

CLOUDBURST VULNERABILITY

Cloudbursts-sudden, intense rainfall events concentrated over a small geographical area-have emerged as a significant environmental hazard, particularly in mountainous regions like the Himalayas. These extreme weather phenomena trigger flash floods, landslides, and widespread devastation, often resulting in loss of lives, property, and infrastructure. As climate change intensifies weather patterns, the frequency and severity of cloudbursts are increasing, making it imperative to study and mitigate the vulnerabilities associated with them.

Cloudbursts are characterized by rapid accumulation of rainfall-sometimes exceeding 100 mm within an hour-over limited areas. Unlike regular rainfall, their unpredictability and intensity overwhelm natural drainage systems and man-made infrastructure, leading to flash floods. In steep terrains, such torrents cause landslides and debris flows, compounding the destruction. Regions like Jammu & Kashmir; Himachal Pradesh, Uttarakhand, and north-eastern states in India have witnessed multiple deadly cloudburst incidents in recent years. The 2013 Kedarnath tragedy and the 2021 Chamoli disaster highlight how catastrophic such events can be. The vulnerability stems from a combination of natural geography-step slopes, fragile soil-and human factors like unplanned construction, deforestation, and inadequate disaster preparedness.

Several factors contribute to the heightened vulnerability of these regions to cloudbursts. The mountainous topography with steep gradients accelerates water flow, making flash floods and landslides inevitable during intense rainfall. Climate change plays a crucial role by altering monsoon patterns and increasing atmospheric moisture, which in turn raises the likelihood of cloudbursts. Human activities such as deforestation and unregulated urbanization exacerbate the problem by reducing the land's natural ability to absorb rainwater, while also blocking natural drainage channels. Additionally, the lack of effective early warning systems leaves communities with very little time to prepare or evacuate.

Mitigating the impacts of cloudbursts requires a comprehensive and coordinated approach. Enhancing meteorological infrastructure with advanced technologies like Doppler radars and satellite imaging can improve early detection and forecasting, providing crucial lead time for warnings. Risk mapping and proper land-use planning are essential to prevent construction in vulnerable areas and promote reforestation efforts to stabilize soils. Infrastructure must be adapted to withstand sudden floods, with improved drainage, check dams, and rainwater harvesting systems playing key roles.

Equally important is community engagement. Educating residents about the risks of cloudbursts and training them in emergency response can significantly reduce casualties. Effective disaster management frameworks that foster coordination among government agencies, armed forces, and local bodies ensure timely rescue and relief operations when disasters strike.

■ PROF K S CHANDRASEKAR



Energy is an area of concern for the livelihood of people all over the world and India is no exception considering the largest population base. While shortages in the foreseeable future can be addressed with intelligent future proof strategies, in the long run securing energy supplies is possible only with a broad range of measures including diversification of energy carriers and technologies and mobilisation of conservation reactivation and efficiency boosting strategies. An analysis of the Indian context is very relevant in the backdrop of the galloping oil prices and our ambition to establish as a world power by the first quarter of 21st century. It is seen that the price rise in crude oil is pulling down macroeconomic growth by rising inflation and unemployment and by depressing the value of financial and other assets and impacting consumer spending growth hitting the discretionary budget. The progress of human race started after domestication of fire and energy is the primary growth agent for any society. Major inventions in the application of energy have always resulted in quantum leaps in the advancement of society for better living. Steam engines, gasoline engines and nuclear power were not just inventions but were milestones in the history of human race. The industrialized world took availability of energy as granted in the beginning and up to the latter part of 20th century and wheels of growth were rolling unthreatened at a steady pace. But the oil price shocked in 1973/74 and in 1979/80 abruptly acted as an eye opener. Securing supply of energy at an affordable price got focussed as a main requirement for the sustainable development of any economy and the energy policies of major countries across the globe were recast with thrust on security

of energy supplies. The five principal areas which have a direct bearing on energy security, namely a. Domestic production capacity b. Dependence on imports c. Degree of import concentration d. Stocks and strategic petroleum reserves e. The world excess capacity was given due prominence in the recast policies. While shortages in the foreseeable future can be addressed with intelligent future proof strategies, in the long run securing energy supplies is possible only with a broad range of measures including diversification of energy carriers and technologies and mobilisation of conservation reactivation and efficiency boosting strategies. An analysis of the Indian context is very relevant in the backdrop of the galloping oil prices and our ambition to establish as a world power by the first quarter of 21st century.

India is experiencing a rapid growth in its energy demand concomitant with its economic growth and industrialisation. GDP is currently growing at 6.5% and the demand for crude oil alone is expected to reach 355 to 360 MMT (Million Metric Tons) per annum by 2030 whereas the present consumption is only 118 MMT. Similarly, the requirement of natural gas is expected to reach 400 MCM from the current supply level of 65 MCM (Million Cubic Metre). At the present level the per capita oil consumption of the country is only 0.4 TOE (Tons of oil Equivalent) whereas the world average hovers around 1.6 TOE. Similar is the situation in other fields. Currently, India accounts for only 2.9% of world's energy consumption whereas it accounts for 17 % of world population. It can be assumed that as we go up on the economic ladder total energy requirement to sustain the growth will be enormous even as we reach world average in per capita consumption... Total indigenous availability at the existing rate will be only 30% of the requirement and the balance of the requirement will have to be met by imports. If we depend on a foreign

source for our supplies the issue of ensuring the 'flow in' becomes more relevant.

It is seen that the price rise in crude oil is pulling down macroeconomic growth by rising inflation and unemployment and by depressing the value of financial and other assets and impacting consumer spending growth hitting the discretionary budget. 10% increase in oil price is known to reduce GDP by 0.5%. Though it is not possible for India to insulate itself in a global village, it is imperative to devise strategies to ensure that total energy needs are securely met by different sectors from foreign or indigenous sources at an optimal cost and considering the scramble for oil worldwide.

At the outset, the energy requirement up to 2030 sustaining the high economic growth rate must be established. It depends on the thrust areas selected by the government for economic growth as per the long-term development plans based on the resource availability within the nation. The current sector-wise energy demand is shown below. Industrial sector demand constitutes 55% of the total demand, transport sector demand was 20% and residential and commercial sector demand was 25%. Similarly, an analysis of the demand by fuel would reveal that the requirement for coal is 54.2% that for natural gas 6.5% for oil 31.3% hydroelectric power 7.1% and nuclear 0.9%. This trend is based on the current development policies followed by the Government. For example, an aggressive plan to develop agriculture may lead to a shift in the demand pattern of fuels. Reversely based on the availability and affordability of fuels, development plans can also be formulated. In other words, a proper estimation of energy requirement by various sectors can give directional guidance to the formulation of a sustainable development plan.

Energy systems are complicated with their interlinkage with other aspects of economy, and hence there exist trade-off among the core indicators and the perspective for dif-

ferent economies differs. S.R. Shakya analyzed aggregate and sectoral energy intensities in Bangladesh, India, Nepal, Pakistan, and Sri Lanka during 2000-2017 and decomposed the aggregate energy intensity into its four key determinants. Energy equity is an important consideration for assessment, development and implementation of sustainable energy efficiency policies of a country. India has made substantial progress in improving energy efficiency which is evident from the reductions achieved in energy intensities of GDP to the tune of 88% during 1980-2007.

Scanning of world energy scenario is to be done to know the availability - present and future- price trends, new discoveries and the political trends. Long-term and short-term strategies are to be evolved to ensure supplies are required. Energy based political equations must be evolved and diplomacy must be practiced. As indicated in the introduction intensity of energy import from few countries is not a welcome situation. Based on these projections the selection of energy sectors for different segments is to be relooked and a proper energy mix to be decided for various segments. This phase requires sample survey of industries where new energy mix can be tried. The new energy mix model proposed requires re alignment of various sources and enforcement of new consumption patterns and policies. May be a country like India having immense coal reserves have to go back to coal for many applications but with new technologies to reduce its harmful emissions. An analysis of the potential of new alternate sources and strategies to promote them to be evolved. Currently the efficiency of usage of energy in India is very low. There is an urgent need to find more efficient fuel usage and conservation. Rewarding strategies are to be formulated to ensure reduction in wastages.

(The author is Vice Chancellor, Cluster University of Jammu)

Inspiring Young Minds to Learn Human Anatomy

What is Anatomy and Why is it Important?

Anatomy is the study of the structure of the human body, and it forms one of the foundations of medicine and health sciences. It helps us understand how our organs, tissues, and systems are organized and how they work together to maintain life.

In the Shrimad Bhagavad Gita, it is beautifully stated that the soul is eternal - it can neither be cut by weapons, burned by fire, moistened by water, nor dried by air. We believe that a human body donated for medical education serves a noble purpose for mankind, while the soul remains eternal even after the body has been used for dissection.

For thousands of years, from ancient Egyptian mummification to the works of Greek physicians like Hippocrates and Galen, people have sought to understand the structure of the human body. Understanding anatomy is vital

not only for doctors and scientists but also for the general public. Knowing how the body works helps us make better choices about our health, avoid injuries, and appreciate the complexity of life itself.

Doctors, nurses, and surgeons cannot diagnose or treat diseases without knowing the body's structure. For example, a surgeon must understand the precise arrangement of blood vessels and nerves to perform safe operations. Even outside of medicine, anatomy affects daily life. Anatomy is deeply connected with physiology (the study of function), pathology (the study of disease), and neuroscience.

Understanding how the spine supports posture, how muscles respond to exercise, or how digestion works can help people maintain healthier lifestyles. To understand how the brain controls movement, one must first understand the anatomy of the nervous system. Anatomy reveals the remark-

able design of the human body. Learning that the heart beats about 100,000 times a day or that our lungs contain millions of tiny air sacs can inspire greater respect for our own health.

Anatomy is more than just naming body parts-it is the key to understanding life itself. By studying the structure of our bodies, we gain insight into how we move, grow, heal, and survive. Learning even the basics of anatomy can encourage healthier choices and deepen appreciation for the wonder of the human body. Without anatomy, medicine and healthcare as we know them simply would not exist.

Why Learning Anatomy Should Start Early

Children are naturally full of questions like "Where does food go after eating?", "Why do we have joints?", and "Why do we get heart attacks?" Such curiosity is the first step toward learning anatomy. Introducing children to

the basics of human anatomy at a very young age gives them appropriate answers and lays the foundation for healthy living.

Early exposure does not mean teaching children medical science, but introducing simple concepts about their own bodies that can help them in everyday life. For example, when a child learns how bones and muscles grow, they understand the importance of outdoor play and daily exercise. A small lesson about our spine can encourage them to sit straight and avoid bending incorrectly while carrying heavy school bags. Similarly, explaining how the joints of our body work helps them play sports more safely and prevent injuries. Learning about the structure of teeth can guide them toward better oral hygiene and eating habits.

Anatomy in Everyday Life

Today, anatomy is not just limited to textbooks and lectures; it influences every aspect of our daily lives. From sim-

ple movements to complex athletic performances, our knowledge of anatomy helps us understand our body and its capabilities better.

For example, when we walk, run, or dance, it is fascinating to know how our muscles, joints, and bones work in harmony to produce smooth movements. Knowledge of anatomy also adds depth to our experience and makes learning more meaningful.

Anatomy is also very important in many creative fields. It helps artists, dancers, and athletes to be more precise and confident. Designers use anatomical principles in ergonomics to make workplaces more comfortable and efficient. Researchers in robotics and artificial intelligence are striving to create more human-like machines and interfaces, where the knowledge of anatomy is serving as a guiding light.

World Anatomy Day 2025: Honouring the Foundations of Medical Science

Every year on October 15, World

Anatomy Day is observed across the globe to commemorate the birth anniversary of Andreas Vesalius (1514-1564), the father of modern anatomy.

The theme for this year is:

"Global perspectives of anatomy - bringing together the global community and recognising differences while celebrating similarities."

It highlights how anatomy, though universal in essence, is studied and taught in diverse ways across the world. These differences enrich the discipline, while the similarities remind us of our shared mission to advance health and education.

In today's interconnected era, anatomy is no longer confined within classrooms or borders. Digital tools and global research collaborations are helping bring together anatomists, students, and healthcare professionals from every corner of the world.

(Department of Anatomy, AIIMS Jammu)

YouTube: The New Career Path

■ VIVEK KOUL

A decade ago, YouTube was little more than a digital pastime-a place to watch music videos, movie trailers, and home-made clips for amusement. Today, it stands as one of the most dynamic career platforms of the modern age, redefining the very concept of employment and creativity. What began as a casual video-sharing site has evolved into a multi-billion-dollar industry, turning ordinary individuals into global influencers, entrepreneurs, and storytellers. The transformation owes much to the monetization options introduced by Google, which have opened doors for millions of aspiring creators across the world. Advertising revenue, brand collaborations, Super Chats, memberships, and merchandise sales have made YouTube a legitimate source of income. What once seemed like a hobby is now a sustainable profession-one that rewards creativity, innovation, and persistence. For the youth, it offers something the traditional job market often fails to provide: independence, flexibility, and a chance to earn from passion. This paradigm shift mirrors a broader global movement-where technology, connectivity, and creativity converge to form new-age professions. The once-rigid definition of a "career" is now being rewritten. A young graduate no longer dreams only of a government job or corporate post; many now dream of becoming content creators, vloggers, educators, and entertainers. With affordable smartphones, high-speed internet, and easy access to editing tools, even individuals from remote areas are making their mark on the digital map.

The success stories are plenty. From regional comedians and musicians to educators explaining complex topics in simple terms, YouTube has democratized opportunity. It no longer matters where one comes from; what matters is originality, consistency, and the ability to connect with an audience. The platform's global reach has blurred borders, allowing local creators to reach international viewers and gain recognition far

beyond their physical surroundings. But beneath the glamour of viral videos lies a rigorous discipline. Building a successful YouTube channel requires more than creativity-it demands strategy. Content creators must understand algorithms, optimize search visibility, analyze viewer data, and constantly evolve to retain audience attention. The most successful YouTubers treat their channels like businesses, employing teams for editing, marketing, and analytics. This professionalization of content creation is what separates fleeting fame from sustainable success. The financial possibilities are equally compelling. Many YouTubers now earn more than salaried professionals, inspiring others to enter the digital arena. However, this success is neither instant nor guaranteed. It comes with long hours of scripting, shooting, editing, and promoting. Yet, for many, the rewards-both creative and financial-are worth the effort. In this ecosystem, innovation is currency, and originality is capital. The rise of YouTube as a career also aligns with the broader digital economy where startups and entrepreneurs are reshaping the modern workplace. In today's world, almost everything is moving online-commerce, education, healthcare, entertainment, and governance. Startups are at the forefront of this revolution, introducing new tools, services, and technologies that empower creators and consumers alike.

These young enterprises are not only transforming business operations but are also providing infrastructure for the digital content economy. From analytics platforms that help YouTubers track engagement to startups that connect influencers with brands, the ecosystem is thriving. Entrepreneurs are redefining how creativity is monetized and how digital communities are built. In return, YouTubers are promoting these ventures, amplifying their visibility and reach. This mutual relationship between startups and digital creators is driving the new economy-one powered by ideas, not industries. The entrepreneurial

mindset has now become the backbone of youth aspirations. Unlike earlier generations that sought job security, today's generation seeks creative autonomy. The modern entrepreneur could be anyone-a coder developing apps, a chef running a digital cooking channel, or a fitness expert building an online brand. YouTube, with its vast reach and accessibility, has become one of the most powerful platforms for this entrepreneurial spirit to thrive. Moreover, YouTube's influence extends beyond entertainment. It has become an educational hub, a news source, and a social platform for change. From tutorials and travel vlogs to environmental awareness campaigns, the platform is shaping opinions and spreading knowledge. It has given a voice to the voiceless and a stage to those with a story to tell. In many ways, YouTube has become a reflection of society itself-diverse, dynamic, and ever-evolving. As India moves deeper into the digital era, YouTube and similar platforms will continue to redefine the contours of work and creativity. The traditional career ladder is being replaced by a digital highway of infinite possibilities. With government initiatives promoting startups, digital literacy, and online entrepreneurship, the environment is becoming increasingly conducive for young innovators.

In the end, YouTube represents more than just a career shift - it signifies a cultural transformation. It celebrates individuality in an age of conformity and empowers people to turn their skills into livelihoods. For many, the camera lens has replaced the office desk, and the upload button has become a gateway to global recognition. The rise of YouTube as a profession is a testament to how technology, when paired with imagination, can reshape destinies. It reminds us that in the digital age, creativity is not just admired - it's employable. The world is watching, and for those who dare to create, YouTube is no longer a platform of amusement. It is a platform of opportunity, innovation, and the new face of success.

Deepawali: Safety vs Religious sentiments



■ SHYAM SUDAN

When we initiate the movement of environment friendly or green Deepawali, usually religious sentiments raises in the minds of diwali lover's. We can celebrate this festival without hurting the religious sentiments of Diwali worshippers by adopting various precautions which are mandatory for everyone irrespective of its religion.

Every year we celebrate Deepawali with great enthusiasm and fervour across the entire nation and even abroad in many countries. We usually spend a huge amount of money on this festival on crackers and other fireworks. No doubt it gives economic boost to our cracker industry and millions of workers engaged in these industries. But at the other side we create lot of air and noise pollution in our cities and even in villages. Even many people especially children lost their body parts every year due to their carelessness and ignorance on this day celebration event. Deepawali which is popularly known as festival of lights is now turning into a festival of accidents, tragic incidents, pollution and disputes .We are already facing the crisis of global warming across the entire globe .But on the other side we

are deliberately promoting such activities in our life which creates more trouble for us. Our crackers are full with high intensity explosives nowadays. We generally take risk while using such materials. Our children are playing with these explosives during the celebration of Deepawali. It is our duty to guide our children, how to use these explosives safely .we can teach them how to celebrate the environment friendly Diwali with happiness. Instead of wasting money on highly explosive crackers we can give priority to Rangoli designing, lightening of earthen Diyas, candles , safe crackers, artificial lights and other decoration works. High intensity explosives are not only harmful for its users but also create trouble for old age people, patient and small children. As we know in our neighborhood many people have cardiac problem, many have irritability towards high frequency sounds .When we explode High intensity explosives suddenly such kind of people feel uncomfortable and irritation. Even the other creatures i.e animals feels uncomfortable , uneasiness and unexpected shock .While performing our celebration we should keep in mind the selection of place and kind of crackers. The Air quality index of

many big cities changed abruptly due to explosion of such fireworks and returned to its original point after many days of gap .

At religious point of view we know that Deepawali is the time of celebration we welcome our lord and Goddess Lakshmi in our homes. We must keep in our mind that our God and goddesses are not happy with our high sound producing explosive and pollution. They are happy with our devotion, faith and purity of hearts. Instead of focusing on these explosives and other wrong actions on such a pious day we should give priority to cleanliness, peace and happiness. However there is no religious censorship on such kind of celebration. But being a civilized person it is the duty of every one to think over such issues .All those activities and celebration (of every religion)which creates trouble for others and for our environment must be visualised from civilized point of view. Our religion, caste and culture may be different but we belong to the same planet. Our earth is the only habitat for all of us. We have no right to put the life of our coming generation in polluted environment and unsafe habitat. Collaboration and wisdom of all civilized citizen is needed in this direction to aware the general masses.