



ENVIS CENTRE, CHANDIGARH

NewsLetter

P a r y a v a r a n - P a t r a

Chandigarh State of Environment

Ambient Air Quality of Chandigarh During Diwali

EDITORIAL

India is nation of festivals and so is its Union Territory, the city beautiful, Chandigarh. People of all religions and faiths are located in the various sectors of this planned city. The joy of conquering the evil is celebrated by cracking firecrackers, lighting earthen lamps, and nowadays, more decorative electronic gadgets. The night of Diwali glows despite of the fact that there is no moon in the sky.

As every coin has two sides, festivals have other side too. As a rule, consumption of non-renewable energy resources adds to pollutants and irreversible loss. Firecrackers from production to consumption are source of pollution in addition to recreational noise and light. As the consumption of electricity adds pollutant at source of production of electricity, additional consumption means additional pollutants.

The major pollutants that are studied in Chandigarh are RSPM, SO₂, and NO_x. Out of these RSPM is the most dangerous. Quoted in 'Respirable Particular Matter and its Health Effects' by Chairman, CPCB is "Respirable suspended particulate matter (RSPM) is a causative agent of mortality and morbidity. Fine particles on their own or with combination with other air pollutants are linked with a number of health problems like premature death, aggravated asthma, acute respiratory symptoms including aggravated coughing and difficult or painful breathing, chronic bronchitis and decreased lung function."



Thousands of students of Chandigarh pledged to say 'NO' to crackers this Diwali.

It's encouraging to see people mull over bursting firecrackers as negligent form of celebration nowadays. We must promote the traditional way of celebrating Diwali by decorating with lamps and people having fun with sparklers and less polluting firecrackers. But I am pleased that residents are coming forward to celebrate Diwali sans pollution. Present edition focuses on RSPM and NO_x as SO₂ stays well within the permissible limits.

Director, Environment

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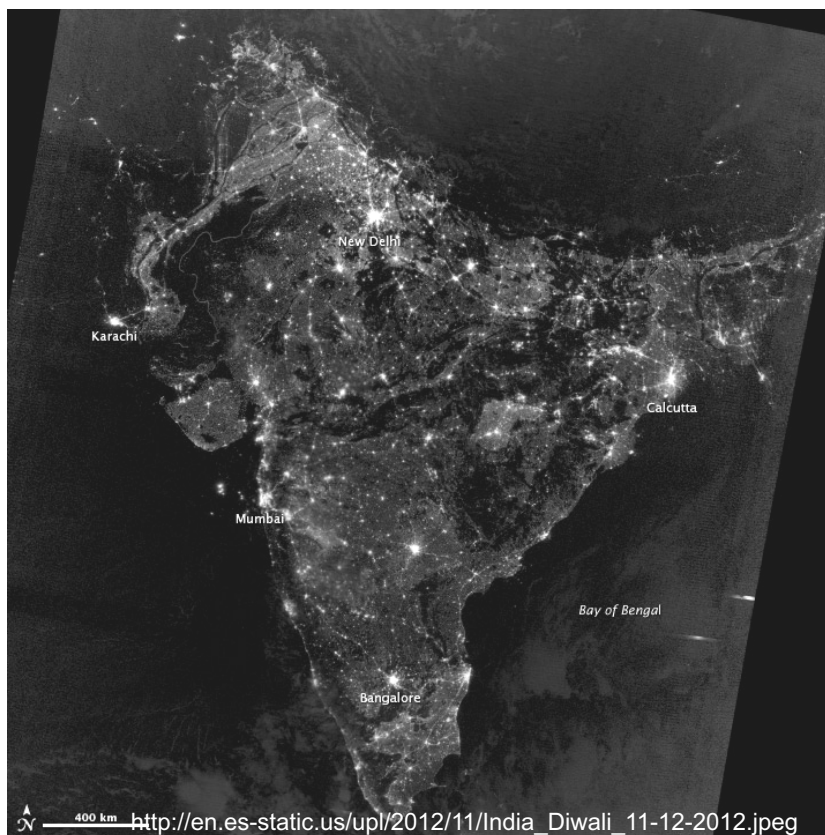
★ NASA released Map of India on Diwali Night

NASA, the national space agency of the U.S., on Thursday released a black and white satellite imagery of India Diwali night 2012, cautioning people against the fake image in circulation on the social media.

“On November 12, 2012, the Visible Infrared Imaging Radiometer Suite (VIIRS) on the Suomi NPP satellite captured this night-time view of southern Asia,” NASA said releasing a picture of India on this Diwali night.

“The image is based on data collected by the VIIRS ‘day- night band’, which detects light in a range of wavelengths from green to near-infrared. The image has been brightened to make the city lights easier to distinguish,” it said.

NASA said most of the bright areas in the imagery released by it are cities and towns in India. “India is home to more than 1.2 billion people and has 30 cities with populations over 1 million,” it said. <http://www.thehindu.com/>



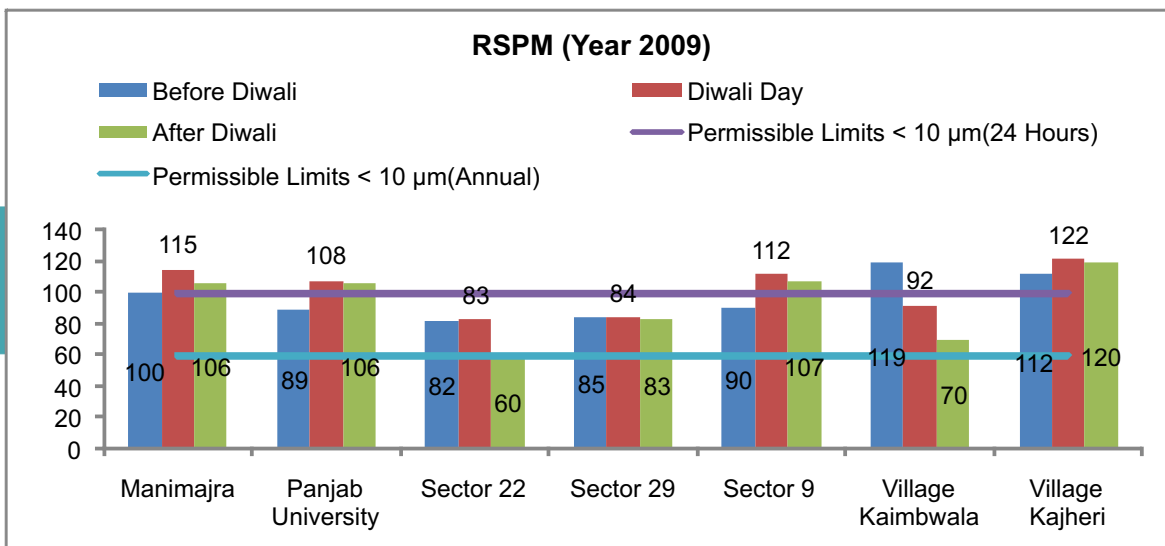
★ Crackers and Related Issues

The byproducts of burning crackers are pollutants such as sulphur dioxide, carbon dioxide, carbon monoxide etc. These pollutants cause ailments like asthma and bronchitis. The elderly, patients in hospitals and the kids preparing for study etc. suffer. The animal and birds get affected too. Though Supreme Court has directed to ban bursting of sound-emitting firecrackers between 10pm to 6am yet the people in name of celebrations violate the rules.

On the next day to Diwali the roads remain dirty with remnants of fireworks. The heaps of garbage including empty bottles on every nook and corner of the city are sign of misunderstanding of celebration and environment related issues.

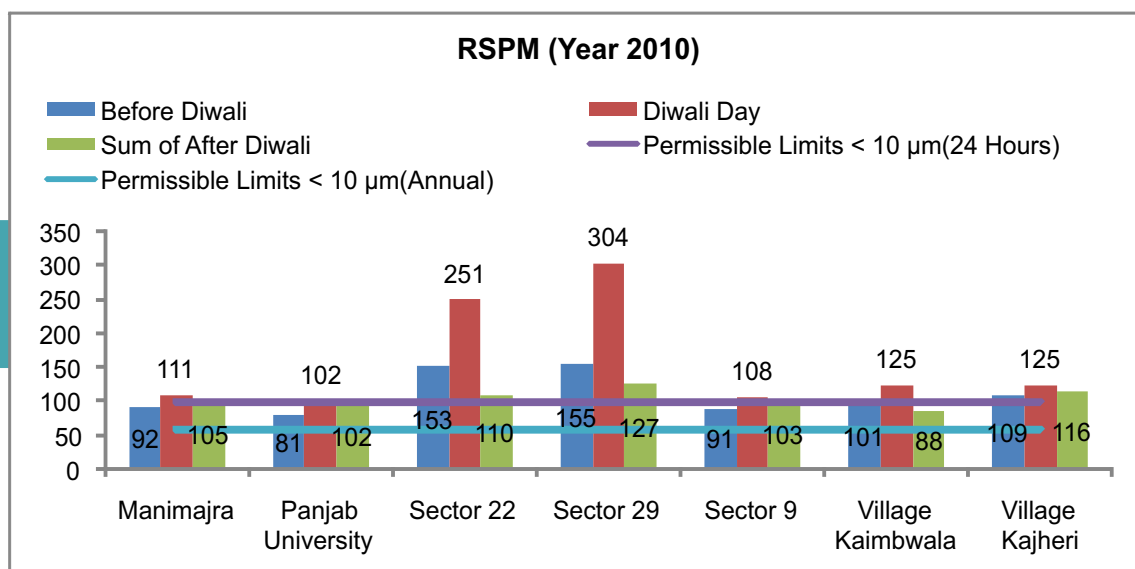


RSPM Levels in Chandigarh During Diwali

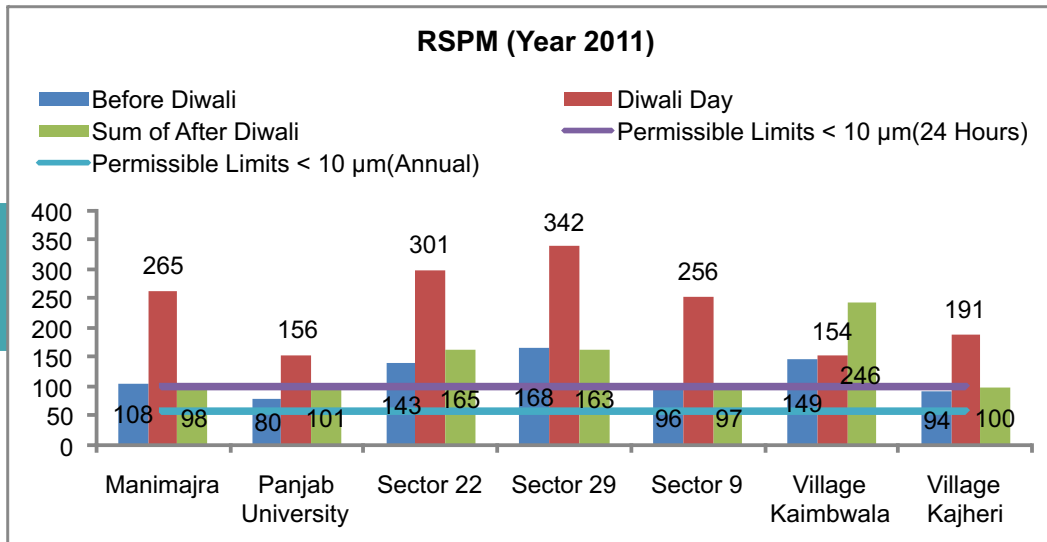


Atmospheric particulate matter, also known as particulates or particulate matter (PM), are tiny pieces of solid or liquid matter associated with the Earth's atmosphere. They are suspended in the atmosphere as atmospheric aerosol, a term which refers to the particulate/air mixture, as opposed to the particulate matter alone. However, it is common to use the term aerosol to refer to the particulate component alone. Sources of particulate matter can be manmade or natural. They can adversely affect human health and also have impacts on climate and precipitation. Subtypes of atmospheric particle matter include suspended particulate matter (SPM), respirable suspended particle (RSP; particles with diameter of 10 micrometres or less), fine particles (diameter of 2.5 micrometres or less), ultrafine particles, and soot. wikipedia.org

The permissible limits of RSPM during 24 hours monitoring are <100 and for annual average it is permissible below 60. The data of 2009 and 2010 during Diwali season at Chandigarh shows that permissible limits are crossed in all instances for annual average but at times remained within limits of standards given for 24 hours.



RSPM Levels in Chandigarh During Diwali

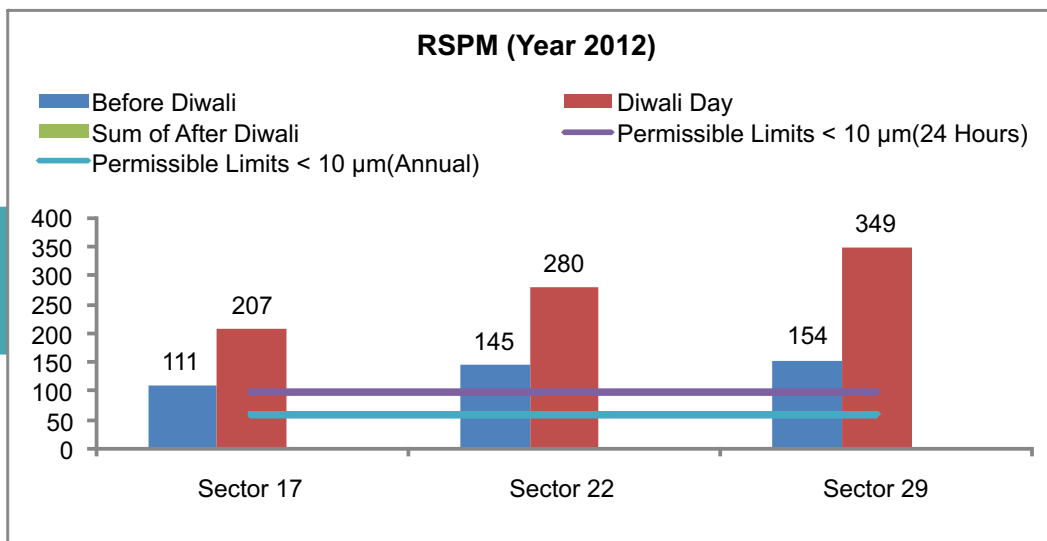


Deposition processes

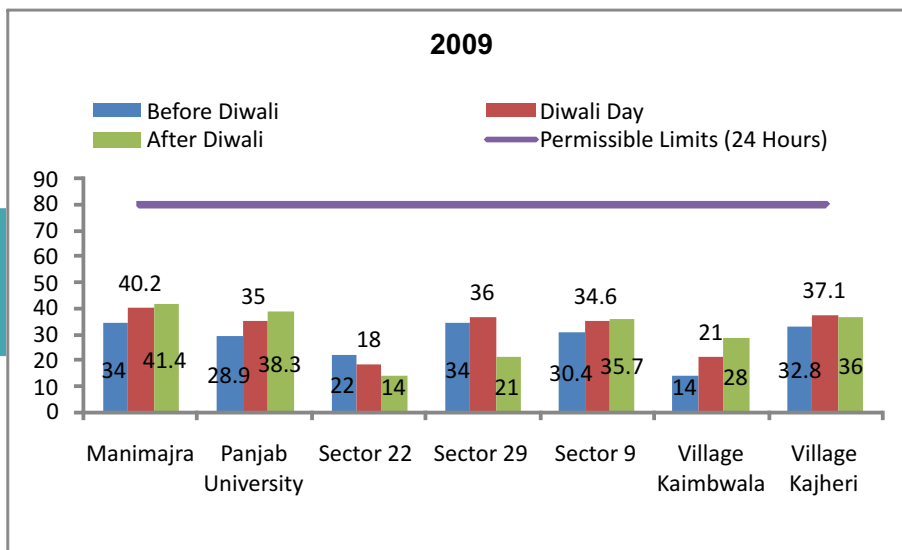
In general, the smaller and lighter a particle is, the longer it will stay in the air. Larger particles (greater than 10 micrometers in diameter) tend to settle to the ground by gravity in a matter of hours whereas the smallest particles (less than 1 micrometer) can stay in the atmosphere for weeks and are mostly removed by precipitation.

Atmospheric aerosols affect the climate of the earth by changing the amount of incoming solar radiation and outgoing terrestrial long wave radiation retained in the earth's system. This occurs through several distinct mechanisms which are split into direct, indirect and semi-direct aerosol effects.

The data of 2011 and 2012 during Diwali season at Chandigarh shows that permissible limits are crossed in all instances for annual average as well as the standards given for 24 hours. Do you also think it is worrisome?



NOx Levels in Chandigarh During Diwali

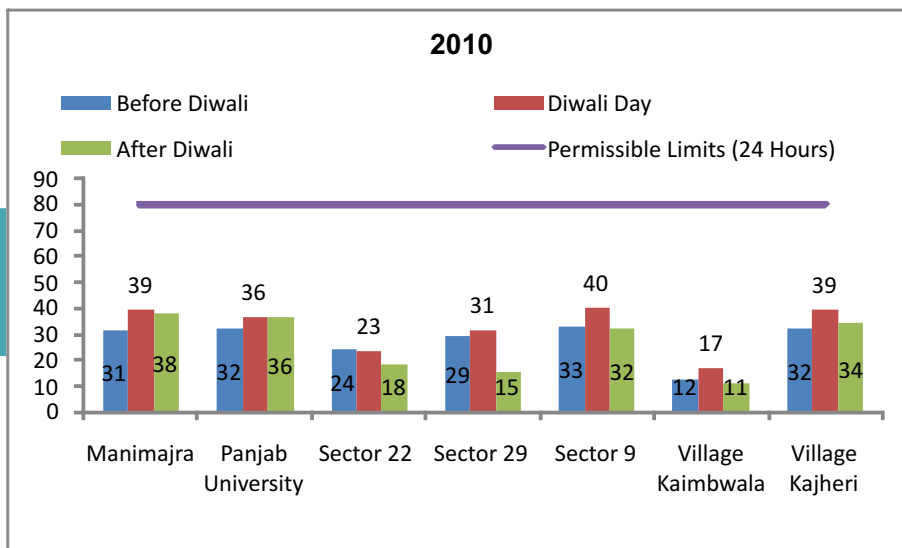


Environmental and Health Effects of NOx

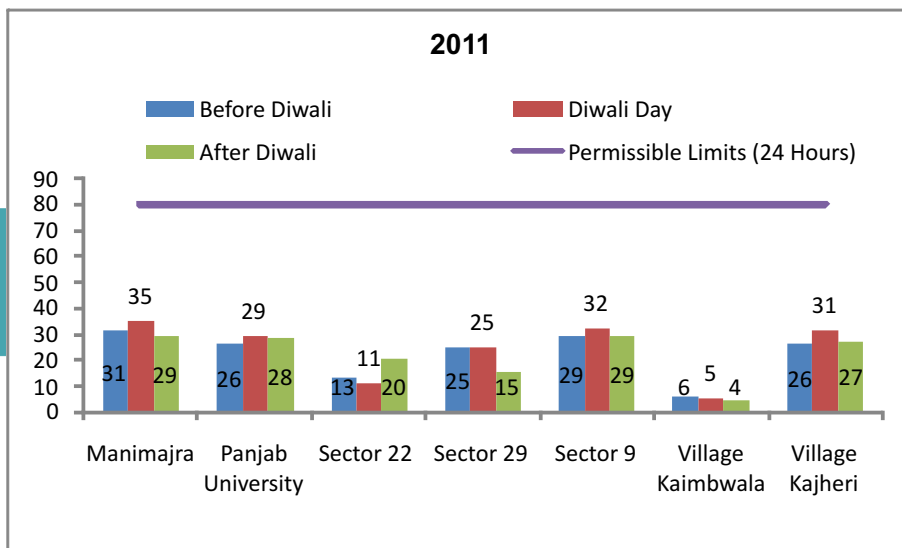
NOx reacts with ammonia, moisture, and other compounds to form nitric acid vapor and related particles. Small particles can penetrate deeply into sensitive lung tissue and damage it, causing premature death in extreme cases. Inhalation of such particles may cause or worsen respiratory diseases, such as emphysema or bronchitis, or may also aggravate existing heart disease.

NOx reacts with volatile organic compounds in the presence of sunlight to form ozone. Ozone can cause adverse effects such as damage to lung tissue and reduction in lung function mostly in susceptible populations (children, elderly, asthmatics). Ozone can be transported by wind currents and cause health impacts far from the original sources.

Nox levels in Chandigarh are well within the permissible limits.



NOx Levels in Chandigarh During Diwali



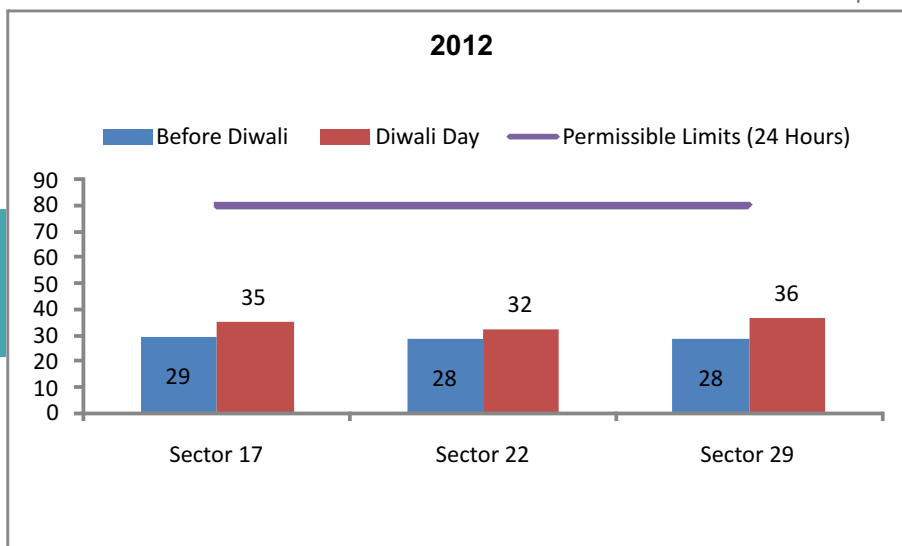
Environmental and Health Effects of NOx

NOx destroys ozone in the stratosphere. Ozone in the stratosphere absorbs ultraviolet light, which is potentially damaging to life on earth. NOx from combustion sources does not reach the stratosphere; instead, NOx is formed in the stratosphere from photolysis of nitrous oxide.

NOx also readily reacts with common organic chemicals, and even ozone, to form a wide variety of toxic products: nitroarenes, nitrosamines and also the nitrate radical some of which may cause biological mutations. Recently another pathway, via NOx, to ozone has been found that predominantly occurs in coastal areas via formation of nitryl chloride when NOx comes into contact with salt mist.



photo:belgraviacentre.com



SO₂ stays well within the permissible limits in Chandigarh.



Dear Information Seeker,

ENVIS CENTRE, Chandigarh furnishes you with the services to collect and disseminate information related to environment of Chandigarh. To share information with us you are requested to fill up the form given below.

Your feedback is valuable to us and will be highly appreciated



- Name _____
- Designation _____
- Department _____
- Address _____
- _____ City _____
- State _____ Country _____ Pin _____
- Phone _____ Fax _____
- Email _____

Your views on scope of improvement :

- Interest Area _____

I would like to have information on following :



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Experts Speak

"Diwali holds great significance for Hindus and reinforces our faith in the spirit of good over evil, but what all we receive in the aftermath is quite disturbing. The loud noise of crackers and the smoke emitted cause lot of air pollution. The noise leads to hearing impairment, high blood pressure, heart attacks and disturbed sleep whereas various accidents happen while igniting these crackers, leaving several people blind and severely burnt year after year," says Dr. Dharmveer, from the ENT Department, PGI.



<http://www.sunday-guardian.com/young-restless/go-green-this-diwali-by-saying-no-to-firecrackers>

Say 'NO' to Firecrackers

- ☞ Cause air pollution
- ☞ It takes time for the harmful gases to go away
- ☞ Cause ailments and respiratory diseases
- ☞ Cause Noise Pollution
- ☞ Leaves Garbage behind
- ☞ Babies, pregnant women, old people get affected
- ☞ Animals get scared
- ☞ Underage kids make crackers
- ☞ People get injured
- ☞ Cause fires at places
- ☞ Crackers were not invented for the celebration of Diwali
- ☞ Wastage of money and resources, directly and indirectly
- ☞ These are not the status symbol



1000 students at St. Stephen's Pledged to Say 'No' to Crackers
indianewscalling.com

Arun Bansal

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To,

Book Post

Reviewed By Mr. Shikha Aggarwal

Note : While every care has been taken in compilation of the information available for this newsletter. However, readers must make thorough confirmation/enquiries at their own level before acting upon any data/information provided to the readers. Any discrepancy brought in the notice of ENVIS CENTRE, Chandigarh will be highly appreciated.