wealth over the last few decades has had a marked effect on the mobility of its citizens. India's transport demand has grown by almost 8 times since 1980 – more than any other Asian economy.
- ◆ The transportation infrastructure in India—consisting of roads, suburban railways, metro lines and fuel stations—is inadequate in supporting current needs or any future rise in population. Poor transportation infrastructure development may be attributed to lack of political will, skills and coordination amongst public agencies both at the state and city level.
- ◆ It is worthy to note that multiple efforts – at the city, state and national level – have been made to alleviate these challenges. For rural India, the Pradhan Mantri Gram Sadak Yojana (PMGSY) is perhaps the best example. The reinvigoration of this scheme in the last 3 years has led to record highs of building

all-weather roads at a rate of 130 km/day. For urban India, in order to address the twin challenges of pollution and congestion, a number of initiatives have been launched. At the national level, multiple policies such as the National Urban Transport Policy & the National Electric Mobility Mission Plan -2020 have been designed as well. While there are multiple examples of such initiatives, the magnitude and complexity of our mobility challenges requires a comprehensive action-agenda that addresses the issue holistically. The high population density, growth, coupled with our economic growth aspirations warrants a tailored approach, unique to our context.

- ◆ India's urban mobility challenge will only become more acute in the coming decade as cities become more crowded, polluted and unsafe. To meet the challenge effectively, a dialogue between stakeholders is essential to evaluate assets and to devise innovative mobility solutions. To encourage new businesses that leverage technology to provide mobility, policymakers must first agree on principles for regulation based on fairness, safety and equity. New mobility is a lucrative industry one that can serve local communities and provide opportunities to many.
- ◆ The magnitude and complexity of our mobility challenges requires a comprehensive framework that addresses the issue holistically. The high population density, growth, coupled with our economic growth aspirations warrants a tailored approach, unique to our context.

Revival of Springs in the Himalayas for Water Security

Q7. Springs are the main source of water for millions of people in the Himalayas. But there is increasing evidence that springs are drying up or their discharge is reducing throughout the Himalayas. If this crisis persists it will affect lives and livelihoods of millions of people in the mountains. Analyse.

Hints:

- ◆ Nearly 50 per cent of the springs in the Indian Himalayan Region (IHR) are drying up, according to a report released by NITI Aayog. This has affected thousands of villages that depend on natural spring water for domestic and livelihood needs like drinking water and irrigation. In fact, the water crisis in Shimla and other hill towns in India are a direct result of drying up of springs.
- ◆ Springs are the main source of water for millions of people in the Himalayas. Both rural and urban

communities depend on springs for their drinking, domestic and agricultural water needs. Most water supply schemes that have been laid in the areas have their origins in a spring. There is increasing evidence that springs are drying up or their discharge is reducing throughout the Himalayas.

- ◆ It is reported that half of the perennial springs have already dried up or have become seasonal resulting in acute water shortages across hundreds of Himalayan villages. If this crisis persists it will affect lives and livelihoods of millions of people in the mountains.
- ◆ There are 5 million springs across India, of which nearly 3 million are in the IHR alone. Over 200 million people in India depend on springs, out of which 50 million people are in the 12 states of the region. But despite this, these springs have not received due attention and continue to dry up due to increasing demand for water, ecological degradation of the mountain areas and unsustainable land use.
- ◆ Spring depletion has not only affected people, but has also had serious impact on forests and wildlife. Many natural watering holes for wildlife are in the form of springs and seeps. Depletion has led to water insecurity inside forests and national parks and on their fringes as well. The problem, therefore, transcends the entire spectrum of dependents and dependencies, rural and urban to forests and wildlife.
- ◆ Springs and rivers enjoy a very close relationship that is reflected in innumerable ways. Any change in spring hydrology has clear ramifications on river hydrology, whether in the headwater regions, where springs manifest themselves as sources of rivers, or in the lower-reach plains of river systems where they contribute almost invisibly as base flows to river channels.
- ◆ The NITI Aayog report has laid down the road map for revival of springs in the region. The most important recommendation of the group is to launch a national programme on regeneration of springs in the Himalayan region. The programme will entail several short (first four years), medium (4-8 years) and long-term (beyond 8th year) actions.
- ◆ The Indian Himalaya Region (IHR), a part of Himalaya also has huge water resources in its lakes, river and glaciers, however yet under threat. It outlines the importance of planning for management of all the Himalaya's water resources. Lives in the mountains depend on springs. They are not just part of the heritage but the health of the rivers also depends on the health of the springs. It requires seriousness on the part of the government. As the springs are directly related to the health of catchment areas as well as forestation.



SEVEN IMPORTANT NATIONAL & INTERNATIONAL NEWS

NATIONAL

1. India's First Indigenous Anti-nuclear Medical Kit

Institute of Nuclear Medicine and Allied Sciences (INMAS) has developed India's first indigenous medical kit that may ensure protection from serious injuries and faster healing of wounds resulting from nuclear warfare or radioactive leakage. The kit has over 25 items, including radio-protectors that provide 80-90 per cent protection against radiation and nerve gas agents, bandages that absorb radiation as well as tablets and ointments. The kit has been developed for the armed, paramilitary and police forces only as they are the first ones likely to get exposed to radiation - be it during nuclear, chemical and biomedical (NCB) warfare or a rescue operation after a nuclear accident.

Component

- ◆ The contents include an advanced form of Prussian blue tablets, highly effective in incorporating Radio Cesium (Cs-137) and Radio Thallium, among the most feared radioisotopes in nuclear bombs that destroy human body cells.
- ◆ The kit has an Ethylenediaminetetraacetic acid (EDTA) injection that traps uranium in the guts and blood of victims during a nuclear accident or warfare.
- ◆ The kit also has Ca-EDTA respiratory fluid, which is the inhalation formula for chelation, or grabbing, of heavy metals and radioactive elements deposited in

lungs through inhalation at nuclear accident sites.

- ◆ The kit also has a radioactive urine/biofluid collector which is cost-effective, easy to store and can safely dispose of the urine of a person affected by radiation.
- ◆ The kit has anti-gamma ray skin ointment that protects and heals the radiation damage on the skin.
- ◆ Developed in India for the first time, it's a potent alternative to similar kits that were till now being procured from strategically advanced nations such as the US and Russia at much higher prices.

2. Apsara - U Reactor

Apsara, the first research reactor in Asia that worked nearly five decades before shutting down in 2009, is now operational as 'Apsara-U'. Apsara is a light water swimming pool-type reactor with a maximum power output of one megawatt thermal (MWT) and is utilized for various experiments, including neutron activation analysis, radiation damage studies, forensic research, neutron radiography, and shielding experiments.

- ◆ Under the Indo-US civil nuclear deal separation plan, the imported enriched fuel used in the Apsara reactor would be replaced by indigenous low enriched uranium fuel in line with current international practices. The reactor

was designed and built by India, but nuclear fuel was supplied from the United Kingdom.

- ◆ Using high neutron flux, the reactor will increase the indigenous production of radioisotopes for medical application by about 50% and will also be extensively used for research in nuclear physics, material science and radiation shielding.
- ◆ The production of radioisotopes in the country commenced with the commissioning of Apsara. Radioisotopes generated via power generation in nuclear reactors, research reactors, accelerators and spent fuel are used in agriculture,

healthcare, industry and even municipal waste management.

Apsara, in addition to being the first nuclear research reactor in India that reached criticality on August 4, 1956, was also the first in Asia. The one-megawatt Apsara research reactor that was inaugurated by then Prime Minister Jawaharlal Nehru was also a pool-type reactor.

Till date, the country has housed eight research reactors of which, only two – Dhruva and Kamini –are operational. The remaining six research reactors – Apsara, Cirrus, Purnima I, Purnima II, Purnima III and Zerlina have been decommissioned between 1973 and 2010.

3. HIV/AIDS Act, 2017

The Ministry of Health and Family Welfare has issued a notification for bringing the Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017 in force from 10th September, 2018. The Act, safeguards the rights of people living with HIV and affected by HIV. The provisions of the Act address HIV-related discrimination, strengthen the existing programme by bringing in legal accountability and establish formal mechanisms for inquiring into complaints and redressing grievances.

- ◆ The Act seeks to prevent and control the spread of HIV and AIDS, prohibits discrimination against persons with HIV and AIDS. The Act lists various grounds on which discrimination against HIV

positive persons and those living with them is prohibited. These include the denial, termination, discontinuation or unfair treatment with regard to: (i) employment, (ii) educational establishments, (iii) health care services, (iv) residing or renting property, (v) standing for public or private office and (vi) provision of insurance (unless based on actuarial studies).

- ◆ Under the law, no HIV-affected person can be subject to medical treatment, medical interventions or research without informed consent. Further, no HIV positive woman, who is pregnant, can be subjected to sterilisation or abortion without her consent.

- ◆ Every state has to appoint one or more Ombudsmen to inquire into violations of the provisions of the Act. Within 30 days of receiving a complaint, the Ombudsman is required to pass an order as he deems fit. Failing to comply with the orders of the Ombudsman attracts a penalty of up to Rs 10,000.
- ◆ India has the third largest HIV-infected population with an estimated 2 million people. The country aims to decrease new infections by 75 per cent between 2010 and 2020 and eliminate AIDS by 2030.

4. Guidelines of Supreme Court for Leprosy Patients

The Supreme Court said leprosy patients should be granted the 'Below Poverty Line' cards so that they can avail benefits under the Antyodaya Anna Yojana scheme. There should be no discrimination against leprosy patients and it should be ensured that they receive adequate attention and rehabilitation measures. The court pointed out that though the country was declared leprosy-free on December 31, 2005, the reality is "entirely different".

Key Points

- ◆ The Supreme Court referred to progress reports of the National Leprosy Eradication Programme (NLEP) to show that only 543 districts of the total 642 districts in the country had achieved the World Health Organisation-required prevalence rate of less than one case of leprosy for 10,000 persons.

- ◆ The underestimation of cases of leprosy and the declaration of elimination of leprosy has resulted in the integration of leprosy in general health services thereby leading to diversion of funds which would have otherwise been dedicated to eliminating leprosy.

- ◆ At present, majority of the populace afflicted with leprosy live as a marginalised section in society, deprived of even basic human rights. This manifestly results in violation of the fundamental right to equality and right to live with dignity.

- ◆ The court directed the government to be transparent about leprosy and conduct periodic national surveys to gauge its detection rate.

- ◆ Both the Centre and states should embark on "regular and sustainable massive awareness campaigns" to educate the public about the Multi Drug Therapy

(MDT) freely available at health centres to completely cure leprosy and dispel fear associated with the disease. The activities of the National Leprosy Eradication Programme (NLEP) must be given wide publicity.

- ◆ The court banned the use of "frightening" images of leprosy patients; instead it called for the use of "positive" photographs of those cured of leprosy in the campaigns.
- ◆ The Centre and states should ensure that leprosy patients, especially women, do not face any discrimination or isolation at both government and private hospitals. The government should also ensure that private and public schools do not discriminate against children hailing from leprosy-affected families. They should be given free education.

5. Animal Welfare Board of India

Minister of Women and Child Development has accused the Animal Welfare Board of India (AWBI) for not enforcing rules that specify how animals can be depicted in films and television shows. The board is India's apex body for ensuring that animals are not mistreated.

The Minister has listed "blatant errors" by the AWBI subcommittee that screens applications from film-makers. She alleged that the committee did not seek details of the species being used, which were required to determine whether they were protected. It had

even allowed their depiction in scenes that could promote cruelty to animals.

Background

In July, a TV show called "India's Next Top Model" was given approval for using animals and birds brought from outside the country, such as macaws and ball pythons, without verifying how they were sourced and whether requisite certificate was obtained for their import. While tigers, monkeys, lions, bears, panthers (including leopards) are banned from being exhibited under Section 22 of the

Prevention of Cruelty to Animals Act, AWBI has allowed their use on several occasions.

About AWBI

The Animal Welfare Board of India is a statutory advisory body on animal welfare laws and promotes animal welfare in the country. It was established in 1962 under Section 4 of the Prevention of Cruelty to Animals Act, 1960. It works to ensure that animal welfare laws in the country are followed and provides grants to animal welfare organisations. ■

6. Debt Recovery Tribunals

The government has doubled the monetary limit to Rs 20 lakh for filing loan recovery applications in the Debt Recovery Tribunals (DRT) by banks and financial institutions. The move is aimed at helping reduce pendency of cases in the 39 DRTs in the country. Banks and financial institutions' recovery of dues takes place on ongoing basis through legal mechanisms, which inter-alia includes Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, Recovery of Debts to Banks and Financial Institution (DRT) Act and Lok Adalats. The borrowers

of such loans continue to be liable for repayment even when the loans have been removed from the balance sheet of the bank(s) concerned.

To make the tribunals more effective and to facilitate fast disposal of debt recovery cases, the government has made several amendments in different laws, including the SARFAESI Act.

About DRTs

DRTs were established to facilitate the debt recovery involving banks and other financial institutions with their customers. DRTs were set up after the

passing of Recovery of Debts due to Banks and Financial Institutions Act (RDBFI), 1993. The Debts Recovery Tribunal (DRT) are fully empowered to pass comprehensive orders and can travel beyond the Civil procedure Code to render complete justice. DRT can hear cross suits, counter claims and allow set offs.

However, a DRT cannot hear claims of damages or deficiency of services or breach of contract or criminal negligence on the part of the lenders. In addition, a DRT cannot express an opinion beyond its domain, or the list pending before it. ■

7. Dairy Processing & Infrastructure Development Fund

In a bid to support the modernisation of the dairy sector in the country, the government has set up a Dairy Processing and Infrastructure Development Fund (DIDF) at the National Bank for Agriculture and Rural Development (NABARD), with a corpus of Rs 80.04 billion. The fund would be distributed to six different projects — Dakshina Kannada Milk Union (Udupi), Kolar-Chikballapur Milk Union (Kolar), Mysore Milk Union

(Mysore), Karnataka Milk Federation (Ramnagar), Karnataka Milk Union (Channarayana) and Ropar Milk Union (Ropar).

- ◆ The setting up of the fund comes at a time when the vision 2022 document pegs India's estimated milk production to touch 254.5 million tonnes, up almost 45 per cent from the current 176.35 million tonnes.

Significance

DIDF is aimed at bringing more dairy farmers into organised milk marketing through better price realisation, with milk processing capacity of cooperatives set to increase by 32 million litres per day and bulk milk chilling capacity by 14 million litres per day. The fund is expected to help create 40,000 direct employments and over 200,000 indirect employments in dairy marketing, distribution and retail chains. ■

INTERNATIONAL

1. 70% Chance of El Nino Event This Year

The World Meteorological Organisation forecast "a 70 percent chance of an El Nino developing by the end of this year. An El Nino event that could disrupt global weather is likely by the end of what has already been a hot year. El Nino is triggered by periodic warming in the Eastern Pacific Ocean which can trigger drought in some regions, heavy rain in others.

The United Nations sees increased odds of higher surface temperatures in most of Asia-Pacific, Europe, North America and Africa and along much of South America's coastline. Interior parts of South America, Greenland,

many South Pacific islands and some in the Caribbean were identified as possible exceptions.

About El Nino

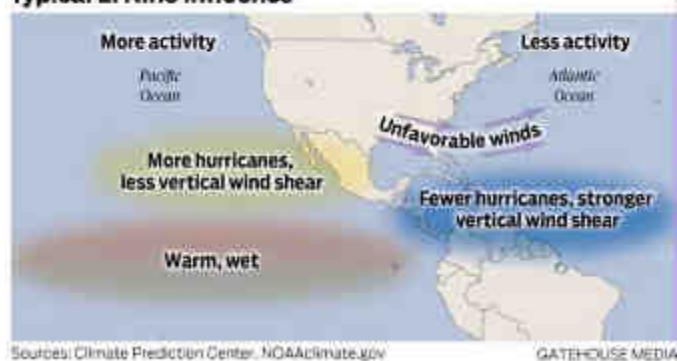
El Nino is a climatic cycle characterised by high air pressure in the Western Pacific and low air pressure in the Eastern. In normal conditions, strong trade winds travel from East to West across the tropical Pacific, pushing the warm surface waters towards the Western Pacific. The surface temperature could witness an increase of 8 degrees Celsius in Asian waters. At the same time, cooler waters rise up towards the surface in the Eastern

along the Equator and due to changes in air pressure, the surface water moves Eastwards to the coast of Northern South America. The central and Eastern Pacific regions warm up for over six months and result in an El Nino condition. The temperature of the water could rise up to 10 degrees Fahrenheit above normal. Warmer surface waters increase precipitation and bring above-normal rainfall in South America and droughts to Indonesia and Australia.

About La Nina

La Nina is a climate pattern that describes the cooling of surface ocean waters along the tropical West coast of South America. It is considered to have the opposite effect of El Nino. It brings greater than normal rainfall in Southeast Asia and Australia and causes drier-than-normal conditions in South America and the Gulf Coast of the United States. La Nina events sometimes follow El Nino events.

Typical El Niño Influence



Pacific on the coasts of Ecuador, Peru and Chile. This process called upwelling aids in the development of a rich ecosystem.

El Nino sets in when there is anomaly in the pattern. The Westward-blowing trade winds weaken

2. Comprehensive Nuclear Test Ban Treaty

UN chief Antonio Guterres recently reiterated his appeal to eight nations, including India and the US, to ratify the Comprehensive Nuclear-Test-Ban Treaty. He said that the failure to bring it into force undermines global efforts to ensure a world free of atomic weapons. Although more than 180 countries have signed the CTBT and mostly ratified it, the treaty can only enter into force after it is ratified by eight countries with nuclear

technology capacity, namely China, Egypt, India, Iran, Israel, North Korea, Pakistan and the United States.

About CTBT

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is the treaty banning all nuclear explosions - everywhere, by everyone. The Treaty was negotiated at the Conference on Disarmament in Geneva and adopted by the United

Nations General Assembly. It opened for signature on 24th September 1996. Since then, the treaty has reached near-universality. 182 countries have signed the treaty – the last country to do so was Trinidad and Tobago on 8th October 2009 which also ratified the treaty on 26th May 2010. 154 countries have ratified the treaty – most recently Ghana on 14th June 2011.

3. Kepler Space Telescope

NASA's low-on-fuel Kepler space telescope has awoken from yet another slumber and begun making science observations again. NASA has been closely monitoring the probe since it is expected to run out of fuel soon.

It was launched in March 2009, tasked with determining how common Earth-like planets are around the galaxy. The spacecraft initially studied more than 150,000 stars simultaneously, looking for tiny brightness dips caused by the passage of orbiting planets across these stars' faces. That work came to an end in May 2013, after the second of Kepler's four orientation-maintaining reaction

wheels failed and the spacecraft lost its superprecise pointing ability. Mission team members figured out a way to stabilize Kepler using sunlight pressure, however and the instrument embarked on a new mission called K2 in 2014. During K2, Kepler studied a variety of cosmic objects and events over a series of 80-day "campaigns."

◆ In early July of this year, mission team members put Kepler into a hibernation-like state, to ensure that the telescope would have enough fuel left to reorient itself toward Earth in early August and beam home data collected during Campaign 18.

◆ Kepler got all the Campaign 18 data down successfully — and then went back to sleep. Kepler has woken up again, starting Campaign 19 of its K2 mission on Aug. 29. But it's still unclear what the future holds for the spacecraft.

◆ The Kepler team is planning to collect as much science data as possible in its remaining time and beam it back to Earth before the loss of the fuel-powered thrusters that would make it difficult to aim the spacecraft for data transfer.

4. The Ocean Cleanup Trash Collector

The campaign to rid the world's oceans of plastic trash marked a turning point in last week as a giant, floating trash-collector steamed out of San Francisco on a mission to clean up the Great Pacific Garbage Patch. A few weeks and 1,000 nautical miles later, it will arrive at the Great Pacific Garbage Patch—the gyre where an estimated 1.8 trillion pieces of plastic float in the water—and begin the first experiment to clean it up.

The so-called Garbage Patch, filled with a plastic soup of discarded fishing nets and fragments of old water bottles and bags, is twice the size of Texas. Though plastic is found throughout

the ocean, swirling currents make concentrations higher in the area. A study suggested that there is 16 times more plastic in the patch than researchers previously believed. Some of the pieces of microplastic are too tiny to collect.

About Trash Collector

As the tube floats in the water, wind and waves will push it slightly faster than the currents moving below. The plastic underwater, moving at a slower speed, will accumulate next to the screen. The shape of the screen—slightly longer in the middle—will make the tube curve into U-shape, which also helps the

device catch more plastic. Every few months, a boat can come to the area and a team can remove the plastic, bringing it back to land to be recycled.

The concept for the project began six years ago, when 18-year-old Boyan Slat, at the time a student, learned about the difficulty of removing plastic from the ocean. Because plastic is everywhere and the pieces continually move with currents, it isn't possible to simply scoop it out with a net. Slat proposed using a barrier, instead, to gather plastic in one place, similar to the way that floating trash tends to collect at shorelines.

5. UN Interagency Task Force Award

National Health Mission Director Manoj Jhalani has been conferred the prestigious UN Interagency Task Force Award for his outstanding contribution towards the prevention and control of non-communicable diseases (NCDs). The award will be conferred on Jhalani during the third high-level meeting

of the UN General Assembly on the prevention and control of NCDs in New York on September 27.

◆ It is in recognition of government of India's efforts made in the field of prevention and control of NCDs. National programme to control NCDs has been scaled up by more

than eight times in the past four years and covers all the 36 states/UTs now.

◆ Free diagnosis, treatment, follow-up, referral and back referral have been integrated into the programme with an information technology platform developed

through a multi-stakeholder partnership. The intervention also forms the core of the government's ambitious healthcare scheme Ayushman Bharat.

The United Nations Interagency Task Force (UNIATF) on the Prevention

and Control of NCDs coordinates the activities of relevant UN organisations and other inter-governmental organisations to support governments to meet high-level commitments to respond to NCD epidemics worldwide. The commitments were made by

Heads of State and Government in the 2011 Political Declaration on NCDs.

The task force was established by the UN Secretary-General in June 2013 and placed under the leadership of World Health Organisation (WHO).

6. India and Bangladesh has Jointly Inaugurated Three Projects

India and Bangladesh has inaugurated the commencement of works for the Agartala-Akhaura rail project through video conferencing. Two other projects were also inaugurated which include the power supply to Bangladesh from West Bengal and an inland waterways transport over River Feni.

- ◆ The Agartala-Akhaura rail project was conceptualized in 2010. Later, India and Bangladesh signed a Memorandum of Understanding (MoU) on a couple of issues including the rail project in 2013. The rail link is expected to be

operational in 2019.

- ◆ The 15.054 km long rail project in West Tripura district is being constructed with an estimated expenditure of Rs 968 crores. It would connect Akhaura in Bangladesh with Tripura's capital city Agartala through Nischintapur in the Indo-Bangla border.
- ◆ Apart from Agartala-Akhaura rail project, a bridge is being constructed over River Feni which would connect Sabroom in South Tripura with Feni district of Bangladesh. Once operational,

Tripura would be only 66 km away from Chittagong port in Bangladesh.

- ◆ Haldia port of West Bengal is mostly used for transportation of goods and commodities to North-East India, which is 1,220 km away from Guwahati in Assam. The Tripura government hopes Agartala-Akhaura rail project and Feni bridge has the potential to turn the state into 'gateway for Northeast'.

7. The State of Food Security and Nutrition in the World - 2018

'The State of Food Security and Nutrition in the World - 2018' has been released by the Food and Agriculture Organization (FAO) of the United Nations, the World Health Organization, UNICEF and other groups.

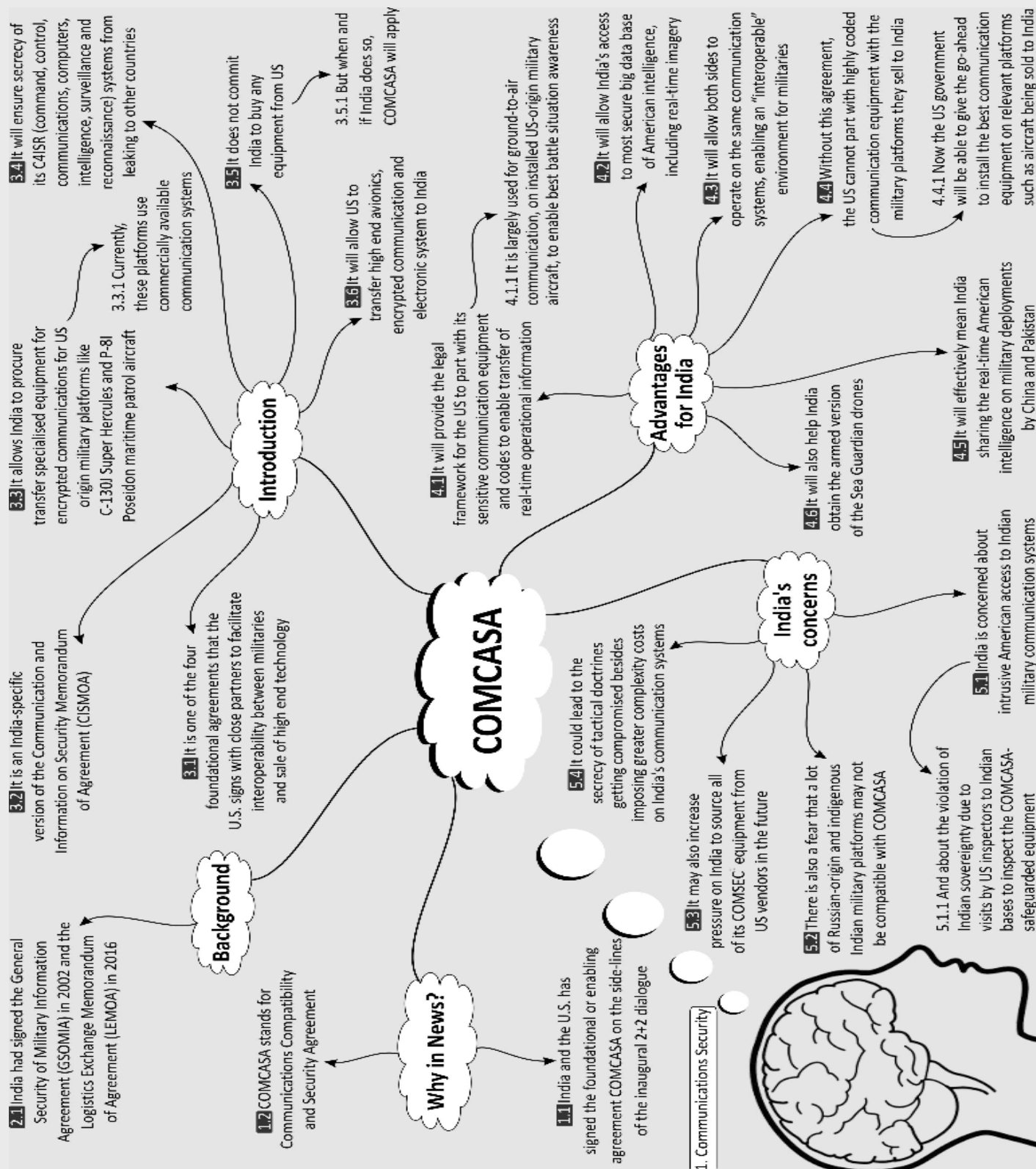
Key Highlights

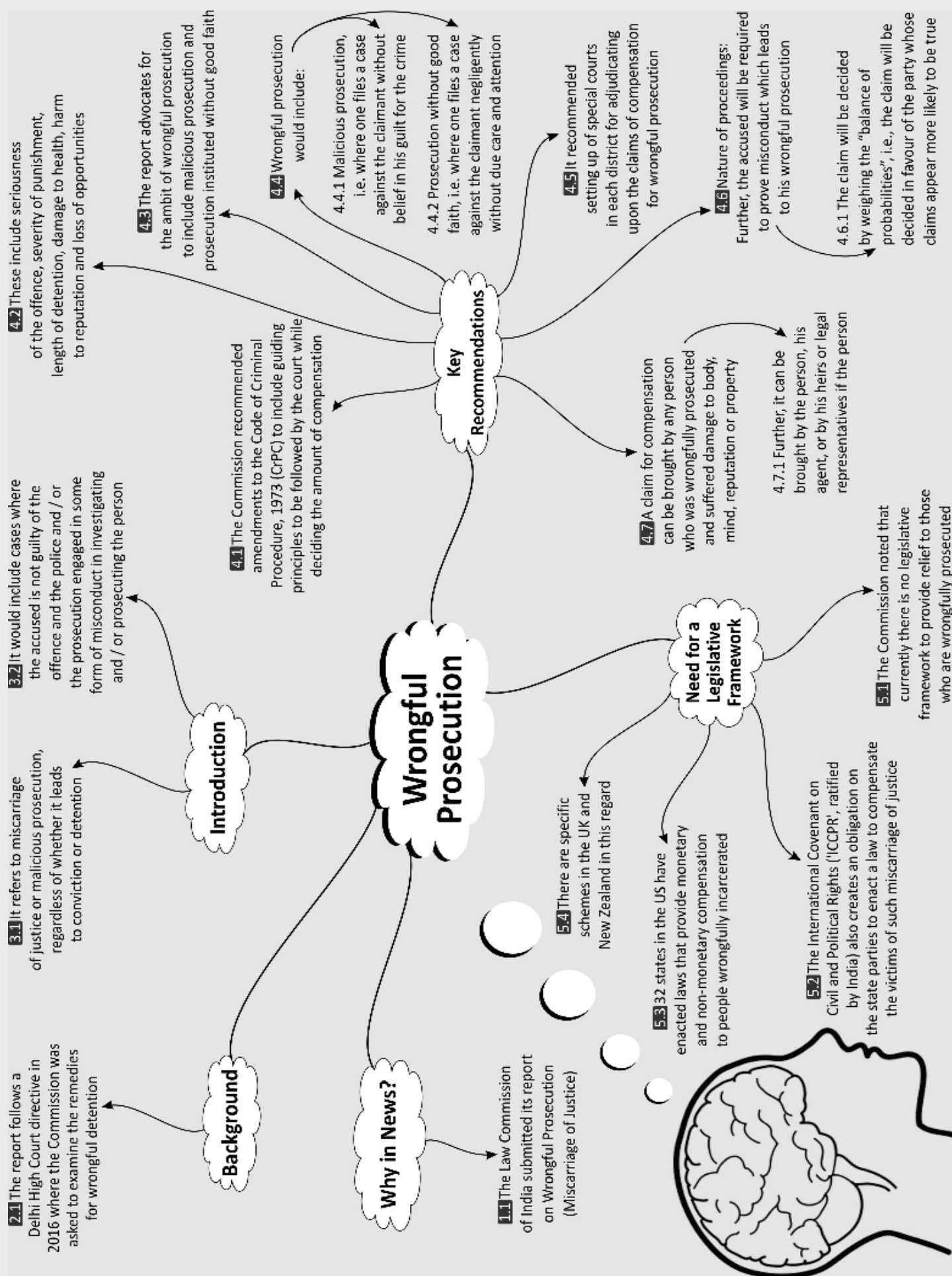
- ◆ The 151 million children under five years old, 22 percent of the World's total, are "stunted" by malnutrition; one in every ten children in Asia is described as "wasting," with weights well below what they should be given their heights; a staggering one in three women of child-bearing age suffers from anemia, in large measure from poor diet.

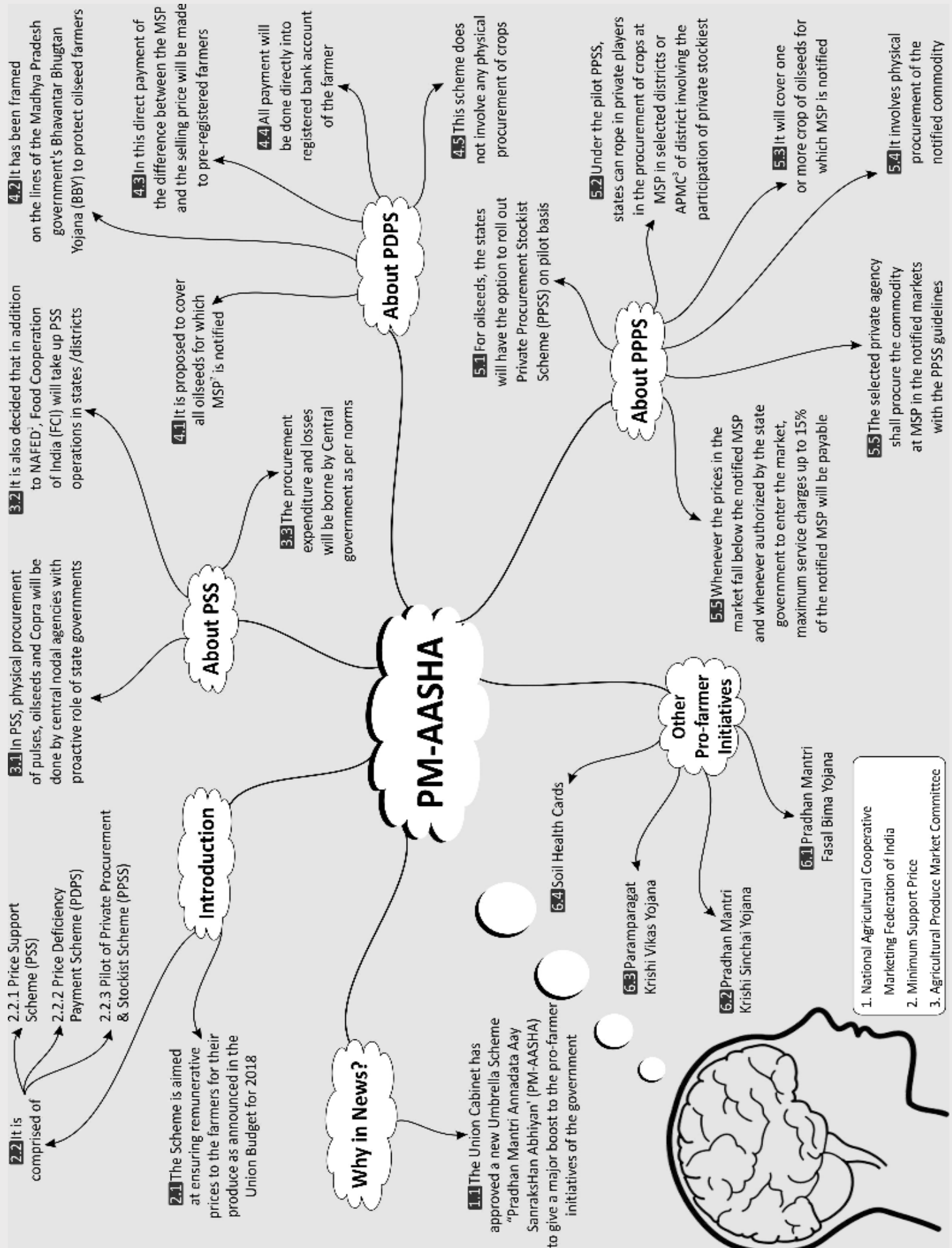
- ◆ The 821 million hungry people in the World include an estimated 515 million in Asia, 256.5 million in Africa, 39 million in Latin America and the Caribbean and perhaps 20 million in the rest of the World.
- ◆ The sharpest increases in malnutrition were in Africa and South America, as well as in the country of Yemen, on the Arabian Peninsula across the Red Sea from East Africa, which has been ravaged by war and a blockade imposed by Saudi Arabia and the United Arab Emirates with US backing. High levels of malnutrition were found in South Asia as well, but these were largely unchanged from 2016 to 2017.

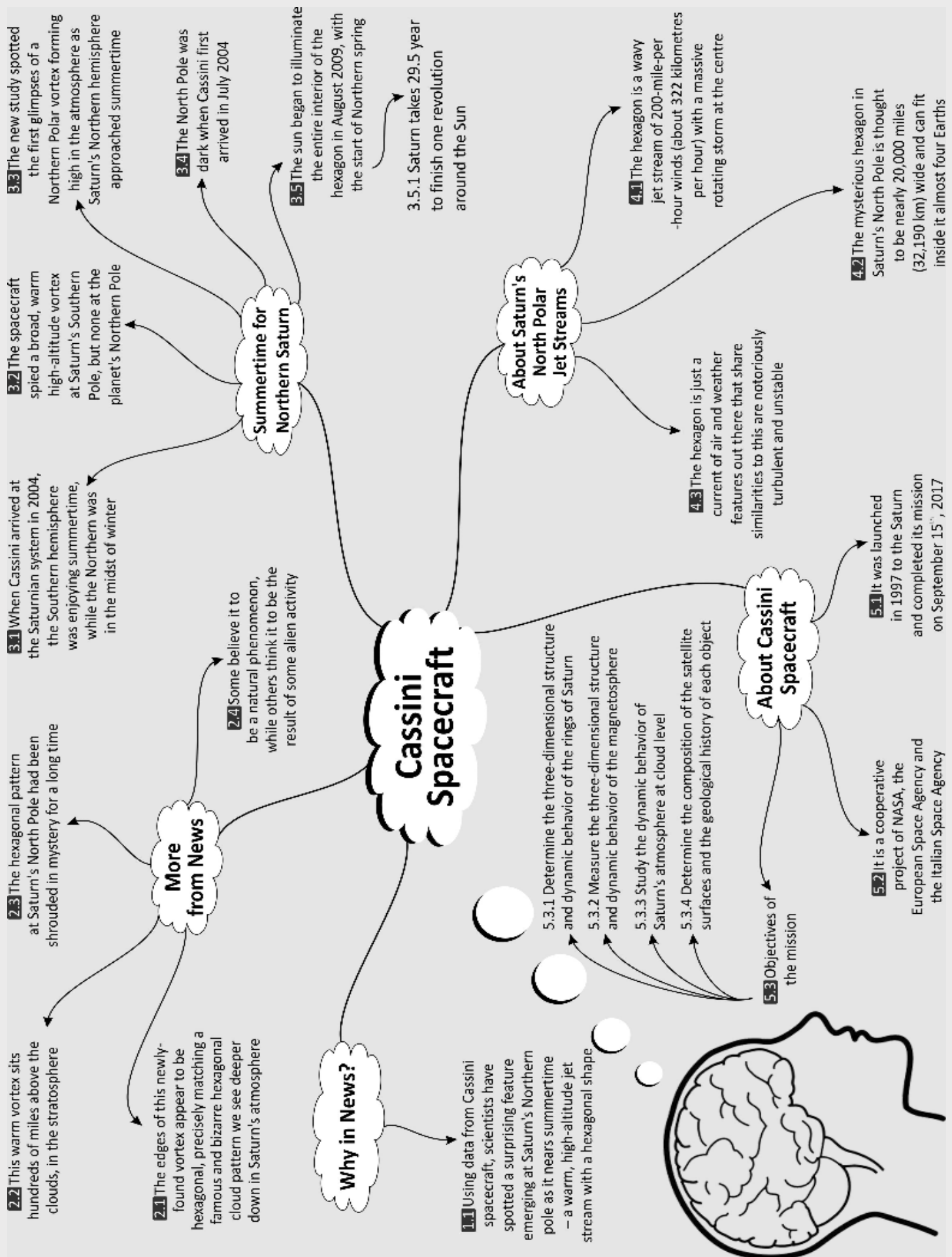
- ◆ Nutrition is an increasing concern, not just for the billions in Asia, Africa and Latin America, who constitute the majority of the World's population, but for the working class in the advanced capitalist countries, where living standards have been driven down for more than three decades.
- ◆ Some 13 percent of the World's adults, or 672 million, are medically obese, about one person in eight, with the highest rates by far in the United States. The lowest rates of obesity are in Africa and Asia, although rates are rapidly increasing.

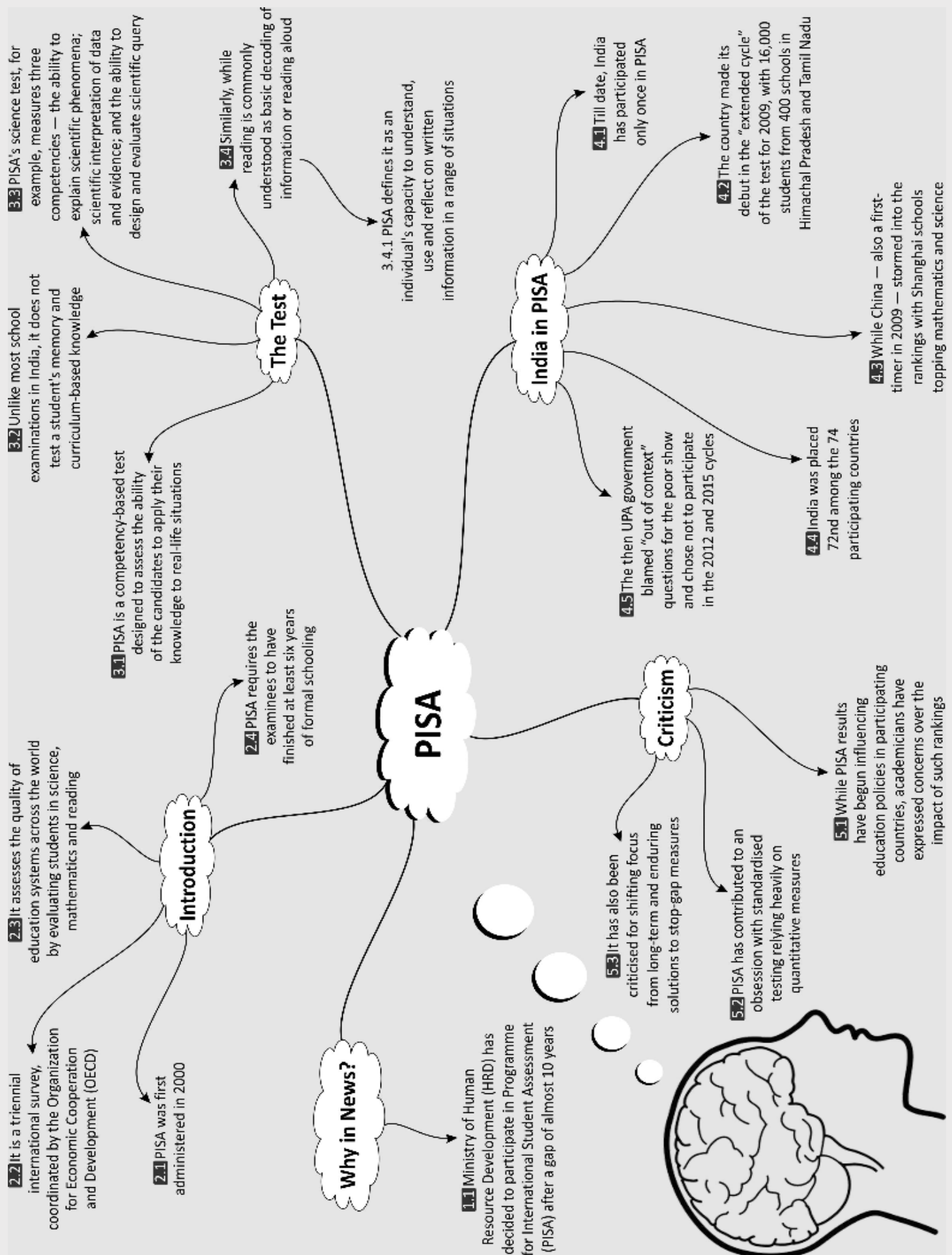
SEVEN BRAIN BOOSTERS

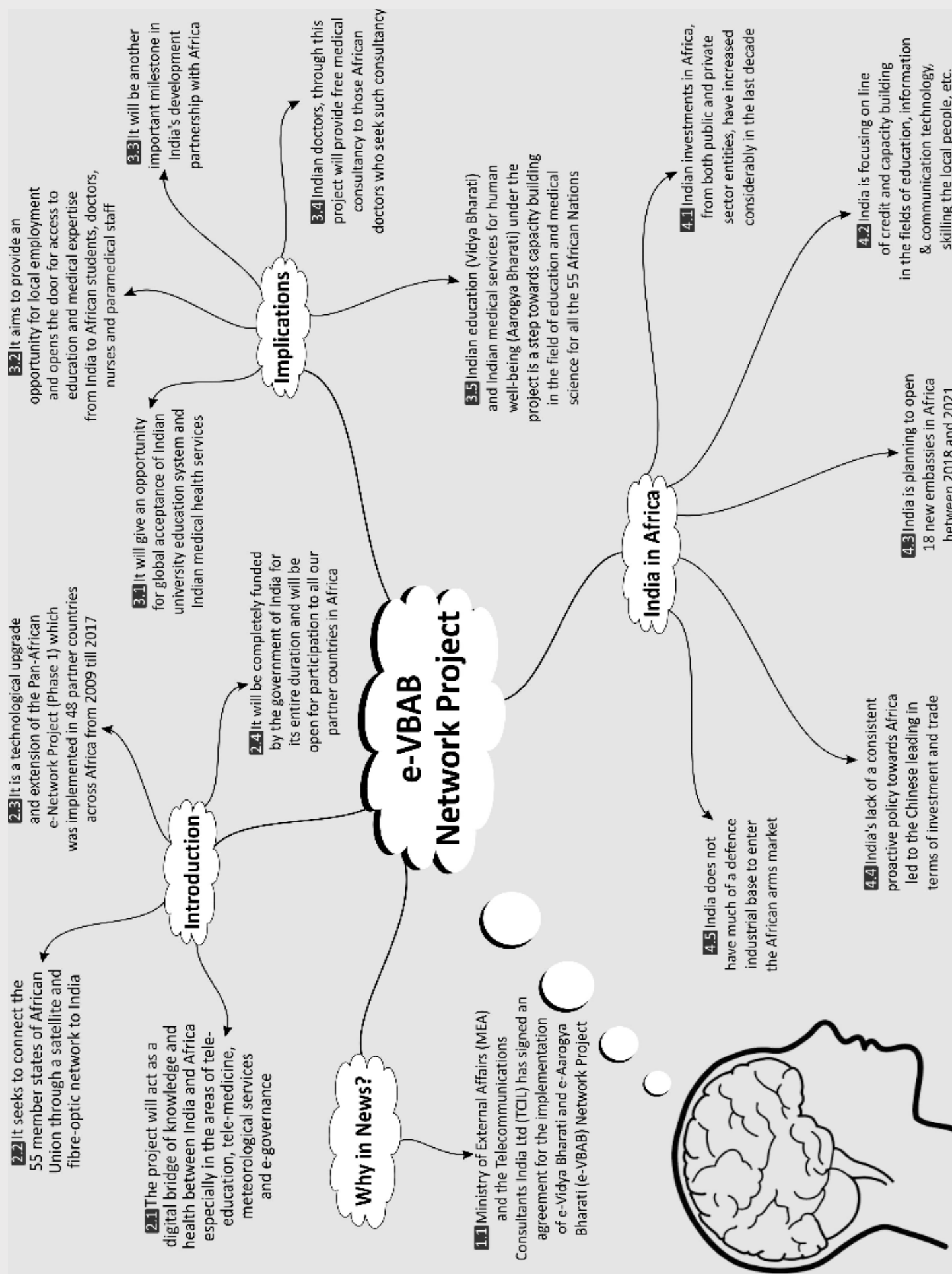


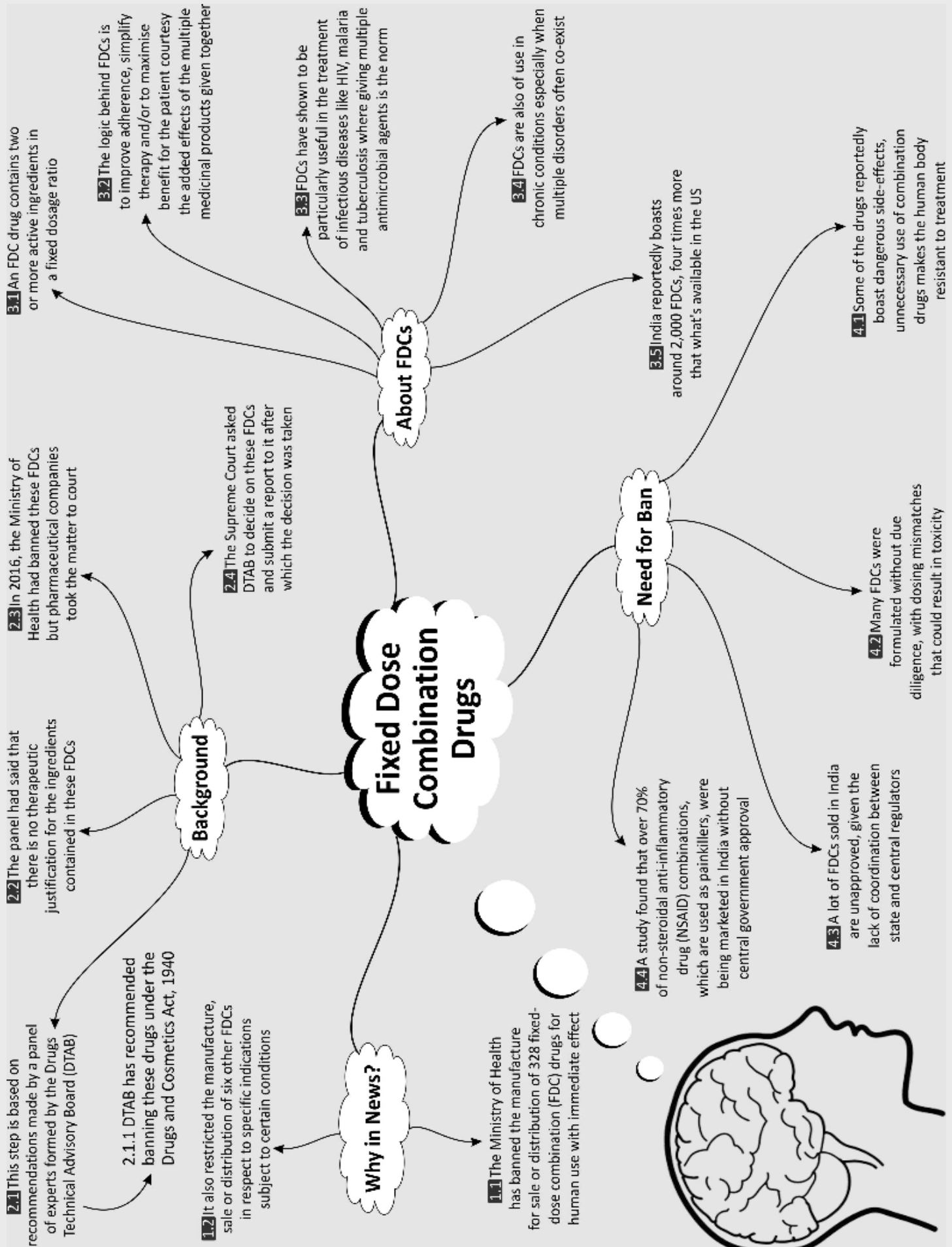












SEVEN MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

COMCASA

Q1. With reference to the COMCASA, consider the following statements:

1. It is one of the four foundational agreements that the U.S. signs with allies and close partners to facilitate interoperability between militaries and sale of high end technology.
2. It does commit India to buy defence equipment from the US.

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. COMCASA stands for Communications Compatibility and Security Agreement and is one of the four foundational agreements that the U.S. signs with allies and close partners to facilitate interoperability between militaries and sale of high end technology. India had signed the General Security of Military Information Agreement in 2002 and the Logistics Exchange Memorandum of Agreement in 2016. The last one remaining is the Basic Exchange and Cooperation Agreement for Geo-spatial Cooperation.

Statement 2 is not correct. COMCASA is a legal technology enabler that will facilitate our access to advanced defence systems. It does not commit us to buy any equipment from US. But when we buy any US-origin military platform, COMCASA will apply.

Wrongful Prosecution

Q2. Consider the following statements in respect of 'wrongful prosecution':

1. The ambit of wrongful prosecution would include malicious prosecutions and prosecutions instituted without good faith.
2. Law commission has recommended setting up of special courts in each district for adjudicating upon the claims of compensation for wrongful prosecution.

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. The Law Commission of India submitted its report on Wrongful Prosecution (Miscarriage of Justice). The report advocates for the ambit of wrongful prosecution to include malicious prosecution and prosecution instituted without good faith. Among other recommendations, it has recommended setting up of special courts in each district for adjudicating upon the claims of compensation for wrongful prosecution.

PM-AASHA

Q3. Consider the following statements in respect of 'Pradhan Mantri Annadata Aay Sanraks Han Abhiyan (PM-AASHA)':

1. It includes the mechanism of ensuring remunerative prices to the farmers and is comprised of Price Support Scheme, Price Deficiency Payment Scheme and Pilot of Private Procurement & Stockist Scheme.
2. Under the PPSS, physical procurement of oilseeds and pulses will be done by private players only.

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 Union Cabinet has approved a new Umbrella Scheme PM-AASHA to give a major boost to the pro-farmer initiatives of the government. It comprised of Price Support Scheme, Price Deficiency Payment Scheme and Pilot of Private Procurement & Stockist Scheme.

Statement 2 is not correct. The states will have an option to roll out Private Procurement Stockist Scheme on pilot basis in selected districts and Agricultural Produce Market Committee's (APMC) of district involving the participation of private stockiest. The pilot district and selected APMC(s) will cover one or more crop of oilseeds for which MSP is notified.

Cassini Spacecraft

Q4. Consider the following statements in respect of 'Cassini Mission':

1. Cassini was an unmanned spacecraft sent to the planet Saturn.
2. It ended its journey on 15th September, 2017.

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. After a remarkable journey of 20 years, NASA's lone mission to Saturn, the Cassini spacecraft, ended its journey on 15th September 2017 by disintegrating in the skies above the planet. It was launched on 15th October 1997. Cassini arrived at Saturn in 2004 and since then it has been sending myriad of information on the second-largest planet of the solar system.

PISA

Q5. Consider the following statements in respect of Programme for International Student Assessment:

1. It is a triennial international survey, coordinated by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
2. Ministry of Human Resource Development has decided to participate in PISA after a gap of almost 10 years.

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. PISA was first administered in 2000. It is a triennial international survey, coordinated by the Organization for Economic Cooperation and Development (OECD), to assess the quality of education systems across the world by evaluating students in science, mathematics and reading.

Statement 2 is correct. India made its debut in the "extended cycle" of the test for 2009, with 16,000 students from 400 schools in Himachal Pradesh and Tamil Nadu. Till date, India has participated only once in PISA. Now Ministry of Human Resource Development (HRD) has decided to participate in Programme for International Student Assessment (PISA) after a gap of almost 10 years.

e-VBAB Network Project

Q6. Consider the following statements in respect of e-VidyaBharati and e-AarogyaBharati (e-VBAB) Network Project:

1. It will be completely funded by the government of India for its entire duration and will be open for participation to all our partner countries in Africa.
2. It is a technological upgrade and extension of the Pan-African e-Network Project which was implemented across Africa.

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. Ministry of External Affairs and the Telecommunications Consultants India Ltd has signed an agreement for the implementation of e-VidyaBharati and e-AarogyaBharati (e-VBAB) Network Project. It is a technological upgrade and extension of the Pan-African e-Network Project (Phase 1) which was implemented in 48 partner countries across Africa from 2009 till 2017.

It will be completely funded by the government of India for its entire duration and will be open for participation to all our partner countries in Africa.

Fixed Dose Combination Drugs

Q7. With reference to the 'Fixed Dose Combination (FDC) Drugs', consider the following statements:

1. Indian Medical Association has banned the manufacture for sale or distribution of 328 FDC drugs for human use.
2. FDCs have shown to be particularly useful in the treatment of infectious diseases like HIV, malaria and tuberculosis.

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. The Ministry of Health has banned the manufacture for sale or distribution of 328 FDC drugs for human use with immediate effect.

Statement 2 is correct. An FDC drug contains two or more active ingredients in a fixed dosage ratio. FDCs have shown to be particularly useful in the treatment of infectious diseases like HIV and malaria.



SEVEN IMPORTANT FACTS FOR PRELIMS

1. United Nations recently decided to end the tuberculosis epidemic by which year?
–2030
2. The joint military exercise 'Yudh Abhyas-2018' was held between which two countries?
–India and the USA
3. The first ever bus service was launched between Nepal and which Indian state?
–Bihar
4. Which state government has banned the sale of e-cigarettes?
–Tamil Nadu
5. When the National Hindi Diwas is celebrated every year?
–14th September
6. Which Ministry has issued an advisory on the deadly online game 'Momo challenge'?
– Ministry of Women and Child Development
7. Who has appointed as the 46th chief justice of India?
–Justice Ranjan Gogoi



SEVEN IMPORTANT SPECIES

1. The Greater Mascarene Flying Fox (Pteropus Niger)

- ◆ It is the largest endemic mammal in Mauritius.
- ◆ It plays a critical role in maintaining the ecosystem of the islands as both a pollinator and seed disperser of the islands flora.
- ◆ In 2018, it moved from Vulnerable to Endangered (EN) category.
- ◆ Hunting and reduced legal protection are both predicted to hamper recovery of this species.
- ◆ Deforestation and the spread of invasive plant are expected to decrease the extent and quality of its remaining forest habitat.

2. Queen Alexandra's Birdwing (Ornithoptera Alexandrae)

- ◆ It is endemic to the island of New Guinea.
- ◆ It is the world's largest butterfly with a wingspan of up to 250mm.
- ◆ In 2018 it was reassessed, confirming that the species is still Endangered (EN).
- ◆ It is restricted to relatively pristine lowland forest and lower montane rainforest.
- ◆ Its habitat is being destroyed for income generating plantation crops such as oil palm, timber, cocoa and rubber.
- ◆ The species is also collected (illegally), but this is not as serious a threat to the species as compared to habitat loss.

3. Geomitra Grabhami

- ◆ It is endemic to Deserta Grande Island in the Madeira Archipelago.
- ◆ For many years this snail was searched for and not found, leading to the belief that the species was possibly extinct.
- ◆ However, in 2008 and again in 2013, live specimens were found on the Eastern coast of Deserta Gande, leading to the species moving from Critically Endangered (Possibly Extinct) to Critically Endangered category.
- ◆ Overgrazing by introduced goats was a threat for this species, however, this has now been greatly reduced.
- ◆ Now, the biggest threat to the very small known population is ground instability and landslides, as it is now only known from a single locality in a recently formed coastal plateau beneath steep cliffs.
- ◆ Predation by mice may also be a threat, along with the frequency of droughts.

4. Aquilaria Malaccensis

- ◆ In 2018, it is moved from Vulnerable to Critically Endangered (CR) category.
- ◆ This large evergreen tree has experienced a more than 80% reduction in population size over the past 150-300 years, driven largely by the demand for the fragrant resin (agarwood) and timber produced by this species.
- ◆ Resin from this tree has a wide range of users in manufacturing perfumed, religious items, incense and its timber is also used for building furniture.

- ◆ Demand for this species has resulted in large amounts of unregulated harvesting and trade of its resinous wood.
- ◆ Demand for agarwood is so high in some regions that specialists are employed full time to search for wild populations.
- ◆ This has resulted in the extinction of this tree in India and for it be considered almost extinct in East Kalimantan (Indonesia).

5. The Madagascar Banana

- ◆ It is endemic to Western Madagascar and is a relative and a potential gene donor to the commercially grown crop banana.
- ◆ Currently, it is only known from five mature plants in five locations, which are at risk from burning of forest boundary areas to make way for expanding agriculture.
- ◆ The extremely small population size resulted in this plant making its debut on the IUCN Red List in 2018, assessed as Critically Endangered (CR).
- ◆ With only minimal ex-situ conservation in place and no evidence of in-situ conservation occurring for this species.
- ◆ It is recommended that management and monitoring of populations is put in place to protect the wild population and the collection of germplasm material is undertaken to allow ex situ conservation.

6. The Grassland Earless Dragon

- ◆ It makes its home in the native temperate grasslands of Australia.
- ◆ Its habitat has been declining since European settlement in Australia over 200 hundred years ago.
- ◆ Just 1% of original native temperate grasslands exist today.
- ◆ The species has a range of threats, including loss, fragmentation and degradation

of habitat due to urban, industrial and agricultural development, change of grazing and fire regimes, introduced animals and ploughing.

- ◆ Together the ongoing decline, induced by these drivers has resulted in this species moving from Vulnerable to Endangered (EN) in the first update of 2018.

7. The Lesser Antillean Iguana (*Iguana delicatissima*)

- ◆ It is moved from Endangered to Critically Endangered (CR).
- ◆ This species has been extirpated from large swaths of its historic range due to habitat loss (agriculture and coastal infrastructure developments).
- ◆ Currently, the single largest threat is from the Common Green Iguana (*Iguana iguana*).
- ◆ Competitive displacement and hybridization with this invasive iguana has caused a population decline of more than 75% over the past three generations.
- ◆ Dominica is the last stronghold for this species because it is currently free from Common Green Iguanas.
- ◆ However in 2017, Dominica was hit by a major hurricane; recovery efforts are increasing transportation between islands, dramatically increasing the risk of accidental introduction of Common Green Iguanas and also increasing the intensity of iguana poaching as alternative food sources are sought.
- ◆ This accidental hunting pressure has caused a more than 10 fold reduction in iguana numbers in well studied coastal sites on Dominica.
- ◆ With the Common Green Iguana still spreading throughout the region, further declines are expected.



SEVEN PRACTICE QUESTIONS FOR MAIN EXAM

Answer each of the following questions in 200 words:

- Q1. Democracy does not merely mean voting rights for people; it means empowering people by granting them equality. Discuss it in the context of significant dip in India's record on civil liberties, personal and media integrity.
- Q2. As India is growing economically, India's female workforce participation is among the lowest in the world. Discuss why India's female workforce participation is so low.
- Q3. "Dissent is necessary not only for democracy- but also for the survival of the human race." Comment.
- Q4. Despite sustained efforts, India has not been significantly able to improve the nutritional status. Discuss what is needed a holistic drive to overcome the socio-cultural barriers and systemic hurdles to improve the health and nutrition outcomes of children and women.
- Q5. The relationship of India with its neighbours such as Nepal and Maldives has seen a number of setbacks in recent times. India needs to develop sharper instruments to coerce hostile leadership in the neighbourhood. Discuss.
- Q6. A well-balanced education with 'general', 'liberal' and 'occupational' components is necessary for holistic development. The concept of general education and specialised education, proceeding together needs to be adopted in India. Discuss.
- Q7. What do you understand by 'Right to be forgotten'? Right to be forgotten as proposed by data protection bill poses a threat to freedom of press, freedom of speech and citizen's right to Information. Critically discuss.

○○○



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