



India's #1 Self-Study Notes

crack
IAS.com

📞 **92170 70707**
crackiasquery@gmail.com

www.crackIAS.com

Introduces the most scientific & easiest way of preparing

CURRENT AFFAIRS

SUBJECT-WISE NEWS

◀ SOURCES ▶

PIB » The Hindu » Live Mint » HT » TOI » RBI ET » Indian Express
PRS Blog » IDSA » Government of India & UNO Official Sites
NASA & Nature into these subject separately.



Subject-wise News for
GS (Pre-cum-Mains) 2019
every Month

Download your copy from crackIAS.com

Monthly Archive on subject wise news for **GS Pre & Mains**

Index

| | |
|--|----|
| Antarctica was home to rainforests 90 million years ago: Study | 2 |
| Ionospheric based monitoring of large earthquakes – a plausible space based proxy to derive the seismic source characteristics | 5 |
| Travelling new paths | 9 |
| Exploring ‘Super-luminous supernovae exploded rapidly and decayed slowly’ | 11 |
| First merger of two black holes with unequal masses detected | 14 |
| Great Barrier Reef suffers massive coral bleaching | 16 |
| Jal Shakti Abhiyan gears up for monsoon | 17 |

ANTARCTICA WAS HOME TO RAINFORESTS 90 MILLION YEARS AGO: STUDY

Relevant for: Geography | Topic: The Earth, its Evolution and Origin of Life on Earth

This acrylic painting shows the palaeo-environmental conditions that could be reconstructed for the drilling area. The painting was created on the basis of the diverse scientific evidence being obtained from the drill core. | Photo Credit: [Alfred-Wegener-Institut, James McKay under Creative Commons licence C-BY 4.0](#)

Researchers have unearthed evidence of rainforests near the South Pole 90 million years ago, a finding which suggests that the climate at this time was exceptionally warm with a higher level of carbon dioxide in the atmosphere than previously thought.

The scientists, including those from Imperial College London in the UK, discovered forest soil pertaining to a time between 145 and 66 million years ago within 900 kilometres of the South Pole.

In the study, [published in the journal Nature](#), they analysed preserved roots, pollen, and spores from this soil, and showed that the world at that time — the Cretaceous period — was a lot warmer than previously thought.

“The preservation of this 90-million-year-old forest is exceptional, but even more surprising is the world it reveals,” said study co-author Tina van de Flierdt from Imperial College London.

“Even during months of darkness, swampy temperate rainforests were able to grow close to the South Pole, revealing an even warmer climate than we expected,” van de Flierdt said.

According to the study, the carbon dioxide levels in the atmosphere were higher than expected during the mid-Cretaceous period, 115-80 million years ago, challenging current climate models of the period.

The mid-Cretaceous was the heyday of the dinosaurs but was also the warmest period in the past 140 million years, with temperatures in the tropics as high as 35 degrees Celsius, and sea level 170 metres higher than today, the scientists said.

However, they said, very little is known about the environment south of the Antarctic Circle at this time.

The scientists compared the current evidence of a temperate rainforest in the region to what is found in New Zealand today.

They said the finding is even more significant considering that the South Pole experiences only a four-month polar night, meaning for a third of every year there is no life-giving sunlight at all.

According to the researchers, the presence of the forest suggests average temperatures in this region were around 12 degrees Celsius, with little likelihood for the presence of an ice cap at the South Pole at the time.

The study noted that the evidence for the Antarctic forest is based on a core of sediment drilled into the seabed near the Pine Island and Thwaites glaciers in West Antarctica.

One section of the core, they said, caught their attention with its strange colour.

On scanning this section with an X-ray CT scan, the scientists discovered a dense network of fossil roots, which was so well preserved that they could make out individual cell structures.

The samples noted in the study also contained countless traces of pollen and spores from plants, including the first remnants of flowering plants ever found at these high Antarctic latitudes.

To reconstruct this ecology, the team assessed the climatic conditions under which the plants' modern descendants live, as well as analysing temperature and rainfall indicators within the sample.

They found that the annual mean air temperature was around 12 degrees Celsius.

Putting this in perspective, the researchers said this is roughly two degrees warmer than the mean temperature in modern-day Germany.

They believe the average summer temperatures may have been around 19 degrees Celsius and water temperatures in the rivers and swamps to be 20 degrees. According to the study, the amount and intensity of rainfall in West Antarctica at this time may have been similar to those in today's Wales.

The scientists concluded that about 90 million years ago the Antarctic continent may have been covered with dense vegetation, with no land-ice masses on the scale of an ice sheet in the South Pole region.

They believe the carbon dioxide concentration in the atmosphere was far higher than previously assumed for the Cretaceous period.

"Before our study, the general assumption was that the global carbon dioxide concentration in the Cretaceous was roughly 1000 ppm," said lead author Johann Klages from the Alfred Wegener Institute in Germany.

"But in our model-based experiments, it took concentration levels of 1120 to 1680 ppm to reach the average temperatures back then in the Antarctic," Klages said. PTI VIS VIS VIS 04021114

You have reached your limit for free articles this month.

Register to The Hindu for free and get unlimited access for 30 days.

Already have an account ? [Sign in](#)

Sign up for a 30-day free trial. [Sign Up](#)

Find mobile-friendly version of articles from the day's newspaper in one easy-to-read list.

Enjoy reading as many articles as you wish without any limitations.

A select list of articles that match your interests and tastes.

Move smoothly between articles as our pages load instantly.

A one-stop-shop for seeing the latest updates, and managing your preferences.

We brief you on the latest and most important developments, three times a day.

*Our Digital Subscription plans do not currently include the e-paper ,crossword, iPhone, iPad mobile applications and print. Our plans enhance your reading experience.

Why you should pay for quality journalism - [Click to know more](#)

Please enter a valid email address.

Developed by Pune-based start-up incubatee of Scitech Park

Subscribe to The Hindu now and get unlimited access.

Already have an account? [Sign In](#)

Sign up for a 30-day free trial. [Sign Up](#)

To continue enjoying The Hindu, You can turn off your ad blocker or [Subscribe to The Hindu](#).

[Sign up for a 30 day free trial.](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

Crackin

IONOSPHERIC BASED MONITORING OF LARGE EARTHQUAKES – A PLAUSIBLE SPACE BASED PROXY TO DERIVE THE SEISMIC SOURCE CHARACTERISTICS

Relevant for: Geography | Topic: Important Geophysical phenomena - Earthquakes, Tsunamis & Volcanoes

Ministry of Science & Technology

Ionospheric based monitoring of large earthquakes – a plausible space based proxy to derive the seismic source characteristics

Posted On: 06 APR 2020 3:25PM by PIB Delhi

Scientists of Indian Institute of Geomagnetism (IIG) an autonomous institution of the Department of Science and Technology have extensively studied the signatures of recent large earthquakes into the ionosphere with an ambitious aim to derive the seismic source characteristics from the ionosphere.

While studying the 25 April 2015 Nepal earthquake, Mr. Sunil A. S, a PhD scholar working with Dr. Mala S. Bagiya, scientist at IIG, noticed that the spatial distribution of near field co-seismic ionospheric perturbations (CIP) associated with this event could reflect well the ground deformation pattern evolved around the epicentre. These CIP were derived using the Global Positioning System (GPS) measured Total Electron Content (TEC). The CIP distribution was estimated at ionospheric piercing point (IPP) altitude.

So, the characteristics of CIP could always be directly associated to the tectonic forcing? Mostly yes, provided the effects of non-tectonic forcing mechanisms which are operative at ionospheric altitudes are favourable. The spatial/azimuthal distribution of near field CIP associated with Mw 7.8 Nepal earthquake, which could successfully be linked to the co-seismic crustal deformation, is explained as the combined effect of tectonic forcing manifestations and non-tectonic forcing mechanism of geomagnetic field-acoustic wave coupling.

As part of the interdisciplinary program 'Coupled Lithosphere-Atmosphere- Ionosphere-Magnetosphere System (CLAIMs)' of Indian Institute of Geomagnetism funded by DST the research focused on energy transfer to the atmosphere during solid Earth processes such as earthquakes as well as tsunamis.

In general, the Earth crust uplift during any earthquake produces compressional (i.e. pressure) waves in the overlying atmosphere. These waves propagate upward in the region of exponentially decreasing atmospheric neutral density, and thus, its amplitudes increase with atmospheric heights. On arrival at ionospheric heights, the waves redistribute ionospheric

electron density and produce electron density perturbations known as co-seismic ionospheric perturbations (CIP). The thrust earthquakes induce significant crustal uplift, while the strike-slip event mostly deforms the crust horizontally. Various ionospheric sounding techniques can be used to study the CIP characteristics. However, the TEC derived from Global Navigation Satellite Systems (GNSS) gives large spatial and temporal coverage over seismic source region," the scientists explained.

"Evolution of seismic/tectonically induced ionospheric perturbation is highly controlled by the non-tectonic forcing mechanisms of satellite geometry, geomagnetic field-acoustic wave coupling and the ambient ionization density of ionosphere. The effects of these non-tectonic forcing mechanisms at ionospheric altitudes are quantified based on the in-house developed acoustic ray tracing model," they added.

The scientists also successfully associated the observed ionospheric disturbances during a seismic event exclusively to the event by studying the ionospheric variation during the Indian Ocean doublet earthquake on 11 April 2012, a largest ever recorded strike-slip event (Mw. 8.6) that followed by a powerful aftershock of Mw 8.2, the highest ever recorded aftershock. These two earthquakes occurred in the same geographic region (epicentres apart by ~176 km) within a time delay of ~2 hours.

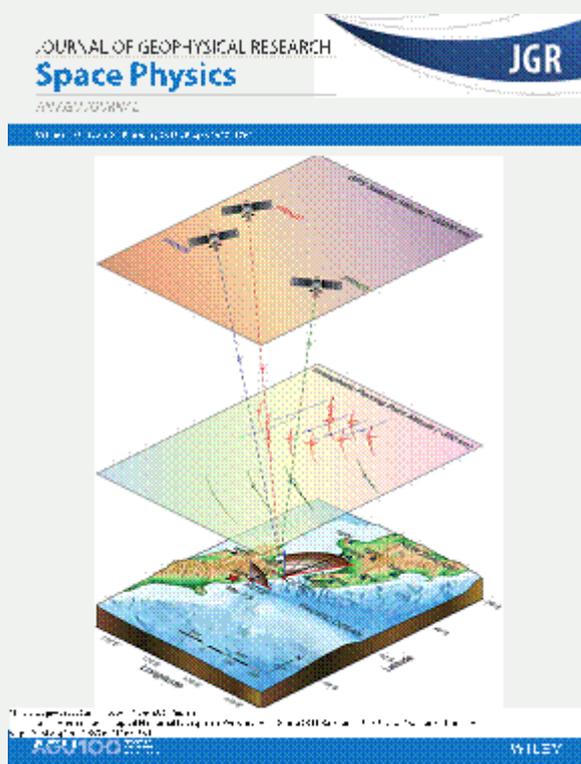
Analysing the ionospheric perturbations during another Nepal earthquake which occurred on 12 May 2015 (Mw 7.3), the researcher further demonstrated that how the non-tectonic forcing mechanisms influence the amplitude and horizontal propagation of CIP at IPP altitudes. They noticed that the evolution of near field CIP related with the Mw 7.3 Nepal earthquake was highly affected by the non-tectonic forcing mechanism of moving satellite geometry and as a result the CIP could not evolve in accordance with ground deformation pattern.

Moving a bit ahead from this, they attempted to observe the seismic source characteristic from the ionosphere during the massive Mw 7.8 Kaikoura earthquake 2016 which occurred in the complex multisegmented fault system between the Australia-Pacific plate boundary with a combination of vertical and differently oriented horizontal crust movements. Interestingly, the characteristics of CIP based on tectonic and non-tectonic forcing mechanisms revealed that the two distinct thrust zones over the rupture area resulted from the uplift with reinforcement of rotating horizontal motion from the epicenter acted as key tectonic sources for the peculiar distribution of CIP around the Kaikoura epicentre.

Thereby, by investigating the response of ionosphere to recent major earthquake events, the scientists at IIG have tried to derive the earthquake source parameters using seismic induced ionospheric perturbations by taking into consideration the non-tectonic forcing mechanisms.

The ionosphere is a highly dynamic region and the origin of any perturbations in ionospheric

electron density can be traced to various origins either from above (e.g. solar, geomagnetic etc) or below (e.g. lower atmospheric, seismic etc) the ionosphere. This probes a major challenge while identifying the co-seismic ionospheric perturbations. Further, the manifestation of co-seismic ionospheric perturbations has to be seen in light of the prevailing non-tectonic forcing mechanisms. In this line, it is believed that the present extensive study may assist while designing a tool for the ionospheric based seismic source characterisation.



{Contact details

Mala Bagiya

Email: mala@iigs.iigm.res.in and bagiyamala@gmail.com

Mob: 9773423820

Sunil Kumar

email: sunnil.as@gmail.com

Mob: +91 9819645971}

KGS/(DST)

(Release ID: 1611606) Visitor Counter : 293

Read this release in: [Bengali](#) , [Tamil](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

TRAVELLING NEW PATHS

Relevant for: Geography | Topic: Factors responsible for location of Tertiary sector Industries incl. Tourism in world & India and related issues

The [COVID-19 pandemic](#) has caused unimaginable damage to global tourism, travel, and the hospitality industry. It has not only caused huge loss of lives and continues to do so, but is leaving behind a trail of havoc on the world's economies. I have been part of the hospitality industry for over four decades and seen many cycles of downturn. But never before has there been so much panic, despair and hopelessness as caused by COVID-19.

I was based in the UK at Taj's St James Court Hotel, London, when the horrific 9/11 attacks took place in New York. They shook the US and the rest of the world. The attacks brought travel by air in particular to a grinding halt. Security at airports got a new definition and the tourism and hospitality industries went into a tailspin. The measures put out by the US ensured that they raised their security levels to unprecedented levels and restored faith in travel in a fairly short period of time.

The SARS epidemic of 2003 that struck China, Hong Kong and some parts of South East Asia was another health calamity that took 774 lives. It caused losses of about \$28 billion and decreased China's GDP by 1 per cent. Since then, there have been many more global emergencies ranging from wars, earthquakes to havoc caused by environment degradation and climate change. Each of these has impacted tourism directly or indirectly but none as calamitous as COVID-19.

It is too early to predict accurate figures for global losses in tourism. We are in the midst of the crisis and tourism is hardly a priority for the world. However, the World Travel and Tourism Council estimates that the tourism industry stands to lose 50 million jobs and see a 25 per cent decline in global travel. Imagine if 8,50,000 people who travel between Europe and America each month stop doing so! The estimated loss to the US economy is \$8.5 billion. The estimated loss to the sector in India is currently pegged at a daunting Rs 5 lakh crore and job losses to the tune of four crore to five crore. These figures could change depending on how long it takes for nations to control the virus.

For now, millions who work in restaurants, bars, airlines and cruises, online and traditional travel companies, ground agents, event management companies, and many others have seen a sudden halt in business resulting in job losses and bankruptcies. The industry is largely dependent on masses of people traveling around the world and millions within cities, who use restaurants and bars. It is a big blow when business is down to zero.

Industry associations in India have reached out for government intervention on many fronts. The requests include a 12-month moratorium on EMIs of interest and principal payments on loans and working capital from banks and NBFCs, deferment of dues such as advance tax, GST, PF ESIC, to name a few, for about 12 months, and a GST holiday to the travel and tourism industry for at least a year.

The airline industry would benefit enormously if the government considers levying GST on Air Turbine Fuel, which will enable them to get input tax credit and be a big relief for all domestic carriers. These are reasonable requests. I am very hopeful that the industry voice will be heard.

In the aftermath of COVID-19, we must accept that epidemics and virus breakouts may return to haunt us again in the future. Preparedness should be our key takeaway from this experience.

The rise of global terrorism got hotels to up their security measures. The primary focus has been to screen bags and individuals for metal objects, explosives, guns and the like. Moving forward, technology will play a significant role in ensuring one goes through a machine that disinfects you before you enter hotels and offices. Plast Group in Turkey has already developed Ikarus, a device for hotels that disinfects people before they enter the premises. A money-cleaning ATM, also in Turkey, disinfects paper bills to tackle spread of COVID-19. Tech interventions will create minimum physical touch points in hotels.

Hotels of the future may need to be equipped with basic protective equipment such as masks, infra thermometers, gloves and a set or two of PPEs. A standard quarantine room that meets the prescribed standards laid down by local health authorities will have to be kept ready. Hotels will have to revisit housekeeping standard operating procedures. The government, along with the industry, will have to prescribe minimum hygiene and sanitation guidelines and compliance standards.

The conversion of hotels into makeshift healthcare centres or isolation camps will be a new normal. This is already happening in big metros like Delhi and Mumbai in India while dealing with COVID-19. The Taj recently offered rooms to healthcare workers at its hotels in Mumbai and Delhi. In future, pre-earmarked hotels, approved by the government, will stay prepared for a swift transition and be able to offer such services at short notice.

Hopefully, the tourism, travel and hospitality industry will spring back to business sooner than later. As an eternal optimist, I do believe that the rebirth of tourism is imminent, but will it be the same industry that we have all gotten so used to? It is a tough question with no easy answers for now. Travel and hospitality will have to redefine and reimagine itself in more ways than ever.

The writer is former senior vice-president operations, IHCL-Taj Group, and group advisor-hospitality, Hiranandani Group, Mumbai

The Indian Express is now on Telegram. Click [here to join our channel \(@indianexpress\)](#) and stay updated with the latest headlines

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

EXPLORING 'SUPER-LUMINOUS SUPERNOVAE EXPLODED RAPIDLY AND DECAYED SLOWLY'

Relevant for: Geography | Topic: The Earth and the Solar System

Ministry of Science & Technology

Exploring 'Super-luminous supernovae exploded rapidly and decayed slowly'

Posted On: 23 APR 2020 2:38PM by PIB Delhi

Researchers at the Arayabhatta Research Institute of Observational Sciences (ARIES) Nainital an autonomous research institute under the Department of Science and Technology (DST) Govt. of India found that SN 2010kd, a super-luminous supernova stands out with the amount of mass as well as Nickel ejected during explosion, which is much more than seen in case of normal core-collapse supernovae.

Supernovae are a kind of energetic explosions where the core of massive stars (a few times to that of mass of our Sun) go to a catastrophic phase of explosion liberating huge amounts of energy. These events are visible through very far away distances much beyond our own solar system. Super-luminous supernovae are a special type of stellar explosions having energy output 10 or more times higher than that of standard supernovae.

The scientists said that the larger ejected mass of Super-luminous supernovae SN 2010kd indicates that the related star evolution might be different from other possible progenitors of normal core-collapse supernovae with a different possible underlying physical mechanism responsible for producing such energetic supernovae with large ejected mass and Ni. It exploded with a larger velocity but decayed slower than other similar supernovae.

The super-luminous supernova titled SN 2010kd is rather nearby -- approximately at a distance of 1.5 Giga light-years discovered by Robotic Optical Transient Search Experiment (ROTSE-IIIb) telescope as a part of ROTSE supernova verification project in the USA on 14 November 2010 embedded in a dwarf host galaxy towards Leo constellation.

In the study published in the journal *Astrophysical Journal* led by Amit Kumar, a Ph.D.

student at ARIES Nainital working under Dr. S. B. Pandey along with contributions by Prof. Carl Akerlof (Uni. of Michigan, Ann Arbor), Prof. J. Craig Wheeler (Uni. of Texas, Austin), Prof. Jozsef Vinko (Uni. Of Szeged, Hungary) and other team members analysed all the data of this super-luminous supernova SN 2010kd in the light of known physics and proposed models. They carried out analytical light-curve modeling of the optical data taken from ROTSE IIIb and 1.04m Sampurnanand Telescope and spectral modeling of the data taken using 8-10m class optical telescopes for this supernova. The data was also compared with the know published a set of more than half a dozen of similar supernovae around similar distances.

The observations of the scientists show that parameters like rotation and metallicity play a crucial role in stellar explosions and that there are many more types of possible progenitors existing in diverse environments in their host galaxies than previously known.

Comparing the line velocities as obtained using spectral modeling, the scientists showed that SN 2010kd exploded with a larger velocity but decayed slower than other similar supernovae. The ejected mass of the Oxygen and estimated values of luminosity of other spectral lines was also found to be higher for SN 2010kd.



Fig 1: A typical cartoon explaining a supernova explosion (acknowledgment for the figure <https://www.ecomagazine.com/news/science/cosmic-energy-from-supernovae-may-have-wiped-out-large-ocean-animals-study-suggests>).

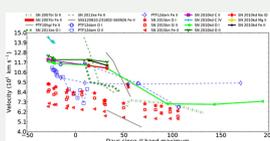


Fig 2: Line velocities of SN 2010kd are compared with a set of well-studied SLSNe I at comparable redshift. In comparison to SN 2010kd, fast-decaying SLSNe, as well as PTF12dam, appear to have velocities with steeper decay rates, whereas SN 2015bn seems to have lower velocity values with similar decay rates. Kumar et al. (2020)

[Publication: Astrophysical Journal, volume 892 March 2020,

<https://iopscience.iop.org/article/10.3847/1538-4357/ab737b/pdf>).

Amit Kumar (amit@aries.res.in, 7015907061) and Dr. S. B. Pandey (shashi@aries.res.in, 9557470888) can be contacted for further details.]

KGS/(DST)

(Release ID: 1617430) Visitor Counter : 285

Read this release in: [Tamil](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

Crackin

FIRST MERGER OF TWO BLACK HOLES WITH UNEQUAL MASSES DETECTED

Relevant for: Geography | Topic: The Earth and the Solar System

Gravity: The black hole's spin drags along the nearby space-time.

For the first time since it started functioning, the gravitational wave observatories at LIGO scientific collaboration have detected a merger of two unequal-mass black holes. The event, dubbed GW190412, was detected nearly a year ago, and this is almost five years after the first ever detection of gravitational wave signals by these powerful detectors. Subsequent analysis of the signal coming from the violent merger showed that it involved two black holes of unequal masses coalescing, one of which was some 30 times the mass of the Sun and the other which had a mass nearly 8 times the solar mass. The actual merger took place at a distance of 2.5 billion light years away. This study has been published in preprint server *ArXiv*, and is pending peer review.

The detected signal's waveform has special extra features in it when it corresponds to the merger of two unequal-sized black holes as compared with a merger of equal-sized black holes. These features make it possible to infer many more things about the characters in this celestial drama, namely, a more accurate determination of the distance from the event, the spin or angular momentum of the more massive black hole and the orientation of the whole event with respect to viewers on Earth.

While the mass of the black hole bends the space-time close to it, the spin or angular momentum of this inscrutable object drags the nearby space-time, causing it to swirl around, along with it. Hence both these properties are important to estimate.

Pointing out the difference between binary black holes with equal masses and those with different masses, K.G. Arun of Chennai Mathematical Institute (CMI), says, "Dominant emission of gravitational waves happens at twice the orbital frequency of the binary... In this case, we find, for the first time, emission at a frequency that is three times the orbital frequency. This emission is negligible when binaries contain equal masses and when the orbit is face-on. GR has a unique prediction for the details of this emission which is verified by this observation."

Anand Sengupta of IIT Gandhinagar, along with Prof. Arun and Phd scholar Soumen Roy from IIT Gandhinagar made important contributions to this analysis. The trio worked on the contribution to the signal from higher harmonics which form a fainter component to the signal. "Following this a sophisticated statistical analysis was performed to measure the strength of the sub-dominant component and its statistical significance, by calculating the odds that it was not a false positive. For instance, that it was not some instrumental noise mimicking this effect," says Prof. Sengupta. "The asymmetry in the masses made the feeble higher harmonic component better 'heard', leading to its unambiguous detection," he adds.

Also, in the case of the merger of unequal black holes, the spin of the more massive black hole can be determined from the extra features in the signal waveform. "The spin of the heavier black hole plays a more prominent role in the dynamics of the binary. Hence, it leaves a stronger imprint on the waveform, making it easy to measure," says Prof. Arun.

A second Indian team consisting of researchers from ICTS-TIFR, Bengaluru, verified the consistency of the signal with the prediction of General Relativity.

The existence of higher harmonics was itself a prediction of General Relativity.

You have reached your limit for free articles this month.

Register to The Hindu for free and get unlimited access for 30 days.

Already have an account ? [Sign in](#)

Sign up for a 30-day free trial. [Sign Up](#)

Find mobile-friendly version of articles from the day's newspaper in one easy-to-read list.

Enjoy reading as many articles as you wish without any limitations.

A select list of articles that match your interests and tastes.

Move smoothly between articles as our pages load instantly.

A one-stop-shop for seeing the latest updates, and managing your preferences.

We brief you on the latest and most important developments, three times a day.

*Our Digital Subscription plans do not currently include the e-paper ,crossword, iPhone, iPad mobile applications and print. Our plans enhance your reading experience.

Why you should pay for quality journalism - [Click to know more](#)

Please enter a valid email address.

Subscribe to The Hindu now and get unlimited access.

Already have an account? [Sign In](#)

Sign up for a 30-day free trial. [Sign Up](#)

To continue enjoying The Hindu, You can turn off your ad blocker or Subscribe to The Hindu.

[Sign up for a 30 day free trial.](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

GREAT BARRIER REEF SUFFERS MASSIVE CORAL BLEACHING

Relevant for: Geography | Topic: Islands & Coral Reefs, changes therein and in Flora & Fauna and the Effects of such changes

The Great Barrier Reef, the world's largest coral reef ecosystem located in Australia, recently experienced its third major bleaching event in five years.

It is considered to be the most widespread coral bleaching event on record, owing to the rise in temperatures due to climate change.

The Great Barrier Reef contains the world's largest collection of coral reefs, with 400 types of coral, 1,500 species of fish and 4,000 types of molluscs. No other World Heritage property contains such biodiversity.

It has suffered several mass bleaching events in the past due to warmer than normal ocean temperatures. Researchers are constantly experimenting with new ways to save the Great Barrier Reef.

Also read | [AI to protect coral reefs, marine life, \\$9.6 bn worth tourism, 1 billion livelihoods](#)

Underwater surveys will be carried out to assess the extent of the damage this time.

Why you should pay for quality journalism - [Click to know more](#)

Please enter a valid email address.

Animal rights activists in India, U.S.A. call for phasing out captive creatures

To continue enjoying The Hindu, You can turn off your ad blocker or [Subscribe to The Hindu](#).

[Sign up for a 30 day free trial.](#)

END

Downloaded from [crackIAS.com](#)

© **Zuccess App** by crackIAS.com

JAL SHAKTI ABHIYAN GEARS UP FOR MONSOON

Relevant for: Geography | Topic: Distribution of key natural resources - Water Resources incl. Rivers & related issues in world & India

Ministry of Jal Shakti

Jal Shakti Abhiyan gears up for monsoon

Posted On: 28 APR 2020 7:07PM by PIB Delhi

‘Jal Shakti Abhiyan’—is all set to combat the present health crisis and give a boost to the rural economy through its various components. This year owing to the COVID-19 emergency, and availability of large labour force in rural areas, the Abhiyan has started gearing up for the impending monsoon.

In a first of its case a Joint Advisory has been issued from the Department of Rural Development, Dept. of Water Resources, River Development & Ganga Rejuvenation, Dept. of Land Resources & Dept of Drinking Water & Sanitation to all the Chief Secretaries of all States/UTs, in context with the impending monsoon this year and the preparations to be done for water conservation and recharge which is of utmost importance for our country.

Last year Jal Shakti Abhiyan was launched and it covered 256 water stressed districts across the country. This ‘Abhiyan’ is a mass movement to bring all the stakeholders under one ambit of water conservation drive, and last year it had a nationwide impact. Under this Abhiyan more than six and a half crore people became part comprising of State Govts, Central Govt, Civil Society Organisations, Panchayati Raj Institutions and Communities. More than seventy-five lakh traditional and other water bodies and tanks were renovated and around a crore water conservation & rainwater harvesting structures were created.

Encouraged by the response, a wider and more intensive strategy was planned for this year. But owing to the current health emergency, Central Govt officials will not be deployed in Abhiyan this summer. In view of it, it will be ensured that all available resources be optimally deployed to catch the rain during the monsoon this year and preparatory activities are also well placed.

Ministry of Home Affairs have allowed to take up MNGREGS works/ drinking water & sanitation works during lockdown with priority to be given to irrigation and water conservation works. Central and State sector schemes in irrigation and water conservation sectors have also been allowed to be implemented with suitable dovetailing with MNREGS works. It will be further ensured that all works are undertaken with strict implementation of social distancing, use of face covers/ masks and other necessary precautions. Rejuvenation of traditional water bodies, removal of encroachments in the water bodies, desilting of lakes & ponds, construction/ strengthening of inlets/outlets, catchment area treatment can be taken up on priority. Similarly, rejuvenation of small rivers through community driven River Basin Management practices may also be initiated. Such activities would ensure water source sustainability in rural areas and would strengthen the ongoing Jal Jeevan Mission being implemented by Ministry of Jal Shakti. In addition to it the Village Action Plan (VAP) prepared by local community for Jal Jeevan Mission will provide a solid framework to the rural activities.

PK/sk

(Release ID: 1619025) Visitor Counter : 319

Read this release in: [Hindi](#) , [Assamese](#) , [Punjabi](#) , [Gujarati](#) , [Telugu](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com