

NEWS ANALYSIS

For Civil Services Exams

Issue II

September 16-30, 2017

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Lead Article

Nitrogen Overload

Summary:

During the past century, the global consumption of nitrogen has seen a steady increase. In 1980, developed countries accounted for 70% of the world's total nitrogen consumption. By 2010, it was the developing countries which accounted for 70% of the global nitrogen consumption. India is no exception to this. India is the second-highest consumer of nitrogen in the world after China. According to the Food and Agriculture Organization, China's annual consumption of nitrogen is 44.97 million tonnes, while India consumes 16.48 million tonnes—four times more than Brazil's annual consumption of 4.25 million tonnes.

Indian Fertiliser Scenario 2014, an annual publication of the department of fertilisers under the Ministry of Chemicals and Fertilisers, states that the use of urea in the country has increased by more than 50% since 2000—the per hectare consumption of nitrogen is at least 100 kg in eight Indian states, including Bihar, Punjab, Haryana, Uttarakhand, Uttar Pradesh, undivided Andhra Pradesh, Tamil Nadu and Puducherry.

What's the concern?

The threats posed by nitrogen pollution are individually and collectively a huge problem for the global society today. The increasing rate of nitrogen use by humans has led to an imbalance in the nitrogen content in the environment.

- According to "Our Nutrient World", a 2013 report of the United Nations Environment Programme (UNEP), human-induced nitrogen inputs or fertilisers and associated emissions from agriculture, fossil fuel burning, sewage and industrial waste have directly or indirectly far surpassed natural emissions, causing nitrogen pollution that has reached alarming levels.

- Another study shows that the annual economic loss in the US due to energy wastage and damages to the environment and human health from nitrogen pollution is \$210 billion. "Our Nutrient World" estimated that the global

cost of damage from nitrogen could go up to US \$2,000 billion.

Nitrogen as an essential nutrient:

Nitrogen, which is a vital macronutrient for most plants, is the most abundant element in the atmosphere. A little over 78% of dry air on Earth is nitrogen. But atmospheric nitrogen, or dinitrogen, is unreactive and cannot be utilised by plants directly. Until the beginning of the 20th century, farmers depended on a natural process called nitrogen fixation for the conversion of atmospheric nitrogen into reactive nitrogen in the soil: nitrogen-fixing bacteria like rhizobia live symbiotically with leguminous plants, providing nitrogen to the plant and soil in the form of reactive compounds like ammonia and nitrate.

But the natural nitrogen cycle was inadequate to feed the growing population. Scientists Fritz Haber and Carl Bosch solved this problem by producing ammonia by combining atmospheric nitrogen with hydrogen gas at high temperature and pressure—known as the Haber-Bosch process. The Green Revolution, which was instrumental in establishing food security in the developing countries in the 1960s, was driven by artificial nitrogen-fixation. Today, about half of the world's population depends on this process for its nutrition.

How Nitrogen turned into pollutant from nutrient?

Nitrogen is an inert gas that's necessary for life. But we're changing it into forms that are harmful, overloading the environment with it, and throwing the natural nitrogen cycle out of whack. Nitrogen compounds running off farmland have led to water pollution problems around the world, while nitrogen emissions from industry, agriculture and vehicles make a big contribution to air pollution.

- Over 80% of the nitrogen in soil is not utilised by humans. While over four-fifths of the nitrogen is used to feed livestock, only about six per cent reaches humans in case of non-vegetarian diet, as compared to the 20% that reaches the plate of a vegetarian.

- Nitrogen becomes a pollutant when it escapes into the environment and reacts with other organic compounds. It is either released into the atmosphere, gets dissolved in water

sources such as rivers, lakes or groundwater, or remains in the soil. While it might lead to favourable growth of species that can utilise this nutrient, nitrogen as a pollutant is often detrimental to the environment and health.

- According to the World Health Organization, nitrate-contaminated drinking water can cause reduced blood function, cancer and endemic goiters. Surplus inputs of nitrogen compounds have been found to cause soil acidification. The lowering pH, as a result of the acidification, can lead to nutrient disorders and increased toxicity in plants. It may also affect natural soil decomposition.

Nitrogen pollution has a significant impact on the environment:

- It creates of harmful algal blooms and dead zones in our waterways and oceans; the algae produce toxins which are harmful to human and aquatic organisms (and indirectly affects fisheries and biodiversity in coastal areas).

- Contamination of drinking water. 10 million people in Europe are potentially exposed to drinking water with nitrate concentrations above recommended levels. This can have an adverse effect on human health.

- Food Security: Excessive nitrogen fertiliser application contributes to soil nutrient depletion. As the world needs to feed an ever growing population loss of arable land is major global problem.

- The release of Nitrous Oxide is essentially a greenhouse gas which is harmful to the environment.

What needs to be done now?

A simpler method of reducing nitrogen application is precision farming where small quantities of nitrogen are administered routinely instead of large doses applied uniformly over the field. Similarly, tablets and coated forms of nitrogen, when applied at the root level, release nutrients slowly. Supplemented with organic fertilisers and combined with optimal timing of application, sowing and watering, these methods have shown marked improvement over traditional efficiencies of nitrogen.

Conclusion:

Nitrogen is central to India's food production, but its use in our agriculture system has put us in a Catch-22 situation. We cannot produce enough food to feed the nation without

nitrogen, but at the same time we cannot keep introducing higher quantities of nitrogen because of its polluting effects. The challenge for the current century is to optimise the uses of nutrition while minimising the negative impacts. Nitrogen pollution is an issue of improper management rather than inability. The costs of abating nitrogen pollution would be much less than the benefits to health and environment. A 20% increase in the rate of efficiency would save an estimated 20 million tonnes of reactive nitrogen by 2020, which equates to an improvement in human health, biodiversity and climate worth US \$170 billion.

National Issues

Cabinet approves Revamped Khelo India Programme

The Union Cabinet has approved the revamped Khelo India programme at a cost of Rs.1,756 crore for the period 2017-18 to 2019-20. This marks a watershed moment in the history of Indian sports, as the Programme *aims at mainstreaming sport as a tool for individual development, community development, economic development and national development.*

- The revamped Khelo India Programme would impact the entire sports ecosystem, including infrastructure, community sports, talent identification, coaching for excellence, competition structure and sports economy.

Some of the salient features of the Programme include:

- An unprecedented Pan Indian Sports Scholarship scheme, which would cover 1,000 most talented young athletes each year across select sports disciplines.
- Each athlete selected under the scheme shall receive an annual scholarship worth Rs. 5.00 lakh for 8 consecutive years.
- This is the first time ever that a long-term athlete development pathway would be made available to gifted and talented youngsters to excel in competitive sports and will create a pool of highly competitive athletes who can compete to win at the world stage.

- The Programme aims to promote 20 universities across the country as hubs of sporting excellence, which would enable talented sports persons to pursue the dual pathway of education and competitive sports.
- The Programme also aims at creating an active population with healthy life-style.
- The Programme would cover about 200 million children in the age group of 10-18 under a massive national physical fitness drive, which will not only measure the physical fitness of all children in the age group, but also support their fitness related activities.
- This programme strives to promote “Sports for All” as well as “Sports for Excellence.”

Centre announces new PPP Policy to promote private investments in affordable housing

Central Government has announced a new PPP Policy for Affordable Housing that allows extending central assistance of up to Rs.2.50 lakh per each house to be built by private builders even on private lands besides opening up immense potential for private investments in affordable housing projects on government lands in urban areas.

- This policy seeks to assign risks among the government, developers and financial institutions, to those who can manage them the best besides leveraging under utilized and un-utilized private and public lands towards meeting the Housing for All target by 2022.

The policy gives eight PPP (Public Private Partnership) options for private sector to invest in affordable housing segment. Eight PPP options, including six for promoting affordable housing with private investments using government lands have been evolved after extensive consultations with States, promoter bodies and other stakeholders.

Two models using private lands:

The two PPP models for private investments in affordable housing on private lands include extending central assistance of about Rs.2.50 lakh per each house as interest subsidy on bank loans as upfront payment under the Credit Linked Subsidy Component (CLSS)

component of Pradhan Mantri Awas yojana (Urban). Under the second option, central assistance of Rs.1.50 lakh per each house to be built on private lands would be provided, in case the beneficiaries do not intend to take bank loans.

The six models using government lands are:

DBT Model: Under this option, private builders can design, build and transfer houses built on government lands to public authorities. Government land is to be allocated based on the least cost of construction. Payments to builders will be made by the public authority based on progress of project as per agreed upon milestones and buyers will pay to the Government.

Mixed Development Cross –subsidized Housing: Government land to be allotted based on number of affordable houses to be built on the plot offered to private builders, cross subsidizing this segment from revenues from high end house building or commercial development.

Annuity Based Subsidized Housing: Builders will invest against deferred annuity payments by the Government. Land allocation to builders is based on unit cost of construction.

Annuity-cum-Capital Grant Based Affordable Housing: Besides annuity payments, builders could be paid a share of project cost as upfront payment.

Direct Relationship Ownership Housing: As against government mediated payments to builders and transfer of houses to beneficiaries in the above four models, under this option, promoters will directly deal with buyers and recover costs. Allocation of public land is based on unit cost of construction.

Direct Relationship Rental Housing: Recovery of the costs by builders is through rental incomes from the houses built on government lands.

Under these six Government land based PPP models, beneficiaries can avail central assistance of Rs.1.00 to Rs.2.50 lakh per house as provisioned under different components of PMAY(Urban). Beneficiaries will be identified as per the norms of PMAY(Urban).

Way ahead:

Concerns have been expressed over the private sector so far not entering affordable housing segment despite huge scope for the same under

Pradhan Mantri Awas Yojana(Urban) and an enabling eco-system put in place through several concessions and incentives offered including the grant of infrastructure status for this segment. With the new policy in place, it is expected that the private sector will actively participate.

VASTRA 2017

The 6th edition of VASTRA i.e. “**VASTRA – An International Textile and Apparel Fair 2017**” (VASTRA – 2017) was recently inaugurated at Jaipur.

- Rajasthan State Industrial Development and Investment Corporation Ltd. (RIICO) is the organiser and Federation of Indian Chambers of Commerce and Industry (FICCI) is the co-organiser of the fair.

About VASTRA fair:

VASTRA, an all-encompassing trade fair and conference on Textiles and Apparel, presents a fusion of the finest and the latest in textile products – from fibre to fashion, services and technology. Crafted to create business opportunities, it aims at revitalizing existing business ties and forging of new business relations.

- It is the ideal platform to enter JVs, strategic alliances and partnerships worldwide, launch new products, as well as, harness new locations for setting up businesses in India. It is also a place for disseminating technology and interacting with R&D Labs and experts for solution in technology and latest trends.
- VASTRA, since its inception in 2012 has created a space for itself in the calendar of international exhibitions on textiles and apparel.

Deendayal Hastkala Sankul

Deendayal Hastkala Sankul – a trade facilitation centre for handicrafts – was recently inaugurated at Varanasi.

About deendayal Hastkala Sankul:

The Sankul will facilitate the weavers/artisans/exporters in promotion of handlooms/handicrafts in both domestic and international markets. The Crafts Museum in the Sankul will preserve the traditional handloom/ handicrafts products of Varanasi and showcase the handloom & handicraft products, which will be an inspiration for the new generation, scholars,

designers and tourists.

Background:

The Finance Minister in the Budget 2014-15 had announced setting up of a Trade Facilitation Centre and a Crafts Museum to develop and promote handlooms, handicrafts and silk products of Varanasi and to provide necessary help to weavers, artisans and entrepreneurs of Varanasi in strengthening their marketing activities in domestic as well as international markets and in carrying forward the rich tradition of handlooms at Varanasi.

Benefits of this move:

- Promotes rich traditional craft of ancient Varanasi.
- Provides enabling platform and environment to showcase Indian handloom and handicrafts.
- Provides supply chain linkages to domestic and foreign buyers.
- Give thrust to domestic and international tourism.
- Give boost to trade and economic development of Varanasi as well as eastern parts of the country.

SATH- Sustainable Action for Transforming Human Capital

SATH- Sustainable Action for Transforming Human Capital, a joint initiative of Government of Assam and NITI Aayog, has been launched.

Aim of the programme: The programme aims to provide structured support to Assam in identifying key health priorities and implement the solutions towards transforming the health and improving the well-being of people of Assam.

Background:

The SATH program embodies the philosophy of co-operative federalism. NITI Aayog selected the three states through a three stage challenge-process – expression of interest, presentations by the states and assessment of commitment to health sector reforms. Finally, three states: Assam, Uttar Pradesh and Karnataka were chosen based on objective assessment criteria affecting the potential for impact and likelihood of success. A consortium of reputed technical consultants are closely working with NITI Aayog and the states to conceptualize the initiatives and provide

support in the implementation process.

About SATH programme:

Furthering the agenda for cooperative federalism, NITI Aayog has launched SATH, a program providing ‘Sustainable Action for Transforming Human capital’ with the State Governments. The vision of the program is to initiate transformation in the education and health sectors. The program addresses the need expressed by many states for technical support from NITI.

- SATH aims to identify and build three future ‘role model’ states for health systems.
- NITI will work in close collaboration with their state machinery to design a robust roadmap of intervention, develop a program governance structure, set up monitoring and tracking mechanisms, hand-hold state institutions through the execution stage and provide support on a range of institutional measures to achieve the end objectives.
- The program will be implemented by NITI along with McKinsey & Company and IPE Global consortium, who were selected through a competitive bidding process.

Bharat ke Kaushalzaade

Rural Skills Division, Ministry of Rural Development has organized ‘**Bharat ke Kaushalzaade**’, an event honouring beneficiaries of its key skilling programmes, on the eve of Antyodaya Diwas 2017.

The event *aims to celebrate and honour beneficiaries from both of MoRD’s flagship skill development programmes i.e. Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) and Rural Self Employment Training Institutes (RSETI).*

‘Kaushal Panjee’:

The event also witnessed the mobilization platform launch, branded ‘**Kaushal Panjee**’ (Skill Register).

- It aims to be citizen centric end-to-end solution to aid mobilization of candidates for RSETIs and DDU-GKY.
- It facilitates mobilization of candidates through Self Help Group members, Gram Panchayat Functionaries, Block Officials, CSCs and directly by the candidate.
- RSETIs and DDU-GKY Partners can access the Kaushal Panjee to connect with the mobilized rural youth.
- Kaushal Panjee is connected to the Social

Economic Caste Census (SECC 2011) which will help the States plan and target their mobilizations based on the socio-economic profile of households in their State.

About DDU GKY:

The Ministry of Rural Development (MoRD) announced the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) Antyodaya Diwas, on 25th September 2014. DDU-GKY is a part of **the National Rural Livelihood Mission (NRLM)**, tasked with the dual objectives of adding diversity to the incomes of rural poor families and cater to the career aspirations of rural youth.

DDU-GKY is uniquely **focused on rural youth between the ages of 15 and 35 years** from poor families. As a part of the Skill India campaign, it plays an instrumental role in supporting the social and economic programs of the government like the Make In India, Digital India, Smart Cities and Start-Up India, Stand-Up India campaigns.

PM launches Pradhan Mantri Sahaj Bijli Har Ghar Yojana “Saubhagya”

A new scheme called **Pradhan Mantri Sahaj Bijli Har Ghar Yojana –“Saubhagya”** has been launched to ensure electrification of all willing households in the country in rural as well as urban areas.

Key facts:

- The total outlay of the project is Rs. 16, 320 crore while the Gross Budgetary Support (GBS) is Rs. 12,320 crore.
- The States and Union Territories are required to complete the works of household electrification by the 31st of December 2018.
- The beneficiaries for free electricity connections would be identified using Socio Economic and Caste Census (SECC) 2011 data. However, un-electrified households not covered under the SECC data would also be provided electricity connections under the scheme on payment of Rs. 500 which shall be recovered by DISCOMs in 10 instalments through electricity bill.
- **The Rural Electrification Corporation Limited (REC) will remain the nodal agency** for the operationalisation of the scheme throughout the country.

The expected outcome of the Scheme is as follows:

- Environmental upgradation by substitution of Kerosene for lighting purposes.
- Improvement education services.
- Better health services.
- Enhanced connectivity through radio, television, mobiles, etc.
- Increased economic activities and jobs.
- Improved quality of life especially for women.

‘PENCIL’ Portal On Child Labour Elimination

The government has launched a web portal called ‘PENCIL’ for effective implementation of the National Child Labour Project, (NCLP).

About PENCIL portal:

- PENCIL (Platform for Effective Enforcement for No Child Labour) — an electronic platform for no child labour in the country is being developed by the Labour Ministry.
- PENCIL portal has five components — Child Tracking System, Complaint Corner, State Government, National Child Labour Project and Convergence.

About NCLP:

The National Child Labour Project (NCLP) Scheme initiated in the in 1988 to rehabilitate working children by eliminating all forms of child labour through identification and withdrawal of all children in the Project Area from child labour, Preparing children withdrawn from work for mainstream education along with vocational training. NCLP has been revised expanded and aligned to the new legislative provisions.

The legislative changes have been accompanied by creation of additional institutional mechanisms at the district, state and national level for identification and rescue, along with revamping the rehabilitation scheme and a centralized database for case to case monitoring and accountability.

Should Bengaluru get a directly-elected mayor with a five-year term and more powers?

Bengaluru got its 51st mayor recently. However, despite this ‘worshipful’ post of the first citizen of the city having been in existence

for more than half a century, the role of the mayor of Bengaluru has largely remained a ceremonial one. The Kasturirangan committee report on Bengaluru’s urban governance released in 2008, had termed the post as “a one-year wonder intended only for ceremonial purpose.”

Time and again there has been talk about revisiting the mayor’s role. The latest was in 2015, when the BBMP Restructuring Committee recommended a directly-elected mayor with a five-year term.

Need for directly elected mayors:

- While there are multiple reasons for India’s urban woes, one of the underlying problems is the absence of powerful and politically accountable leadership in the city. Our cities have a weak and fragmented institutional architecture in which multiple agencies with different bosses pull the strings of city administration.
- Currently, the head of the municipal corporation, the mayor, is merely a ceremonial authority and executive decisions are carried out by the municipal commissioner appointed by the state government.
- An elected mayor with substantial powers of his own not only provides a single point for negotiations with outside agencies and investors but also ensures greater coordination among the different city departments and promotes decisive decision making.
- A popularly elected mayor with a fixed tenure also offers more stability in governance as the person is not dependent on the elected members of the council or on the local or state level political leadership for his survival in office. A stable leadership can also afford to roll out long term plans that will ensure major changes in the cities political and economic landscape.

The concept should face the following challenges before it becomes a reality:

- State governments do not wish to delegate more authority to city-level institutions. Often, urban resources are transferred to rural areas in the name of development. Even if the mayor is directly elected, the state governments can refuse to devolve power and resources, effectively reducing

him to a figurehead.

- Municipal commissioner also, sometimes, becomes hurdle. Even if some powers are delegated to the municipality, the state governments have in place municipal commissioners to perform the executive functions, again cutting the mayor to size, the nature of mayoral election notwithstanding.
- If a directly elected mayor belongs to a party in minority in the municipality, it becomes difficult to get other municipality members on board in taking decisions. This was witnessed in Himachal Pradesh, which ultimately led to the scrapping of this system.
- Also, a mayor executing projects will tend to gain popularity at the expense of the local legislator whose job is to legislate and scrutinise the performance of the executive. A legislator will always see the directly elected and empowered mayor as a potential future rival and will do everything in his command to undercut his authority.

It is also widely felt that elected mayors may blur the lines between the three tiers of government: the Union, the states and the local self governments

Govt data shows India's infant mortality rate has declined 8%

The latest data from Sample Registration Survey (SRS) show that India's infant mortality rate (IMR) declined from 37 per 1000 live births in 2015 to 34 per 1000 live births in 2016. However, there is still a long way to go to meet the 2019 target of IMR 28 per 1000 live births.

What is IMR?

Infant mortality rate (IMR) is the number of deaths per 1,000 live births of children under one year of age.

Key facts:

- There has been a significant 8% decline in country's IMR, even though more infants are dying in the rural areas. IMR in rural India is 38 per 1000 live births as compared to 23 in the urban areas.
- The data shows 90,000 fewer infants died in 2016 as compared to 2015. The total number of estimated infant deaths has come down from 9.3 lakh in 2015 to 8.4 lakh in 2016.

- What is more encouraging is that the gender gap in India for child survival is reducing steadily. The data shows that the gender difference between female and male IMR has reduced to below 10%.
- The government's family planning programme seems to be going in the right direction, with the data showing a major drop in number of estimated births in a year which has come down to below 2.5 crore from 2.6 crore.

Significance of these findings:

The results signify that the strategic approach of the government has started yielding dividends and the efforts of focusing on low performing states is paying off. The countrywide efforts to increase the health service coverage through various initiatives, including strengthening of service delivery and drugs and diagnostics have worked well.

Government unveils rules to tackle on-board disruptive and unruly behaviour by passengers

The Ministry of Civil Aviation has unveiled rules to tackle on-board disruptive and unruly behaviour by passengers. The DGCA has revised the relevant sections of the Civil Aviation Requirement to bring in a deterrent for passengers who engage in unruly behaviour on board aircrafts. The revision has been done in accordance with the provisions of **Tokyo Convention 1963**.

The focus has been on ensuring on board safety while maintaining an element of balance and safeguarding the interest of passengers, cabin crew and the airlines.

The new rules are as follows:

No- Fly list: The new rules will allow for the formation of a national, No Fly List of unruly passengers. The promulgation of the No – Fly List in India is unique and first-of-its-kind in the world. The concept of the No-Fly List is based on the concern for safety of passengers, crew and the aircraft, and not just on security threat.

Applicability: The revised CAR deals with unruly behavior of passenger on-board aircrafts. Unruly behavior of passengers at airport premises will be dealt with by relevant security agencies under applicable penal provisions. The revised CAR will be applicable for all Indian

operators engaged in scheduled and non-scheduled air transport services, both domestic and international carriage of passengers. The CAR would also be applicable to foreign carriers subject to compliance of Tokyo Convention 1963.

What amounts to unruly behaviour? The revised CAR defines three categories of unruly behavior – Level 1 refers to behaviour that is verbally unruly, and calls for debarment upto 3 months; Level 2 indicates physical unruliness and can lead to the passenger being debarred from flying for upto 6 months and Level 3 indicates life-threatening behaviour where the debarment would be for a minimum of 2 years.

Internal committee: The complaint of unruly behavior would need to be filed by the pilot-in-command. These complaints will be probed by an internal committee to be set up by the airline. As per the CAR provisions, the internal committee will have to decide the matter within 30 days, and also specify the duration of ban on the unruly passenger. During the period of pendency of the enquiry the concerned airline may impose a ban on the said passenger. For every subsequent offence, the ban will be twice the period of previous ban.

Composition of the internal committee: The internal committee will have retired District & Sessions Judge as Chairman and representatives from a different scheduled airline, passengers' association/consumer association/retired officer of Consumer Dispute Redressal Forum as Members.

Appeal: The revised CAR also contains appeal provisions against the ban. Aggrieved persons (other than those identified as security threat by MHA) may appeal within 60 days from the date of issue of order to the Appellate Committee constituted by MoCA comprising of retired Judge of a High Court of India as Chairman and representatives of passengers association/consumer association/ retired officer of Consumer Dispute Redressal Forum and airlines as Members.

Background:

The Tokyo Convention, which took effect in 1969, governs criminal offenses and other acts committed on board aircraft that jeopardize the safety of flights.

Rajiv Mehrishi appointed new CAG

of India

Rajiv Mehrishi has taken charge as the **13th Comptroller and Auditor General of India (CAG)**. He has a three-year tenure till August 2020.

About CAG:

The Comptroller and Auditor General (CAG) of India is an authority, established by the **Constitution of India under article 148.**

- **CAG audits all receipts and expenditure of the Government of India and the state governments**, including those of bodies and authorities substantially financed by the government.
- **The CAG is also the external auditor of Government-owned corporations and conducts supplementary audit of government companies**, i.e., any non-banking/ non-insurance company in which the state and Union governments have an equity share of at least 51% or subsidiary companies of existing government companies.
- **The reports of the CAG are taken into consideration by the Public Accounts Committees (PACs) and Committees on Public Undertakings (COPUs)**, which are special committees in the Parliament of India and the state legislatures.
- **The CAG enjoys the same status as a judge of Supreme Court of India** in Indian order of precedence.

Appointment: CAG is appointed by the President of India following a recommendation by the Prime Minister. On appointment, he/she has to make an oath or affirmation before the President of India.

Removal: The CAG can be removed only on an address from both house of parliament on the ground of proved misbehaviour or incapacity. The CAG vacates the office on attaining the age of 65 years age even without completing the 6 years term.

“Dairy Processing & Infrastructure Development Fund”

The Cabinet Committee on Economic Affairs has approved a **Dairy Processing & Infrastructure Development Fund” (DIDF)** with an outlay of Rs 10,881 crore during the period from 2017-18 to 2028-29.

The major activities of DIDF:

The project will focus on building an efficient milk procurement system by setting up of chilling infrastructure & installation of electronic milk adulteration testing equipment, creation/ modernization/ expansion of processing infrastructure and manufacturing facilities for Value Added Products for the Milk Unions/ Milk Producer Companies.

Management of DIDF:

The project will be **implemented by National Dairy Development Board (NDDB) and National Dairy Development Cooperation (NCDC)** directly through the End Borrowers such as Milk Unions, State Dairy Federations, Multi-state Milk Cooperatives, Milk Producer Companies and NDDB subsidiaries meeting the eligibility criteria under the project.

- An Implementation and Monitoring Cell (IMC) located at NDDB, Anand, will manage the implementation and monitoring of day-to-day project activities.
- The end borrowers will get the loan @ 6.5% per annum. The period of repayment will be 10 years with initial two years moratorium.
- The respective State Government will be the guarantor of loan repayment. Also for the project sanctioned if the end user is not able to contribute its share; State Government will contribute the same.

Benefits from DIDF:

With this investment, 95,00,000 farmers in about 50,000 villages would be benefitted. Additional Milk processing capacity of 126 lakh litre per day, milk drying capacity of 210 MT per day, milk chilling capacity of 140 lakh litre per day, installation of 28000 Bulk Milk Coolers (BMCs) along with electronic milk adulteration testing equipment and value added products manufacturing capacity of 59.78 lakh litre per day of milk equivalent shall be created.

Employment Generation Potential:

The implementation of DIDF scheme will generate direct and indirect employment opportunities for skilled, semi-skilled and unskilled manpower.

- **Direct employment opportunities** for about 40,000 people will be created under the scheme through project activities like expansion & modernisation of existing milk processing facilities, setting up of new processing plants, establishment of

manufacturing facilities for value added products and setting up of Bulk Milk Coolers (BMCs) at village level.

- About 2 lakh **indirect employment opportunities** will be created on account of expansion of milk and milk product marketing operations from existing Tier I, II & III to Tier IV, V & VI cities/towns etc. This will lead to deployment of more marketing staff by Milk Cooperatives, appointment of distributors and opening of additional milk booths/retail outlets in urban/rural locations.
- With the increase in milk procurement operations of the Milk Cooperatives, **there would be generation of additional manpower employment for supervision of increased milk procurement operations, transportation of milk from villages to processing units, and increased input delivery services** like Artificial Insemination (AI) services, Veterinary Services, etc.

Chennai-Vladivostok sea route to make it near East

Aiming to put in place a key maritime route connecting India with Northeast Asia and Western Pacific region Delhi is contemplating to put in **place a major connectivity initiative — direct shipping link between Chennai and Vladivostok** amid China's ambitious Maritime Silk Route (MSR) connecting Asia with Africa.

Key facts:

- This proposed maritime route which could be transformed into a corridor could juxtapose with Indo-Japan Pacific to Indian Ocean Corridor amid Beijing's OBOR of which MSR is a part – virtually connecting entire SE Asia through road, shipping and rail links.
- This shipping link would enable to transfer cargo between Chennai and Vladivostok in 24 days in comparison to over 40 days currently taken to transport goods from India to Far East Russia via Europe, according to experts on the subject.

Background:

India was the first country to establish a resident Consulate in Vladivostok in 1992. Current engagement of India with the region is limited to isolated pockets such as the Irkut Corporation

in Irkutsk where the Mig and Sukhoi aircraft are built and over USD 6 billion worth of investments by ONGC Videsh Limited in the Sakhalin 1 project.

- The region has a wealth of natural resources such as land, timber, mineral and other resources like tin, gold, diamonds and oil and natural gas. The Russian government has announced several initiatives to attract investments in the region, including an agricultural SEZ, the Vladivostok Free Port Project and also invites participation in the timber industry, mining of the huge mineral resources (coal & diamonds) and precious metal deposits (gold, platinum, tin and tungsten).
- Opportunities for collaboration for Indian companies include in such sectors as agriculture, mining, port development and infrastructure, diamond processing, agro-processing.

Cabinet approves introduction of the Payment of Gratuity (Amendment) Bill, 2017 in the Parliament

The Union Cabinet has given its approval for introduction of the **Payment of Gratuity (Amendment) Bill, 2017** in the Parliament.

Key facts:

- The move aims at providing social security to workmen after retirement, whether it is because of rules of superannuation, or physical disablement or impairment of vital parts of the body.
- The Amendment will increase the maximum limit of gratuity of employees, in the private sector and in Public Sector Undertakings/ Autonomous Organizations under Government who are not covered under CCS (Pension) Rules, at par with Central Government employees.

Background:

The present upper ceiling on gratuity amount under the Act is Rs. 10 Lakh. The provisions for Central Government employees under Central Civil Services (Pension) Rules, 1972 with regard to gratuity are also similar. Before implementation of 7th Central Pay Commission, the ceiling under CCS (Pension) Rules, 1972 was Rs. 10 Lakh. However, with implementation of 7th Central Pay

Commission, in case of Government servants, the ceiling now is Rs. 20 Lakhs effective from 1.1.2016.

Therefore, considering the inflation and wage increase even in case of employees engaged in private sector, the Government is of the view that the entitlement of gratuity should be revised for employees who are covered under the Payment of Gratuity Act, 1972. Accordingly, the Government initiated the process for amendment to Payment of Gratuity Act, 1972.

The Payment of Gratuity Act, 1972:

The Payment of Gratuity Act, 1972 applies to establishments employing 10 or more persons. The main purpose for enacting this Act is to **provide social security to workmen after retirement**, whether retirement is a result of the rules of superannuation, or physical disablement or impairment of vital part of the body. Therefore, the Payment of Gratuity Act, 1972 is an important social security legislation to wage earning population in industries, factories and establishments.

“Wood is Good” Campaign

The government has launched **“Wood is Good” Campaign under the Partnership for Land Use Science (Forest-Plus)**, a partnership between USAID and India’s environment ministry.

- The idea is to **promote wood as a climate-friendly resource and a substitute to materials like plastic and steel because it is carbon neutral unlike the others while leave a carbon footprint in their production.**

Forest plus:

The Partnership for Land Use Science (Forest-Plus) is a joint programme by the United States Agency for International Development (USAID) and Ministry of Environment, Forest and Climate Change (MoEF&CC) to strengthen capacity for REDD (Reducing Emissions from Deforestation and Forest Degradation) implementation in India. The programme brings together experts from India and the United States to develop technologies, tools and methods of forest management to meet the technical challenges of managing forests for the health of ecosystem, carbon stocks, biodiversity and livelihood.

Economic issue

Corporate debt, a drag on economy

Thomson Reuters data, based on the latest annual earnings reports, shows India's corporate debt rose to a seven-year high at the end of March.

Highlights of the report:

- More than a fifth of large companies did not earn enough to pay interest on their loans and the pace of new loans fell to the lowest in more than six decades.
- Net debt for 288 companies with a market capitalisation of more than \$500 million, covering most big firms in India, has hit at least a seven-year high of ₹18 trillion (\$281 billion). Soured debt was 12% of total loans held by lenders at the end of March.
- More than a fifth of 513 Indian companies had interest cover of less than 1%. New loans are also hard to come by. On an annual basis, the pace of new loans in the year to the end of March, fell to the lowest since the fiscal year ended in March 1954.
- The impact can be seen in the GDP data. Gross capital formation, a gauge of private investment, fell to less than 30% of GDP in the June quarter, from 31% a year earlier and 38% a decade ago.

Concerns associated:

Corporates are more concerned about the impact of soured loans on bank balance sheets, which prevent them from getting the full benefit of central bank rate cuts. That is sapping India's economic vitality, they say. Since January 2015, the central bank has cut policy rates by 200 basis points, or 2 percentage points, but commercial bank benchmark lending rates have come down less, by about 120 basis points.

How bad is India's corporate debt problem compared to its peers?

A cross-country analysis of corporate debt suggests that India's total corporate debt relative to its gross domestic product (GDP) is less than that of several major economies. However, the quality of debt in India is far poorer, with a large fraction of indebted firms losing their repayment ability, and saddling banks with a rising pile of non-performing assets (NPAs). According to the Bank for International Settlements (BIS), India's

corporate debt-to-GDP ratio stood at 51% of GDP as of 31 March 2016. The size of India's corporate debt, relative to GDP, is much lower than other major economies such as the US (72%) and the European Union (105%).

- The depressed interest coverage ratio of Indian firms is primarily because of two key reasons: the slower revenue growth of indebted firms, and a relatively higher interest rate in India compared to most other economies.
- Given the relatively high interest costs in India, many firms have often opted to raise money from abroad. The outstanding external commercial borrowings (ECBs) amounted to \$177 billion at the end of June 2016—roughly 17% of total corporate debt outstanding. While ECBs allow companies to borrow cheaply, they also expose them to currency risk. In the absence of adequate hedging by corporations, this too could become a point of stress.
- Thus, while India's corporate debt level is not significantly higher than that of its peers, the poor quality of debt and the low repayment ability of indebted firms continue to put an enormous strain on India's economy and the banking system.

Background:

The Indian government reported on August 31 that annual GDP growth in the quarter ended June dropped to 5.7%, an envious pace for many countries but India's weakest since early 2014. It was blamed on attempts by the government to flush out money hidden from the tax man, which caused a cash crunch, and the introduction of a general sales tax (GST), which prompted businesses and consumers to hit the pause button.

Way ahead:

India's fragile corporate metrics and its bad loan problem are but the mirror images of each other. Till the corporate deleveraging cycle bottoms out, bank profitability and credit growth are unlikely to recover.

Science and technology

India joins quantum computing race

Keen to tap into the next big advance in computing technology, the Department of

Science and Technology (DST) is planning to fund a project to develop quantum computers.

What is quantum computing?

First proposed in the 1970s, quantum computing relies on quantum physics by taking advantage of certain quantum physics properties of atoms or nuclei that allow them to work together as quantum bits, or qubits, to be the computer's processor and memory. By interacting with each other while being isolated from the external environment, qubits can perform certain calculations exponentially faster than conventional computers.

How it works?

A quantum computer, still largely a theoretical entity, employs the principles of quantum mechanics to store information in 'qubits' instead of the typical 'bits' of 1 and 0. Qubits work faster because of the way such circuits are designed, and their promise is that they can do intensive number-crunching tasks much more efficiently than the fastest comparable computers.

Way ahead:

Commercial production of quantum computers that would process information faster than today's supercomputers is still some time away. The industry first has to solve hardware issues in quantum technology, according to an expert. Quantum theory represents the smallest scales and shapes of matter, describing the behaviour of subatomic particles like electrons, protons, neutrons and photons.

A 'Boat Lab' to study Brahmaputra

The Centre plans to safeguard the fast-eroding Majuli island — Asia's largest riverine island — using research carried out on floating 'B4' boat labs along the Brahmaputra river.

Key facts:

- 'B4' – the 'Brahmaputra Biodiversity and Biology Boat', work on which will commence by December, will initially cover the region from Pasighat, Dibrigargh, Neemati, Tejpur and Guwahati in the state of Assam, said officials at the Department of Biotechnology. The department has set aside Rs. 50 crore as an initial investment on the project.
- The large barge (or boat) which will be set up on the river will be a "well-equipped laboratory" with cold storage facilities for holding samples, along with multiple satellite boats or rafts that will venture into shallower

and narrower parts of the river to lift samples.

- The large boat with the permanent lab will be spread over two floors and will go up and down the river. One floor will be dedicated to scientists, while the other floor will be accessible to residents of the area to learn about the eco-system. The idea is to study the changes caused by dams, climate change, human interventions and the eventual effects it has on the river eco-system.
- The project will "constantly monitor" the impact of various environmental and anthropological factors that affect the river and conduct research to mitigate the effects.
- The interdisciplinary focus, the work plan for which is developed with IIT Guwahati as the nodal agency, will also aim at a thorough study of freshwater resources of North East India. The integrated approach is aimed to combine data, science and judgement that can impact policy.

Background:

Majuli, the first island district of the country, was once 1200 square kilometres but due to excessive erosion has since shrunk to under 500 square kilometres. It is also known for being the seat of Assam's Vaishnava monasteries. Despite supporting considerable biodiversity, the Brahmaputra has not been studied as extensively as the Amazon.

Intelligent Transportation Systems (ITS)

The National Institution for Transforming India (NITI Aayog) and the International Road Federation, Geneva (IRF Geneva) have, today, signed a Statement of Intent (SoI) to cooperate in the field of Intelligent Transportation Systems (ITS).

The objective of the SoI is to create a national platform, involving all relevant Government of India stakeholders, Indian and foreign companies active in the sector, and relevant technical experts for the purpose of developing a National ITS Policy covering:

- Traffic Management.
- Parking Management.
- Electronic Enforcement of Traffic **Rules and Regulations.**
- Fleet Management and Monitoring.
- Innovation in the field of ITS.
- Education in the field of ITS.

Objective of the policy:

The objectives of this national ITS Policy will be to contribute to reducing urban traffic congestion, improving the situation around parking of vehicles in cities, improving road safety, and improving the security of passenger and goods traffic. The work of this National Platform will provide a coherent and consistent National ITS Policy covering domains such as traffic and parking management, enforcement, and security.

About International Road federation:

The International Road Federation (IRF) is a nongovernmental, not-for-profit organisation with the mission to encourage and promote development and maintenance of better, safer and more sustainable roads and road networks. Working together with its members and associates, the IRF promotes social and economic benefits that flow from well-planned and environmentally sound road transport networks. It helps put in place technological solutions and management practices that provide maximum economic and social returns from national road investments.

- The IRF has a major role to play in all aspects of road policy and development worldwide. For governments and financial institutions, the IRF provides a wide base of expertise for planning road development strategy and policy.

- For its members, the IRF is a business network, a link to external institutions and agencies, such as the United Nations and the European Union, and a business card of introduction to government officials and decision makers.

- For the community of road professionals, the IRF is a source of support and information for national road associations, advocacy groups, companies and institutions dedicated to the development of road infrastructure.

- Through the International Road Educational Foundation the IRF awards grants to graduate engineers and other transportation professionals from around the world in support of full-time academic training. With this the IRF actively supports the future generations who will build the road networks.

Ultra-thin craft may wrap and destroy space junk

Scientists are developing an ultra-thin spacecraft that can remove space debris – which potentially threaten satellites or astronauts – by enveloping junk in the Earth’s orbit and dragging it through the atmosphere, causing it to burn up. The Brane Craft, being developed by US-based Aerospace Corporation, is a flexible and less than half the thickness of a human hair.

Key facts:

- The spacecraft is designed to be resilient. Its microprocessor and digital electronics are fabricated in a way to ensure that if one component gets damaged, the others will continue to work.
- The project received funding from the NASA Innovative Advanced Concepts programme, which focuses on space research that are in early stages.
- Brane Crafts will be powered by ultra-thin solar cells as well as a little bit of propellant.
- After each Brane envelops a piece of space junk, it will navigate back to towards Earth, causing the junk to burn up in the atmosphere.

The menace of space debris:

According to NASA, there are over 50,000 pieces of debris (space junk) traveling at speeds up to 17,500 mph around the Earth, the movements of which are being constantly monitored and tracked.

- The rising population of space debris increases the potential danger to all space vehicles, but especially to the International Space Station (ISS), space shuttles, satellites and other spacecraft.
- In December 2016, Japan sent H-II Transfer Vehicle Kounotori 6 (HTV6) into space to deliver supplies to the ISS. The same cargo ship was also supposed to complete another mission during its return journey – clean up space debris. However, the experimental Japanese probe failed in its mission to clear space junk from the Earth’s orbit.

Incidents so far:

In 2013, Russian satellite, Blits, was damaged after colliding with debris created when China shot down an old weather satellite in 2007.

Why infections picked up in hospitals are the big threat today, how world is trying to cope.

A Bengaluru firm has become India’s

first to receive the international CARB-X grant to develop antibiotics to treat hospital-acquired infections.

What is CARB X?

CARB-X, or Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator, is a public-private international partnership, which was set up in 2016 to focus on innovations to improve diagnosis and treatment of drug-resistant infections. It grew out of President Barack Obama's 2015 Combating Antibiotic Resistant Bacteria (CARB) initiative, and is funded by the London-based biomedical research charity Wellcome Trust, and the Biomedical Advanced Research and Development Authority (BARDA) of the US Department of Health and Human Services.

What is it for?

The partnership provides a new, collaborative approach to speed research, development and delivery of new antibiotics, vaccines, diagnostics, and other innovative products to address the urgent global problem of drug-resistant bacterial infections. CARB-X will provide grants up to \$ 455 million (over Rs 2,900 crore) over a five-year period to firms across the globe for antibiotics R&D.

All CARB-X funding so far is focused on projects to address the most resistant "Gram-negative" bacteria.

What are Gram-negative bacteria?

Bacteria are classified as Gram-positive and Gram-negative, based on a structural difference in their cell walls that is detectable through a staining technique developed in 1884 by the Danish bacteriologist Hans Christian Gram. Gram-negative bacteria are responsible for 20-25% of infections, and are multi drug resistant — which is the ability of bacteria to defend themselves against drugs that try to kill them.

Background:

Antibiotic resistance has become a global crisis that threatens the management of infections, both in the community and in hospital practice. The major reasons are the indiscriminate use of antibiotics, including against viral infections, especially in countries like India where they are commonly available over the counter; their prolonged use in patients admitted to hospitals; and their abuse in animal husbandry as growth promoters. Cheaper

antibiotics such as penicillin, tetracycline or cotrimoxazole can often no longer cure an infection, and high-end ones like third- and fourth-generation cephalosporin and carbapenem are commonly used, doctors in India believe. In hospital critical care units, more than 50% organisms are now resistant even to these drugs.

Scientists make fuel from oxygen in air

Scientists have found a way to produce methanol — an important chemical often used as fuel in vehicles — using oxygen in the air, an advance that may lead to cleaner, greener industrial processes worldwide.

How was it produced?

Methanol was produced using nanoparticles of gold to initiate a chemical reaction between methane, oxygen and hydrogen peroxide. It can be done in one stage and at temperatures no higher than 50C (122F).

Significance of this discovery:

- It could become an alternative to petrol. It is also believed the new system of creating methanol could be used to create chemicals and plastics.
- The discovery promises to be not only cheaper, but much more environmentally friendly, as it both reduces energy consumption and conserves dwindling stocks of natural gas.
- It also opens up the prospect for the first time of easily converting natural gas into methanol at the site where it is extracted, so that it can be piped as a liquid in normal atmospheric conditions. At the moment methane has to be condensed into liquid natural gas and shipped in pressurised containers.

Background:

Traditionally, methanol is created by converting methane into hydrogen and carbon monoxide at high temperatures, then reassembling them in a different order in a second highly pressurised process. The current two-stage 'steam reforming' process is very energy intensive, as it requires a lot of fuel to achieve high temperatures.

Times Higher Education World University Rankings 2018

The Times Higher Education World

University Rankings 2018 of top 1,000 universities in the world has been released.

Key facts:

- UK led the rankings with University of Oxford retaining first position. The University of Cambridge climbed two places to second, overtaking California Institute of Technology and Stanford University, both joint third. The United States continued to dominate the rankings.
- China is the only BRICS nation that has advanced dramatically; it is now the fourth most-represented nation in the table, with 60 universities, including seven in the top 200, up from four last year.

Performance of Indian institutions:

- Some of the premier Indian institutes such as IIT Delhi and IISc Bangalore have slide down in the rankings to lower bands. Not a single Indian institute was able to make it to the top 100 list.
- This year, India's representation has also declined, from 31 institutions to 30, while eight of its universities have slipped to a lower band.
- Indian Institute of Science (IISc) has been placed in 251-300 category. The Indian Institute of Technology (IIT) Bombay has been listed 351-400 category.
- Indian Institute of Technology (IIT) Delhi, Indian Institute of Technology (IIT) Kanpur, Indian Institute of Technology (IIT) Kharagpur and Indian Institute of Technology (IIT) Roorkee have been listed in 501-600 category.
- Aligarh Muslim University, Banaras Hindu University, University of Delhi and Indian Institute of Technology Guwahati made it to the 601-800 list.

Environment & Ecology

Centre notifies wetland rules

In a major decision, the union environment ministry notified the new Wetland (Conservation and Management) Rules 2017 which prohibit a range of activities in wetlands like setting up and expansion of industries, waste dumping and discharge of effluents.

Key facts:

The new rules will replace the 2010 version of

the rules.

- The new rules stipulate setting up of a State Wetlands Authority in each State and union territories that will be headed by the State's environment minister and include a range of government officials. They will also include one expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the state government.
- These authorities will need to develop a comprehensive list of activities to be regulated and permitted within the notified wetlands and their zone of influence, recommend additional prohibited activities for specific wetlands, define strategies for conservation and wise use of wetlands, and undertake measures for enhancing awareness within stakeholders and local communities on values and functions of wetlands. Wise use is defined as the principle of sustainable uses that is compatible with conservation.
- The State authorities will also need to prepare a list of all wetlands of the State or union territory within three months, a list of wetlands to be notified within six months, a comprehensive digital inventory of all wetlands within one year which will be updated every ten years.
- The rules prohibit activities like conversion of wetland for non-wetland uses including encroachment of any kind, setting up of any industry and expansion of existing industries, manufacture or handling or storage or disposal of hazardous substances and construction and demolition waste, solid waste dumping, discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements.

Why are few environmentalists not happy with these rules?

The new Wetland Rules have laudable objectives. However, it falls short in details. At the outset, the identification process by the State Wetland Authority does not distinguish between existing wetlands and especially those past wetlands which have been encroached and can be proved through legal documents.

- It also does not take into account the Jagpal Singh judgment of Justice Katju for

restoration of encroached wetlands throughout the country.

- Provisions like “central government may consider proposals from the state government or union territory administration for omitting any of the (prohibited) activities on the recommendation of the authority” in the new rules can be misused.
- Another major objection is about the process of appeal against the decisions of wetland authorities. According to the 2010 rules, anyone aggrieved with the CWRA’s decisions could have filed an appeal with the National Green Tribunal, but the new 2017 rules are silent on the appeal process.
- The other big gap is the subjective definition of “wise use” which is to be determined by the state wetland authority. While the subject head talks about restrictions and the activities listed are to be prohibited, the provision gives ample space for undoing everything that ought to be prohibited.

What are wetlands?

Wetlands can be defined as lands transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. They support rich biodiversity and provide wide range of ecosystem services such as water storage, water purification, flood mitigation, erosion control, aquifer recharge and others.

- But they are threatened by reclamation and degradation due to activities like drainage and landfill, pollution, hydrological alteration (water withdrawal and changes in inflow and outflow), over-exploitation resulting in loss of biodiversity and disruption in ecosystem services provided by them.
- There are at least 115 wetlands that are officially identified by the central government and of those 26 are identified as wetlands of international importance under Ramsar Convention which is an international intergovernmental treaty for conservation of wetlands. India is a party to the treaty.

Multi-Agency Exercise ‘Pralay Sahayam’

A multi-agency exercise was recently

conducted on the banks of Hussain Sagar Lake as the final event of ‘Pralay Sahayam’ in Hyderabad.

- The event demonstrated efforts of all central and state agencies, National Disaster Relief Force (NDRF) and the Armed Forces towards jointly tackling an urban flooding scenario in Hyderabad.

Key facts:

- The exercise brought out the role and function of the State Emergency Operations in coordinating conduct of the joint operations.
- The exercise emphasized the significance of early warning systems of agencies like Indian Meteorological Department (IMD), National Remote Sensing Centre (NRSC) and Indian National Centre for Ocean Information Services (INCOIS).
- The exercise culminated with a static display which demonstrated the efficient and functional layout of a relief and rehabilitation camp for the displaced persons.

About NDRF:

The Disaster Management Act has made the statutory provisions for constitution of National Disaster Response Force (NDRF) for the purpose of specialized response to natural and man-made disasters.

Background:

Two national calamities in quick succession in the form of Orissa Super Cyclone (1999) and Gujarat Earthquake (2001) brought about the realization of the need of having a specialist response mechanism at National Level to effectively respond to disasters. This realization led to the enactment of the DM Act on 26 Dec 2005.

ROLE AND MANDATE OF NDRF:

- Specialized response during disasters.
- Proactive deployment during impending disaster situations.
- Acquire and continually upgrade its own training and skills.
- Liaison, Reconnaissance, Rehearsals and Mock Drills.
- Impart basic and operational level training to State Response Forces (Police, Civil Defence and Home Guards).
- Community Capacity Building Programme.
- Organize Public Awareness Campaigns.

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