



INSIGHTSIAS
SIMPLIFYING
IAS EXAM PREPARATION

Insights into Yojana: January 2017

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Post Sendai Initiatives and Way Forward

Introduction

- **Sendai Framework** was adopted during the 3rd **UN World Conference on Disaster Risk Reduction**.
- It consists of **four major priority areas and seven targets to be met by 2030** which is to prevent creation of new disaster risks and also to substantially reduce disaster risks.
- The four priority areas include:
 - Understanding Risk;
 - Strengthening Risk Governance;
 - Investing in disaster resilience;
 - Improving capacities for disaster response
- The Sendai Framework has **set targets for substantial reduction in losses** including reduction in number of deaths, number of people affected by disasters, economic losses and infrastructure losses.
- It calls for **increase in capacities** through national and local strategies, international cooperation, and improved access to early warning.

Initiatives taken by Government post Sendai Declaration

- India has successfully hosted the **Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR)** and adopted '**New Delhi Declaration**' and '**Regional Action Plan for implementation of the Sendai Framework**'. The conference also commemorated the first **World Tsunami Awareness Day** to spread awareness on tsunami.
- Outcomes of the AMCDRR will guide the implementation of the Sendai Framework in Asia and the Pacific.
- **National Disaster Response Force (NDRF)** is strengthened in terms of state-of-the-art training and equipment.
- Government has approved the creation of **National Disaster Response Reserve (NDRR)** through a revolving fund of Rs. 250 crore to be operated by the NDRF.
- The government expressed to share India's expertise and help other countries in disaster response as it did during Japan Earthquake in 2011 and Nepal earthquake of 2015.
- The government is making efforts to **promote regional cooperation by hosting the SAARC Disaster Management Centre** to reduce disaster risks in the region and promoting knowledge sharing

Box: A

Prime Minister's 10-Point Agenda on Disaster Risk Reduction Outlined at the AMCDRR

1. Ensure that all development projects - airports, roads, canals, hospitals, schools, bridges - are built to appropriate disaster resilient standards and contribute to the resilience of communities they seek to serve. Build a coalition to support disaster resilient infrastructure.
2. Work towards risk coverage for all - starting from poor households to small and medium enterprises to multi-national corporations to nation states.
3. Encourage greater involvement and leadership of women in disaster risk management.
4. Invest in risk mapping globally for all hazards.
5. Leverage technology to enhance the efficiency of our disaster risk management efforts.
6. Develop a network of universities to work on disaster issues.
7. Utilize the opportunities provided by social media and mobile technologies.
8. Build on local capacity and initiative.
9. Ensure that the opportunity to learn from a disaster is not wasted. Establish a facility for technical support to post-disaster reconstruction of houses.
10. Bring about greater cohesion in international response to disasters.

among the SAARC countries.

- In an effort to augment capacity building, **National Institute of Disaster Management (NIDM)** has signed a MoU with Jawaharlal Nehru University (JNU) for financial assistance and academic cooperation for establishment of a **Centre for Excellence in Disaster Research and Resilience Building at JNU**.
- The Government has implemented the **recommendations of 14th Finance Commission** and allocated **funds towards State Disaster Response Fund (SDRF)**.
- The Sendai framework calls upon private sector to be involved in disaster preparedness and mitigation.

Questions

- 1) **What are the priorities and global targets of- 'Sendai framework for Disaster risk reduction 2015-30'?**
- 2) **What are the initiatives taken by the government post Sendai Declaration?**
- 3) **Analyse Prime Minister's 10 point agenda on Disaster Risk reduction outlined in AMCDRR.**
- 4) **The Government of India recently hosted the Asian Ministerial Conference for Disaster Risk Reduction (AMCDRR). Which of the following statements about this conference is/are correct?**
 1. **The United Nations Office for Disaster Risk Reduction (UNISDR) is a co-organiser.**
 2. **This is the first time that India hosted an AMCDRR conference.**

Select the correct answer using the code given below:

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

Solution (a)

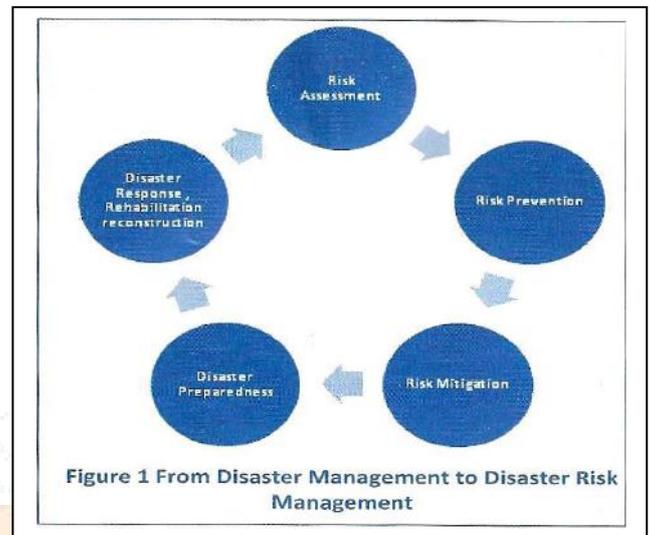
- 5) **The 'Sendai framework' – the first intergovernmental agreement of the United Nations post-2015 sustainable development era – is a framework for**
 - (a) **Disaster risk reduction.**
 - (b) **Building resilience for adaptation to climate change in the agriculture sector.**
 - (c) **Mutual administrative assistance in refugee-related issues.**
 - (d) **Enhancing national, regional and international efforts to promote awareness among Earth citizens with regard to sustainable habits and practices.**

Solution (a)

Managing Risks of Disasters for Sustainable Development

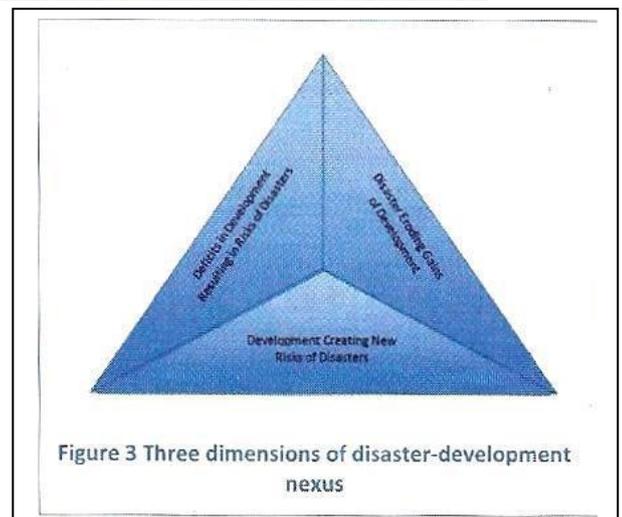
Introduction

- **Disaster risk management** means that the underlying hazards and vulnerabilities, natural or anthropogenic, are assessed scientifically and necessary measures are taken to prevent the creation of risks.
- **Disaster preparedness** means getting prepared for responding to disasters effectively as and when it strikes so that lives can be saved and human suffering reduced to the maximum extent possible through **measures like evacuation, search and rescue and humanitarian assistance like shelter and relief.**
- preparedness further means having policies, strategies, and resources in place for building back better livelihoods, houses and infrastructures devastated during disasters.
- **Disaster risk management has assumed critical Importance for sustainable development.**
- The **World Bank had estimated the economic Losses due to disasters** during the late nineties and Early years of this century were **close to two percent of GDP**, whereas similar amount was not invested for public health in the country.



Disaster and Development

- Disasters are intertwined with development in a three-dimensional nexus.
 1. **Disasters eat away hard earned gains of development** of years and decades.
 2. **Lack of development exposes vulnerable communities to the risks of disasters.**
 3. **Development creates new risks of disasters**, such as houses and infrastructure without compliance of zoning and building regulations are vulnerable; mining and industries in ecologically sensitive zones may destroy the natural buffer to disasters.



Momentum

- Growing global concerns for disaster resilient sustainable development found a new direction and momentum in 2015 through three independent processes. They are **Sendai Framework, the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change.**

Challenges and Opportunities

- **India has put in place legal and institutional mechanisms** at various levels and deployed scientific

and technological capabilities for disaster risk management with clearly visible impacts on loss of lives, as was demonstrated during some of the recent meteorological disasters like cyclones (Phailin and Hudhud).

- However similar results were not seen in **hydrological disasters** like floods or cloudbursts (Uttarakhand, Srinagar and Chennai) or geological disasters like landslides (Malin and north Sikkim).
- **Technological disasters** like industrial or road accidents Continue to spiral.
- Threats of **biological disasters** like epidemics and pandemics loom large, while **environmental disasters** like depleting water resources and rising level of air pollution in rapidly growing urban settlements are causes of major concerns.
- New initiatives like **Make in India, Skill India, Digital India, Swachh Bharat Abhiyan, Smart Cities Mission** etc provides opportunities for planning, designing and implementing the development projects and contribute to the process of mitigating the risks of disasters.
- **Mainstreaming disaster risk reduction into every aspect of development** had been in the agenda of disaster management, but not much headway has been achieved in this direction.
- Implementation of the Sendai Framework in conjunction with the SDGs and Paris Climate Agreement provide opportunities for addressing neglected but challenging tasks of disaster risk management in India.



Sustainable Development Goals	Targets on Disaster Risk Resilience
Goal-1: Ending poverty in all its forms	Target 1.5: Reduce exposure of the poor to climate related extreme events and disasters
Goal-2: Ending hunger, achieving food security and promoting sustainable agriculture	Target 2.4: Strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters
Goal-3: Ensuring healthy lives	Target 3.6: Develop early warning and reduce risk of health related disasters
Goal-4: Ensuring inclusive and equitable quality education	Target 4a: Build and upgrade educational facilities that are safe from disasters
Goal-9: Building resilient infrastructure	Target 9.1: Develop quality and reliable infrastructure that are resilient to disasters
Goal-11: Making cities and human settlements safe, resilient and sustainable	Target 11.5: Significantly reduce the number of deaths, affected and economic losses by disasters
Goal-13: Combating climate change and its impacts	Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters
Goal-15: Reversing land degradation	Target 15.3: Restore land affected by drought and floods

Questions

- 1) **Discuss the interrelationship between disaster management, sustainable development and poverty.**
- 2) **‘Every Hazard is not disastrous but sometimes anthropogenic activities supplements transformation of Hazards into Disaster’. Elucidate**
- 3) **Why India is more worried of disasters like flood and drought caused due to the impact of climate change? Discuss its direct and indirect consequences for India.**
- 4) **What are the challenges and opportunities for India to deal with disasters?**

5) Which of the following statements are correct about Prime minister's 10 point agenda on Disaster Risk Reduction outlined at AMCRDD.

1. Encourage greater involvement and leadership of women in disaster risk management
2. Leverage technology to enhance the efficiency of our disaster risk management efforts

Select the correct answer using the code given below:

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

Solution (c)

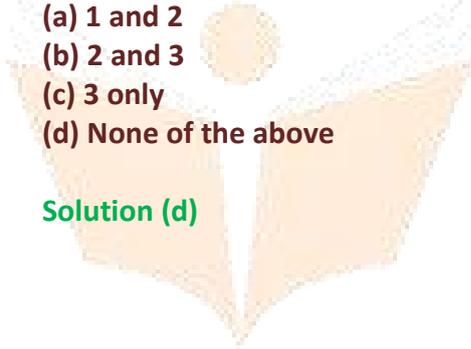
6) Consider the following statements about Disaster Management Act, 2005

1. This act envisaged a two tier Disaster Management structure in India at National and States level
2. The Disaster Management Act mandates the Central Government to establish NDMA as nodal authority with Home minister as its ex-officio chairperson.
3. It is not mandatory for the states to establish a State Disaster Management Authority (SDMA)

Select the correct answer using the code given below:

- (a) 1 and 2
- (b) 2 and 3
- (c) 3 only
- (d) None of the above

Solution (d)



Managing Disaster Risk

Introduction

- Only thing constant is change. All around things are changing and raising new aspirations and new challenges.
- Studies on disaster losses have shown that if we have **to achieve SDGs we have to plug disaster losses as priority** and for reducing disaster risks, we have to **address issues of extreme events and climate change**.

Disaster and SDG Challenges

- **Building disaster resilience is critical in achieving the goal of eradicating extreme poverty.**
- By 2030, there could be 325 million people trapped in poverty and exposed to natural hazards and **climate extremes particularly in sub-Saharan Africa and South Asia.**
- This suggests an urgent need to build and strengthen the resilience of poor communities to prevent future disaster events from pulling more people into poverty and to protect their livelihoods.
- **With every disaster there is a significant impact on various sectors of development like agriculture, housing, health, education and infrastructure.**
- People's increased vulnerability to disasters has much to do with **unsustainable development activities, such as improper use of land and environmental degradation.**
- Country need to have **coordinated solutions** in place to protect communities, critical infrastructure and development.
- If national targets for growth and development are to be realised, the shift from managing crisis to managing risks must be reflected in public policy frameworks and planning so as to **enable risk-informed investment and practice.**

Disaster Management

- The **definition of disaster as adopted by UN and also in National Act of Disaster Management 2005** is “**disaster is a serious disruption of a community or a society functioning, causing widespread human, material, economic and/or environmental losses which exceed the ability of the affected community or society to cope using its own resources.**”
- **Pre disaster planning for risk reduction, risk mitigation and preparedness** are the new rule of business in the sector.
- Global community have realized with lot many evidences based on success stories that prevention pays.
- In case of super cyclone in Odisha, 1999 we lost more than 13000 lives with huge damage to property. Whereas, in 2013 when cyclone Phailin hit, the number of death toll reduced to 22.
- This event becomes the global best practice as how India has been able to reduce the death to substantially low level.
- Now the concern is how to address the losses occurring to property – roads, bridges, housing, hospitals, electricity etc?
- We need **knowledge sharing among the larger Disaster Management community** and we need a common platform to create a versatile interface among policy makers in the Government and disaster managers at all administrative levels.

- At national and local levels, plans should be harmonized to incorporate awareness generation of **adopting disaster resilient building byelaws, land use zoning, resource planning, establishment of early warning systems, and technical competence.**
- We need to **document and learn from our past experiences** and to use these to reduce vulnerabilities at regional, national and local levels.
- According to an UNESCO estimate, today only \$4 out of every \$100 allocated for humanitarian assistance are spent on risk reduction measures.

Conclusion

- Projects planned for the future in high disaster prone areas should **mandatorily undertake disaster risk audit of the projects.**
- There has to be broader and a more **people-centred preventive approach** to disaster risk.
- Disaster risk reduction practices need to be inclusive and accessible in order to be efficient and effective.
- Government should facilitate, incentivize, and **engage with relevant stakeholders especially private sector** in the design and implementation of policies, plans and standards.
- There is a need for **engaging women as a leader, youth, children, civil society, and academia for making it inclusive.**

Questions

- 1) **Discuss what measures should be taken to efficiently manage disaster caused by tropical cyclones in India's coastal cities.**
- 2) **"Systems of mitigation and response are at the very foundation of economic development, built into the understanding of disasters." In the light of various disasters that are occurring, discuss the statement.**
- 3) **Examine how the Disaster Management Act, 2005 can be useful in drought mitigation as well as in assessment, planning and relief in drought hit regions.**
- 4) **Critically evaluate the National Disaster Management Authority's (NDMA) role and responsibilities in disaster management.**
- 5) **Which states of India are more prone to cyclones and Why? Suggest measures to reduce the disaster risk of cyclones.**
- 6) **'India's geographical condition makes its prone to different natural disasters occurring in its different regions'. Elaborate**
- 7) **Critically evaluate India's disaster and emergency response to recent environmental disasters compared to its response two decades ago to then disasters.**
- 8) **The National Crisis Management Committee helps with effective coordination and implementation of response and relief measures in the wake of disasters. It is chaired by**
 - a) Minister of Home Affairs
 - b) Prime Minister

- c) Vice-President
- d) Cabinet Secretary

Solution (d)

9) Consider the following statements

1. The overall coordination of disaster management vests with the Ministry of Home Affairs (MHA)
2. The cabinet committee on security (CSS) and the National Crisis Management Committee (NCMC) are the top level decision making bodies with regard to disaster management

Which of the statements above is/are correct?

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

Solution (c)



Training and Capacity Building

Introduction

- **The United Nations International Strategy for Disaster Reduction (UNISDR)** define 'Capacity Development' for Disaster Risk Reduction as "the process by which people, organisations and society systematically stimulate and develop their capability over time to achieve social and economic goals, including improvement of knowledge, skills, systems, and institutions.
- **Sendai Framework emphasises the need for enhancing the technical, financial, and administrative capabilities** of institutions, governments, and communities to deal with the risks at different levels.
- The Sendai Framework underlines the need for **capacity building of women in disaster management**.

Capacity Building

- The emphasis should not be only on **developing human resources**, but also on **developing the necessary infrastructure and institutional capacity** for risk reduction.
- Capacity building cannot be the responsibility of the state alone. As the Sendai framework puts it aptly, **we need an all-of-society approach**.
- Capacity building programmes should be formulated **based on the needs assessment**. After identifying the gaps in capacity of different stakeholders, training programmes should be developed.

National Policy and Plan for Capacity Building

- The **National Policy for Disaster Management** and the **National Disaster Management Plan (NDMP)** identifies the themes for capacity building which include **prevention and mitigation for risk reduction; effective preparedness and response; and recovery and build back better**.

Institutional Arrangements

- The **primary responsibility** for disaster management lies with the **state governments**. The local self governments also have a major role to play. **The role of central government is supportive and supplementary**.
- The overall coordination of disaster management vests with the **Ministry of Home Affairs (MHA)**. The **Cabinet Committee on Security (CSS)** and the **National Crisis Management Committee (NCMC)** are the key committees involved in the top level decision making with regard to disaster management.
- The **National Disaster Management Authority (NDMA)** lays down the policies, plans and guidelines for disaster management.
- The **National Cyclone Risk Mitigation Project** aims to empower the governments, the communities at large, particularly women.
- The **National School Safety Programme** is to build capacity of students and teachers for better preparedness.
- **National Institute of Disaster Management (NIDM)** undertakes training, research and development of national level information base.
- NIDM strives to emerge as a 'Centre of Excellence' in the field of Disaster Management.

Need of the Hour

- Though the number of lives lost in disasters is coming down, **the economic losses are mounting**. This is due to fast urbanisation, settlements in high risk areas, technology dependent life, impacts of climate change and increasing population.
- Hence, the need of the hour is to build the capacity of all the stakeholders in all the aspects of disaster management, particularly for **long term risk reduction**.
- **Local self governments** are the first to respond among public institutions during a crisis situation. It is imperative that their capacity is built in terms of human resources, equipment and training.
- The leaders and officials of panchayats and urban local bodies should be trained to handle crisis, **make use of available warning, organise search, rescue and relief operations**, and provide medical assistance.
- The Sendai framework notes the need to **build the knowledge of civil society, communities and volunteers** on disaster risk reduction.
- There is a need to **train people in the private sector** such as private medical practitioners and engineers for medical response and disaster resilient construction respectively.
- Capacity of the **NGOs and civil society** should also be built for emergency response, relief and disaster management.

Conclusion

- **Capacity building** is not a onetime activity. It is a **continuous process**. As the risks are dynamic, capacity building programmes have to keep changing and evolving.
- The programmes, projects and trainings for capacity building should be constantly evaluated to make them relevant and suitable.
- Several research findings have pointed out issues with top down model of capacity building approaches. Hence in future it should be more demand driven; efforts should be participatory and empowering to achieve sustainable risk reduction and building a resilient India.

Questions

- 1) **A recent report revealed that rapid growth in the number of people living in urban areas is increasing the world's susceptibility to natural disasters. Examine susceptibility of Indian cities to natural disasters and measures needed to be taken to address the risks.**
- 2) **'Disaster management authority act is not just an act in parliament but action on ground'. Elucidate.**
- 3) **"Capacity, Coordination and Community participation", these three C's are three Pillars stones of disaster management. Elaborate. Discuss the role of NDRF in capacity building for disaster management.**
- 4) **Discuss the nature and effects of recent natural disasters that are said to be the consequences of climate change.**
- 5) **What are the institutional arrangements in India for effective disaster management?**

- 6) India has in recent times emerged as a major player in providing disaster assistance to countries in the Indian Ocean region, and, in line with that, storage of HADR 'bricks' on ships has now become a Standard Operating Procedure and all operational ships carry it at all times. What does "HADR" stand for?
- (a) Hazard and Disaster Assistance and Rehabilitation
 - (b) Hazard Aid and Disaster Relief
 - (c) High Availability Disaster Recovery
 - (d) Humanitarian and Disaster Relief

Solution (d)

- 7) With reference to the recently released National Disaster Management Plan (NDMP), consider the following statements:
1. This is the first ever national plan prepared in the country
 2. The plan is based on the four priority themes outlined in the "Sendai Framework"
- Which of the statements above is/are correct?
- (a) 1 Only
 - (b) 2 Only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

Solution (c)

- 8) Consider the following statements about National Cyclone Risk Mitigation Project.
1. NCRMP-I covers States of Andhra Pradesh and Odisha.
 2. NCRMP-II covers States of Gujarat, Maharashtra, Goa, Karnataka, Kerala, and West Bengal
 3. The project is implemented by the Ministry of Home Affairs through National Disaster Management Authority (NDMA) and executed by the respective State Disaster Management Authorities at the State level.
- Which of the statements above is/are incorrect?
- (a) 1 and 2
 - (b) 2 and 3
 - (c) All of the above
 - (d) None of the above

Solution (d)

Chemical Disasters: Prevention and Response

Introduction

- Chemical disasters may arise at any stage of the plant/ process life cycle such as commissioning, storage, manufacturing, maintenance, disposal and transportation etc.
- At a time when the population density is high and more and more residential colonies are brewing up around the industries, a major mishap at a chemical plant can spill catastrophe to the people and environment.
- The **release of toxic chemicals** can cause irreparable damage that can last long to people as well as to the environment.
- One of the major drawbacks in India as compared to west is the **non-availability of accident investigation agency** and exclusive chemical accident database which will be useful to learn lessons from the past and investigate the root causes of accidents and prevent its recurrence.
- The **Ministry of Environment and Forest (MoEF) is the nodal ministry for management of chemical disasters** and National Disaster Management Authority has prepared guidelines for disaster management plans.
- Since the **Bhopal gas tragedy in 1984** there has been a paradigm shift in the government's approach to safety in industries from a reactive to proactive safety culture.

Causative Factors

- **Ageing of process plants, defects in design** and inadequate steps to pace with modern technologies in Indian chemical industry has increased vulnerability to chemical disasters.
- Often, fires and explosions are accompanied by toxic release to the environment.
- A majority of the industrial accidents occur due to **human error** as a result of non-compliance of Standard Operating Procedures (SOPs). **Piper alpha accident** is a classic example of how human error can lead to chemical disasters.
- There is an increased threat due to terrorist activities and sabotages. Natural disasters such as floods and earthquakes have also caused a major disaster in chemical industry.
- Another common cause that results in chemical disasters is **improper maintenance of equipment**. The **Flixborough incident** is a prime example of improper maintenance.
- Non availability of an **emergency response team** to mitigate accidents during the **transportation of hazardous chemicals** has also resulted in major disasters in several locations in India.
- Hazardous waste processing and its proper disposal needs special attention as these activities can also contribute to fire, explosions and toxic releases to the environment.

Prevention and Response

- **Role of Industry:**
 - a) **Identification of Hazardous activities**
 - A **knowledgeable and dedicated team of qualified professionals** to evaluate the hazards and risks arising is essential.
 - Use of appropriate **hazard identification tools** would help in mitigating the hazards.
 - b) **Maintenance of the plant facility and equipment**

- Proper maintenance of all the equipment and machinery need to be carried out at regular intervals to ensure that the plant facility is safe.

c) Installation of Vapour / gas detection System

- Installation of gas / vapour detection system with alarms to detect leak even at micro levels would ensure that the leaks are attended at the early stages.

d) Compliance with existing rules and regulations

- Various rules and regulations of the state and centre should be strictly adhered for a sustainable and safe process.

e) Development of human resource management

- A good human resource management must be setup by the industry comprising of the top most officials to improve the safety systems in the chemical industry.

f) Emergency preparedness

- The industry must have a good emergency response team that can react swiftly to mitigate disasters.

• Role of Government:

a) Setting up accident investigation board and chemical accident database

- An accident investigation board in **similar lines of chemical safety board of USA** can be setup in India **to investigate the chemical disaster** and bring out guidelines based on the lessons learnt in each incident.
- An **online portal** would help industries tackle a wide range of concerns from experts around the world that would help in preventing any unforeseen conditions arising out of the plant operation.

b) Awareness campaign

- The government can provide awareness regarding the hazards arising out a chemical disaster to the workers as well as the public.

c) Research and Development

- **R&D initiative to newer technologies** that can minimise the toxicity of the by-products of chemical industries can be carried out by the government.
- Research into **newer methods of producing the product with less toxicity** can substantially reduce the adverse effect if any accident were to happen.

d) Transportation of Hazardous Chemicals

- Swift and timely availability of emergency response for disaster during transportation of hazardous chemical will help in mitigating and rescue the public involved.
- Recently **Indian Chemical Council (ICC)** has initiated a programme called "**Nicerglobe**" which provide **GPRS tracking of trucks** right from its origin to the place of destination.

Role of Public:

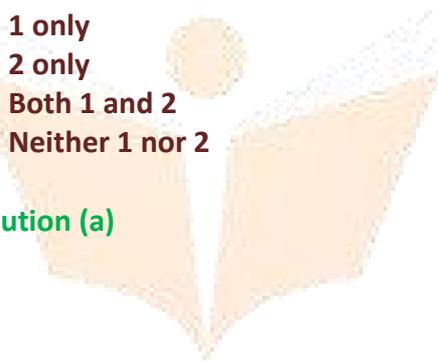
- A **general awareness** of the risk associated with any chemical accident would help in **reducing the outcome of the accident.**
- A **mutual aid group** can be setup to organise the general public in case of any disaster and provide training and awareness about the **potential actions to be taken in case of any chemical leakage.**

- Due to chemical disaster the **damage to the industry's reputation** is almost irrevocable. The result of a **chemical disaster has effects through generations** of populations which are almost **irreparable** and the cost of that to the affected people is unimaginable.

Questions

- 1) During the recent Nepal earthquake, India has shown that its disaster management preparedness not only benefits India but also its neighbouring countries and many more littoral countries. Elucidate.
 - 2) Analyse the factors which causes chemical disasters and measures to mitigate it.
 - 3) Explain the role of industry, government and public to deal with chemical disasters.
 - 4) Which of the following statements is correct about "Nicerglobe"
 3. It is an initiative which provides GPRS tracking of trucks for safe and secure transportation.
 4. It is an initiative of International Council of Chemical Associations (ICCA)
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Solution (a)



Biological Disasters: Causes and Way Forward

Introduction

- Biological disasters define the devastating effects caused by an **enormous spread of a disease, virus or infestations of plant, animal or insect life on an epidemic or pandemic level.**
- **Cholera and Influenza H1N1 (Swine flu)** outbreaks are examples of biological disasters.
- **Epidemic- level biological disasters** affect large numbers of people within a given community or area, whereas **pandemic- level biological disasters** affect a much larger region, sometimes spanning entire continents or the globe.

Biological Hazards

- Biological hazards, also known as **biohazards**, refers to biological substances or organic matters **produced by parasites, viruses, bacteria, fungi and protein that pose a threat to the health of living organisms, primarily that of humans.**
- **Ministry of Health and Family Welfare** is the nodal ministry for **handling epidemics**, decision making, advisory body and emergency medical relief provider.
- **According to the constitution, health is a state subject.** The primary responsibility of dealing with biological disasters rests with the state government.
- **Biological Warfare (BW)** also known as **germ warfare** is the use of biological toxins or infectious agents such as bacteria, viruses, and fungi with the intent to kill or incapacitate humans, animals or plants as an act of war.
- **Ministry of Home Affairs (MHA)** is the nodal ministry for BW and partners with Ministry of Health and Family Welfare in its management.
- **WHO** contributes to global health security by:
 - Strengthening national surveillance programmes.
 - Disseminating verified information on outbreaks of diseases, and also by providing technical support for response.
 - Collecting, analysing and disseminating information on diseases likely to cause epidemics of global importance.

Legislation

- There are number of legislations that control and govern the nation's health policies. The government can enforce these legislations to contain the spread of diseases.
 - **Water (Prevention and Control of Pollution) Act, 1974**
 - **Air Prevention and Control of Pollution Act, 1981**
 - **Environment (Protection) Act, 1986 and the rules (1986)**
 - **The Disaster Management Act, 2005** provides for the effective management of disasters.

Preventive and control measures at work place

- **Elimination of the source of contamination is fundamental to the prevention and control of biological hazards.**
- **Engineering controls** such as improvement of ventilation, partial isolation of the contamination source and the use of ultraviolet lamps can help contain the spread.

- **Personal hygiene** like washing hands before and after work is the simplest and most basic method to avoid infection.
- **Personal protection** The employees must use personal protective equipment and adhere strictly to the practice of personal hygiene.
- **Sterilization** is the process using heat or high pressure to eliminate bacteria and microorganisms to ensure that employees would not be harmed through exposure in the risk area.

Prevention of Biological Disasters

- The important means for prevention of biological disasters include the following:
 - **Vulnerability Analysis and Risk Assessment.**
 - **Environmental Management**
 - Safe water supply and proper maintenance of sewage pipeline will go a long way in prevention of biological disasters.
 - Necessary awareness should be created in the community about the importance of personal hygiene.
 - Vector control programmes like elimination of breeding places, regular spraying of insecticides, keeping a watch on rodent population and burial / disposal of the dead bodies.

Questions

- 1) Epidemics such as dengue fever are also considered as disasters whose management is now being considered as a prime objective in developing countries such as India. Discuss what preventive and control measures are needed to achieve long-term, sustainable control of dengue epidemic in India.
- 2) What do you mean by Biological Disasters? What are the preventive measures to control biological disasters?
- 3) Consider the following statements
 1. Ministry of Home Affairs (MHA) is the nodal ministry for Biological Warfare and partners with Ministry of Health and Family Welfare in its management
 2. National Institute of communicable diseases is the nodal agency for investigating outbreaks of biological disastersWhich of the statements above is/are correct?
 - a) 1 Only
 - b) 2 Only
 - c) Both 1 and 2
 - d) Neither 1 nor 2

Solution (c)

Psychological First Aid: A Way to De-stress during Distress

Introduction

- **Natural calamities** appear to recurrent phenomena regionally across the country and **affect individuals of all age, sex, caste and creed.**
- Several regions in the country are such that children have grown up experiencing violence and disasters which will have an impact to mental health and well being.
- Managing such adversaries and disaster preparedness occupies an important place in this country's policy framework as it is **the under privileged who are worst affected on account of disasters.**
- There is an urgent need for a spearheaded approach for promoting natural recovery to restore functionality among the people affected by traumatic event, extending appropriate and timely interventions.

Providing Psychological First Aid

- Psychological first aid aims at **providing immediate supportive response** to someone who is suffering in wake of disaster.
- The first objective in the aftermath of disaster shall be focussed on **ensuring that immediate practical needs of survivors are met.**
- This involves **helping people to feel physically safe** through provision of temporary housing, help people able to locate the family members, help in developing a sense of feeling connected to others and provide physical, emotional and social support.
- Once the physical needs are met, people need interpersonal support and acceptance from family, community and caregivers to return back to normal life.

WHO framework for Psychological First Aid

- WHO has developed a framework consisting of 3 action principles which provide guidance to view and safely enter an emergency situation (**LOOK**) in order to understand the needs of affected people (**LISTEN**) and link them with the information and practical support they need (**LINK**).
- Therefore the **first responders, primary care givers and disaster relief workers shall be equipped with basic minimum skills to extend immediate care in terms of psychological first aid.**

Questions

- 1) **Critically analyse the impact of natural disasters on elderly and disabled people, and preparedness needed to reduce impact of disasters on these vulnerable section of population.**
- 2) **No doubt Science and technology plays vital role in disaster management but the role of humanities in this regard is of equal importance. Enumerate.**
- 3) **Examine the need of providing Psychological first aid after the occurrence of disasters.**

Role and Importance of Effective Communication

Introduction

- **Communication during and immediately after disaster situation is an important component of response and recovery**, in that it connects affected people, families, and communities with first responders, support systems and other family members.
- **Reliable and accessible communication and information systems** also are key to a community's resilience.

Role of communication during disasters

- Application of communication technology has a role in all the four distinct phases of disaster management namely, mitigation, preparedness, response and recovery.
- Communications during emergencies incorporates a wide range of measures to manage risks to communities and the environment.
- Before disasters strike, **telecommunications can be used as a conduit for disseminating information about the impending danger** thus making it possible for people to take the necessary precautions to mitigate the impact of these hazards.
- **Remote sensing and GPS** have critical roles to play in tracking approaching hazards, alerting authorities and warning.
- **Role of communication was best experienced during the super cyclone and floods in Odisha.** When all the telephone lines were down and mobile towers were razed to the ground. The then Andhra Pradesh government rushed its modern technology phones which came into immense use.
- Modern communication also came to use when thousands of persons were evacuated before the cyclone Phalin hit the Odisha coast since the warning equipment were in place beforehand.

Role of journalists

- Journalists who are covering the disasters must be trained about use of latest instruments and technologies.
- The journalists and the disaster management personnel should also identify the danger spots and map the area accordingly.
- The journalists should take care of their communication equipment which holds vast amounts of data vulnerable to attack.

Questions

- 1) **Analyse the role of social media in disaster management.**
- 2) **Discuss the role of press in disaster management. What are the various steps taken by the government to spread awareness among public to make them prepared for any such disaster incident?**
- 3) **Examine the role of India's space programme in disaster management operations.**
- 4) **In the context of the India Meteorological Department's forecasts, which of the following statements is/are incorrect?**

1. The Long Period Average (LPA) is the average rainfall received over a 50-year period preceding the year in which a forecast is made
2. A rainfall deficiency of even 2% of the LPA can result in drought-like conditions in some pockets in the country
3. In its first seasonal forecast each year, the IMD issues monsoon forecasts region-wise, apart from the country as a whole

Select the correct answer using the code given below:

- (a) 1 and 2 Only
- (b) 2 and 3 Only
- (c) 1 and 3 Only
- (d) 1,2 and 3

Solution (c)

- 5) The National Commission on Agriculture in India defines three types of droughts. Which of the following statements is/are correct?
1. Meteorological drought is defined as a situation when there is significant decrease of normal precipitation over an area
 2. Hydrological drought results from prolonged meteorological drought
 3. Agricultural drought is a situation when there is significant decrease of normal crop yield

Select the correct answer using codes given below:

- a) 1 and 2 Only
- b) 1 and 3 Only
- c) 1, 2 and 3
- d) None of the above

Solution (a)

- 6) Consider the following statements:

1. Declaring droughts is the prerogative of States, not the Indian Meteorological Department (IMD)
2. Temperatures greater than 4.5 degree centigrade above what's usual for the region are considered to be spells of heat waves
3. Temperatures less than 4.5 degree centigrade in a region are considered to be spells of cold waves

Which of the statements above is/are correct?

- a) 1 and 2 Only
- b) 2 and 3 Only
- c) 1 and 3 Only
- d) 1, 2 nor 3

Solution (a)

J&K Window

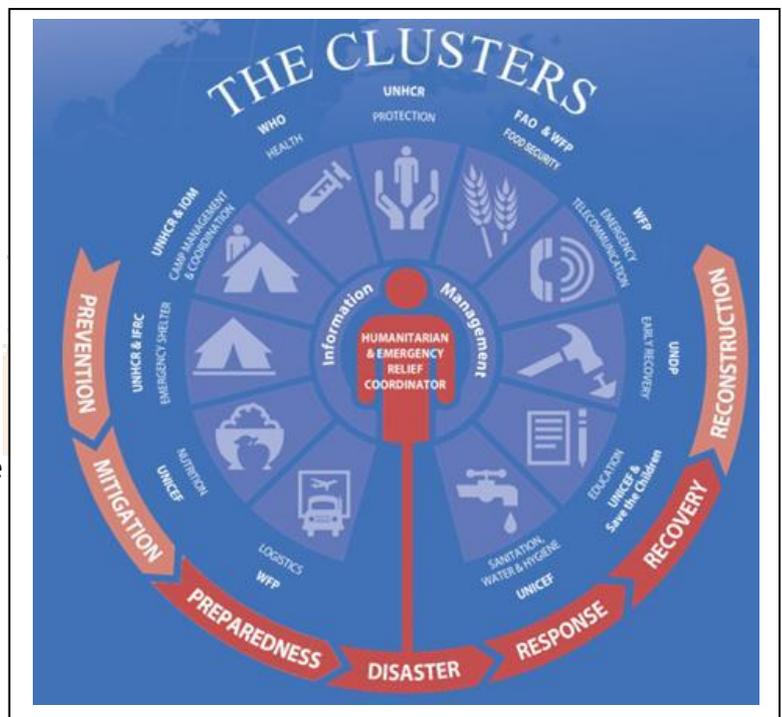
National Institute of Sowa Rigpa at Leh

- The government has approved the establishment of **National Institute of Sowa Rigpa (Amchi)** at Leh in J&K.
- The system is practiced in many parts of India, including Ladakh in J&K; Sikkim; Darjeeling; West Bengal; Arunachal Pradesh; Himachal Pradesh.
- **Sowa Rigpa has been recognized by Government of India by amending the India Medicine Central Council (IMCC) Act, 2010.**

Do You Know?

United Nations Disaster Assessment and Coordination (UNDAC)

- The United Nations Disaster Assessment And Coordination (UNDAC) is part of the **international emergency response system for sudden-onset emergencies.**
- It is designed to help the United Nations and governments of disaster-affected countries during the first phase of a sudden-onset emergency.
- The **office for the Coordination of Humanitarian Affairs (OCHA)** at the request of the government affected by a disaster dispatches a UNDAC team to the country within 12 to 48 hours anywhere in the world.



Questions

- 1) Which of the following statements About 'Sowa-Rigpa', a recognized Traditional and Complementary System of Medicine in India, are correct?
1. It is commonly known as 'Amchi' system of medicine
 2. Much of its theory and practice is similar to Ayurveda
 3. It is practiced in some parts of Nepal, Bhutan and also in former Soviet Union
 4. This medical tradition originated in Tibet
- Select the correct answer using the code given below:
- a) 1,2 and 3
 - b) 1 and 3 Only
 - c) 2 and 3 Only
 - d) 3 and 4 only

Solution (a)

2) The Ministry of AYUSH has the mandate to promote, propagate and globalize recognized Traditional and Complementary Systems of Medicine (T&CM) which include

1. Naturopathy
2. Unani
3. Siddha
4. Sowa-Rigpa
5. Homeopathy

Select the correct answer using the code given below:

- a) 2, 3 and 5 only
- b) 1, 4 and 5 only
- c) 1, 2, 3, 4 and 5
- d) 1, 2, 3 and 5 only

Solution (c)

