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Syllabus heading

Disaster Management

UPSC Civil Services (Main) Examination · GS III · General Studies Paper III

Disaster and disaster management.

Facts & figures for this syllabus heading.

Numbers move. Confirm the latest Budget, Economic Survey or census round. This sheet is for revision, not a substitute for the model answer.

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6 Disaster Management

The Sendai Framework for Disaster Risk Reduction (2015-2030) is a non-binding global agreement aimed at reducing disaster risks and losses in various sectors over 15 years.

Vulnerability 59% of the Indian landmass Last

10 major earthquakes that have resulted in over 20,000 deaths

6 Disaster Management

Seismic Zonation; The Bureau of Indian Standards, based on the past seismic history, divided the country into four seismic zones, viz. Zone II, III, IV and V.

Recent incidents Baramulla Earthquake

4.2 magnitude; Japan Earthquake 2024; Turkey Earthquake 2023; Indonesia Earthquake 2023

Human induced 1967

Koyna Dam, 2011 - Oklahoma earthquake earthquakes; 2015 - Nepal Earthquake

6 Disaster Management

Initiatives; Risk assessment and mapping by GIS; NDMA guidelines; Earthquake Early Warning System (EEWS); India Quake - Mobile App; Promoting Traditional Earthquake Resilient Construction Practices like Koti Banal and Dhajji Dewari.

6 Disaster Management

Vulnerability; More than 40 million hectare area is flood prone out of the total geographical area of 329 million hectares (mha); 12% of India's area is flood-prone.; Assam, West Bengal and Bihar are among the high flood prone states.

6 Disaster Management

Recent incidents; Assam Floods 2026; Punjab Floods 2025; Bihar floods 2025

6 Disaster Management

Vulnerability; One of the top four countries with highest landslide risk.; 12.6% area prone to landslide; 29% of the area falls in the moderate landslide susceptible zone; 56% in the low to very low landslide susceptible zone.; 30% of the World's landslides occur in the Himalayan ranges.

6 Disaster Management

Recent incidents; Wayanad Landslides, Uttara Kannada Landslides 2024, Raigad Landslide

6 Disaster Management

Pettimudi Landslide 2020, Joshimath Landslide 2023

6 Disaster Management

Initiatives; Landslide Early Warning System (LEWS); India's landslide susceptibility mapping by GSI; NDMA guidelines for Landslide Hazard Zonation

6 Disaster Management

Vulnerability; 68% of cultivable area is prone to droughts.; 2/3rds of India suffer from drought .; According to the report, the water shortage will cost the economy 6% of GDP by 2050.

6 Disaster Management

Flash Droughts; Flash drought is characterised by rapid onset and intensification caused by high evapo- transpiration rates due to abnormally high temperatures, winds, and high incoming solar radiation.

Recent incidents 2024

Karnataka; 2009 : Bundelkhand drought; 2014-16 : Central India/Bundelkhand Drought; 2019 : Tamil Nadu, Karnataka, Andhra Pradesh

6 Disaster Management

Vulnerability; 8% of the land and 76% of the coastline is prone to cyclones; 12 districts, all along the east coast, are "very highly prone"; 41 districts are "highly prone" to cyclones .

Indian Institute of Tropical Meteorology (IITM)

52% increase in Arabian Sea between 2001 and 2019; 8% decrease over the Bay of Bengal, compared to the 19 years between 1982 and 2002.

Recent incidents Remal - 2024

Indian Ocean - Odisha, West Bengal, Jharkhand, Northeast India; Michuang-2023: Bay of Bengal - Andhra Pradesh; Tej-2023: Arabian Sea - West Coast; Mandous - 2022: Bay of Bengal - Chennai; Ockhi-2017: Bay of Bengal : claimed lives of 200 fishermen

6 Disaster Management

Initiatives; Early Warning Systems; National Cyclone Risk Management Project; Integrated Coastal Zone Management Project; Coastal Regulation Zones; Color Coding of Cyclones by IMD; Hydro-meteorological Resilience Action Plan (HmRAP) study to strengthen ULBs

6 Disaster Management

Vulnerability; On an average, 5-6 heat wave events occur every year over the northern parts of the country.; Criteria of IMD: If the maximum temperature of a meteorological- substation reaches :: at least 40°C or more in the plains.; 37°C or more in coastal areas and; at least 30°C or more for hilly regions.; 23 states are heat wave prone.

13 Disaster Mitigation Initiatives

1. Shifting Gears from Disaster Management to Disaster Risk Reduction The initiative focuses on improving drought preparedness and response in the worst-affected areas of Chitrakoot, through multi-sectoral convergent community-based efforts to combat drought impacts.

13 Disaster Mitigation Initiatives

2. Flood and Landslide Disaster Management, Wayanad (Kerala) The Wayanad district administration implemented a Standard Operating Procedure (SOP) to reduce casualties during the 2018 floods in Kerala, focusing on preventive evacuation, timely relief, and post- disaster support.

Impact

Preventive evacuation from disaster-prone areas minimized casualties; 223 relief camps were set up in safe public buildings to house the rescued population.; Special communication devices and counseling sessions were used to aid the affected people.; Immediate relief included free rations for 3 months, 50 days of additional wage employment under MGNREGA, and provision of food, clothing, drinking water, and...

13 Disaster Mitigation Initiatives

NITI AAYOG BEST PRACTISES 47

'We for Wayanad' Campaign for Effective Disaster

Wayanad, Kerala To establish an effective disaster management and warning system to mitigate the impact of natural calamities and ensure community safety in Wayanad District.

Impact

The initiative significantly reduced casualties during the 2018 floods and enhanced community involvement in disaster preparedness and relief efforts.

Flood Hazard Atlas

Uttar Pradesh To strengthen flood mitigation and planning by using geospatial data, flood-risk mapping, and scientific identification of flood-prone areas.

Impact

Uttar Pradesh developed a Flood Hazard Atlas in collaboration with the National Remote Sensing Centre to identify flood-prone areas and support flood-management planning. The atlas helps authorities assess vulnerable areas, plan flood-control measures, improve preparedness, and guide disaster-risk reduction strategies. It supports evidence-based decision-making by using geospatial information for flood zonation and...

Lightning Warning Systems

Uttar Pradesh To reduce lightning-related deaths and injuries by installing sensor-based early warning systems that provide advance alerts to vulnerable communities.

13 Disaster Mitigation Initiatives

NITI AAYOG BEST PRACTISES 48

Impact

Uttar Pradesh is installing 30 lightning sensors and 1,500 warning systems across 37 districts. These systems can provide alerts around 30-40 minutes before lightning events, enabling people to take timely protective action. The initiative is part of the state's broader early-warning architecture, which also includes automatic weather stations, rain gauges, Doppler radars, river sensors, and public-address systems...

13 Disaster Mitigation Initiatives

NITI AAYOG BEST PRACTISES 49

Shifting Gears from Disaster Management to Disaster

The initiative focuses on improving drought preparedness and response in the worst-affected areas of Chitrakoot, through multi-sectoral convergent community-based efforts to combat drought impacts. Impact:; A mobile app has been developed for hazard communication, providing online and offline notifications, with 649 villages mapped for real-time updates.; Multi-sectoral measures have been implemented, ensuring...

Flood and Landslide Disaster Management, Wayanad

The Wayanad district administration implemented a Standard Operating Procedure (SOP) to reduce casualties during the 2018 floods in Kerala, focusing on preventive evacuation, timely relief, and post-disaster support. Impact:; Preventive evacuation from disaster-prone areas minimized casualties; 223 relief camps were set up in safe public buildings to house the rescued population.; Special communication devices and...

'We for Wayanad' Campaign for Effective Disaster

To establish an effective disaster management and warning system to mitigate the impact of natural calamities and ensure community safety in Wayanad District. Impact:; The initiative significantly reduced casualties during the 2018 floods and enhanced community involvement in disaster preparedness and relief efforts.; Topics where it can be Applied: Disaster Management, Community Participation.; How to Use...

Flood Hazard Atlas - Uttar Pradesh

To strengthen flood mitigation and planning by using geospatial data, flood-risk mapping, and scientific identification of flood-prone areas. Impact: Uttar Pradesh developed a Flood Hazard Atlas in collaboration with the National Remote Sensing Centre to identify flood-prone areas and support flood-management planning. The atlas helps authorities assess vulnerable areas, plan flood-control measures, improve...

Lightning Warning Systems - Uttar Pradesh

To reduce lightning-related deaths and injuries by installing sensor-based early warning systems that provide advance alerts to vulnerable communities. NITI AAYOG BEST PRACTISES 48 Impact: Uttar Pradesh is installing 30 lightning sensors and 1,500 warning systems across 37 districts. These systems can provide alerts around 30-40 minutes before lightning events, enabling people to take timely protective action. The...

Green-Blue Infrastructure on Ema River - Urban

To build climate-resilient urban infrastructure by integrating riverfront development, green spaces, water management, biodiversity conservation, and public-use urban spaces. Impact: The Green-Blue Infrastructure model on the Ema River focuses on using natural systems as part of urban infrastructure. It combines water-body rejuvenation, green corridors, biodiversity protection, flood-risk reduction, and improved...

Transforming Connectivity with Baster Net Scheme -

To bridge the digital connectivity gap in remote and Left-Wing Extremism-affected areas by strengthening telecom and internet infrastructure in Bastar district. Impact: The Baster Net Scheme focuses on improving digital connectivity in Bastar, a difficult and under-served region of Chhattisgarh. NITI for States lists "[Transforming Connectivity with Baster Net Scheme in Bastar District](#)" under Urbanization best...

AKAR: Residential School for Differently-abled

To ensure the inclusion of differently-abled students and reduce their dropout rates by providing comprehensive education and specialized therapies. Impact: Nearly 800 differently-abled children in Sukma, Chhattisgarh, receive inclusive education and therapies, enhancing their overall development and opportunities in sports and arts.; Topics where it can be Applied: Inclusive Education, Differently-abled...

BAL SANSAD - Shrawasti and Bahraich, Uttar Pradesh

To sensitize young minds to the idea of democracy and promote inclusiveness by providing a platform for students to express their views and experience democratic processes. Impact: Over 3,200 schools in Shrawasti, Uttar Pradesh, have adopted Bal Sansad, encouraging student participation in democratic activities and promoting inclusiveness through school assemblies and cleanliness drives.; Topics where it can be...

BALA Implementation - All Aspirational Districts,

To transform school environments into child-friendly, learning-oriented spaces by utilizing physical infrastructure for educational purposes. Impact;; The adoption of BALA in Shravasti, Uttar Pradesh, and other districts has made schools and Anganwadis more attractive and vibrant, significantly improving student retention rates.; Topics where it can be Applied: Child-Friendly Schools, School Infrastructure.; How to...

'BETI BACHAO, BETI PADHAO' Citizen Recognition -

To raise awareness about the importance of girl children, their education, and achieving a balanced sex ratio through public recognition of local girls' and women's achievements. Impact;; Inspirational graffiti and statues in Firozpur, Punjab, motivate local girls and women to excel, while fostering pride among parents and promoting social awareness about the significance of educating and nurturing girls.; Topics...

Library Campaign - Education for Change -

To enhance the imagination of children and prepare them to face the world by establishing model libraries in all schools. Impact;; The initiative in Sitamarhi, Bihar, has established 1,431 model libraries in Phase-I, with 600 more planned in Phase-II, fostering a culture of reading and overcoming social barriers to education.; Topics where it can be applied: Literacy Promotion, Reading Culture.; How to Use...

Motivational Campaigns to Increase School

nagar, Uttar Pradesh; To raise awareness about the importance of education and motivate parents to enroll their children in school.; It ensures active parental involvement in their children's educational progress. Impact; In Balrampur, around 54,000 previously out-of-school students were enrolled, significantly improving attendance rates.; While Siddharthnagar's initiative fostered parental engagement in monitoring...

Project Second Innings - Dahod, Gujarat

To increase student attendance and learning outcomes by engaging retired teachers to teach primary and upper primary classes. Impact; The initiative in Dahod has increased the pass percentage of students from 37.35% to 49.18%, while revitalizing the lives of both retired teachers and students.; Topics where it can be Applied: Retired Teachers in Education, Improved Learning Outcomes.; How to Use;; Discuss the...

Smart Classrooms for Visually Impaired Children -

To improve Braille literacy among visually impaired K-12 students using cutting-edge technology, enhancing their learning outcomes and employability. Impact; The installation of 20 Braille-teaching devices in Ranchi, Jharkhand, has reinvigorated students' interest in learning Braille, promoting self-learning and potentially increasing the employability of visually impaired individuals.; Topics where it can be...

Shiksha Saarthi Yojna - Singrauli, Madhya Pradesh

To address the shortage of teachers in rural primary schools by appointing local educators, ensuring consistent and quality education. Impact; The initiative in Singrauli, Madhya Pradesh, has led to significant improvements in student enrolments, attendance, and proficiency levels across 16 primary schools.; Topics where it can be Applied: Teacher Recruitment, Quality Education.; How to Use;; Use this case to...

Teach Gajapati: A Jan Andolan for Quality Education

To improve the quality of education in schools by engaging alumni and community members as voluntary teachers under the 'Mo School' Abhiyaan. Impact;; The campaign in Odisha has significantly enhanced educational quality through volunteer participation, fostering a participative and accountable learning environment.; Topics where it can be Applied: Community Participation, Quality Education.; How to Use;; Discuss...

'Mera Mobile, Mera Vidyalaya' Unnayan Banka - Smart

Bihar To provide quality education for all using modern technologies, ensuring 24/7 access to comprehensive learning materials through various platforms, especially mobile phones. Impact; The initiative has significantly improved learning outcomes from 17% to 54% and achieved attendance rates of over 90% in Banka, Bihar, while being successfully replicated in several other districts across India.; Topics where it...

Vidyadaan Campaign - Bahraich, Uttar Pradesh

To enhance primary education by facilitating weekly interactions between students and intellectuals from various fields, promoting good values and ethics. Impact;; The initiative in Bahraich, involving over 400 Government Primary Schools, has yielded positive results with volunteers actively participating and students benefiting from the guidance and values imparted by intellectuals.; Topics where it can be Applied...

Establishing Model Anganwadi Centres - Ramgarh,

The scheme aims to improve learning outcomes and health standards by upgrading Anganwadi facilities and incorporating community outreach programs. Impact; Its impact includes enhanced educational quality and better nutrition and hygiene practices among children and families.; Topics where it can be Applied: Early Childhood Care, Capacity Building.; How to Use;; Discuss the role of model anganwadis in improving early...

My School - My Pride Initiative - Nashik,

To reconnect alumni with their former Zilla Parishad schools and mobilise community support for improving school infrastructure, learning resources, and student motivation. Impact: Nearly 58,995 alumni participated across 3,240 Zilla Parishad schools in Nashik. They contributed around ₹3.41 crore, including ₹65.76 lakh in cash and materials worth ₹2.74 crore. Contributions included educational material, sports...

Padhe Dantewada, Likhe Dantewada - Dantewada,

To improve learning outcomes in remote areas by using digital tracking, level-based learning, local- language teaching material, teacher training, and health monitoring of students. Impact: The initiative covered more than 38,000 students, 2,493 teachers, and 885 public schools through the Padhe Dantewada mobile application. Over 2,000 teachers were trained in digital literacy. After implementation, students unable...

Viksit Kaushambi Abhiyaan - Kaushambi, Uttar Pradesh

To increase student attendance and improve education quality by revitalizing school infrastructure, strengthening monitoring, mobilizing community participation, and introducing technology-enabled learning. Impact: The initiative improved average school attendance from 54% to 78%. School renovation increased from 109 to 158 schools, showing a 45% improvement. A total of 83 primary schools, 26 upper primary schools...

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