

## EFFECTIVE MEASURES TO TACKLE AIR POLLUTION

The statistics provided from the Lancet Commission report highlight the severity of air pollution in India, with a significant number of premature deaths attributed to it. Additionally, the study on children's lung health underscores the long-term health impacts, particularly on vulnerable populations like children.

The concept of a carbon tax is indeed gaining traction globally as a means to mitigate climate change and reduce air pollution. By imposing a fee on carbon emissions, it incentivizes individuals and industries to reduce their reliance on fossil fuels and adopt cleaner alternatives.

The economic rationale behind carbon taxes well, particularly focusing on the concept of negative externalities. When the costs of pollution are not borne by the polluters themselves but instead imposed on society at large, it creates market distortions. Carbon taxes aim to internalize these costs, aligning economic incentives with environmental goals.

While the concept of carbon tax seems straightforward in theory, its implementation can be complex. Determining the appropriate tax rate, ensuring compliance, and addressing potential regressive impacts on low-income households are among the challenges that policymakers need to consider.

It's worth noting that carbon pricing mechanisms, including carbon taxes and cap-and-trade systems, vary in their design and implementation across different countries and regions. Learning from international experiences and tailoring policies to the specific context of India can help maximize effectiveness. There is the urgent need for effective measures to tackle air pollution in India, with carbon taxation emerging as a promising policy tool to internalize the external costs of pollution and incentivize cleaner energy alternatives.

## BRO: Connecting Places, Connecting People

■ LT GEN RAJEEV CHAUDHARY (RETIRED)



Beyond constructing strategic infrastructure on our land borders, Border Roads Organisation (BRO) plays a crucial role in connecting some of the remotest villages and providing access to the people there to the basic necessities, which they have always been deprived of since independence. BRO's commitment to extending road infrastructure to the most inaccessible regions includes the construction of a 180-foot bridge in Sanklang/Tong, Sikkim, along the Tuhung Chu road, aptly named the "Bridge of Hope" by local communities. Before this bridge, residents faced a daunting journey of 56 kms by vehicle plus an additional 14 kms on foot to reach Saffo Village.

Government's Recognition. Besides integrating the far flung areas with main stream, the fast growing border infrastructure has triggered reverse migration in hundreds of villages all across the Northern borders. Success of these projects has not gone unnoticed. The former President of India mentioned, during his address to Joint Session of Parliament on 31 Jan 22, about stellar achievement of BRO by constructing world's highest road at UmlingLa and connecting remotest villages like Demchok, Jolingkong and Huri to mainstream society.

Marvel at Demchok. Demchok is the closest village to LAC in Eastern Ladakh, which is of great strategic importance in Chumar Sector. The majority of the inhabitants are Changpa nomadic pastoralist. In Sep 2021, BRO connected Demchok to Chisumle through a 52 km long road which is today the world's highest road passing through UmlingLa at 19024 feet. Earlier people of Demchok used to take 3.5 days on horseback to reach Hanle town for any medical emergencies and meeting their relatives there. Today due to connectivity provided by BRO, they take only 3 hours to reach Hanle. Not only it has made the journey shorter and comfortable but also many lives get saved due to timely medical assistance.

Miracle at Jolingkong. Jolingkong is the first village on Indo-Tibet border in Kuthi valley. BRO connected Jolingkong to Gunji in Sep 2022 through a 36 km long road. People of Rung community are settled in this region and during severe winters at these places used to go down to plains of Tanakpur but after this connectivity they stay in their villages only. Jolingkong is located at an altitude of 15000 feet and is the window to Parvati Kund, Om Parvat and Adi Kailash. People visit Jolingkong to have darshan of Adi Kailash and also for undertaking some challenging treks. Prime Minister recently visited Jolingkong on 12 Oct 2023 and met the locals and security forces personnel and appreciated the efforts of BRO in boosting trade, commerce and tourism activities through this newly established road.

Success Story of Huri. The construction of the 278 km Hapoli-Sarbi-Huri road in Arunachal Pradesh's Kurung Kumey district has curbed the migration of locals seeking better opportunities elsewhere. Huri was air maintained since independence. The population of Huri village had dwindled from 200 to 49 as all the young people migrated to bigger villages or towns. After construction of bridge on Kumey river in Jun 2021 and the road in Sep 2021, the people returned to Huri. Today the population has gone upto 300, a primary school has been opened and a Primary Health Centre has come up there. Some of the old people had seen helicopters but never a vehicle in their lives. Moreover, this road has moved our security matrix much closer to LAC making it easier for our troops to reach the conflict points faster in case of any contingency.

Beyond Infrastructure. On 24 January 2023, BRO achieved another milestone by connecting Laxmi Nagar, the southernmost panchayat of the country, to Shastri Nagar in Great Nicobar Island. This infrastructural development has opened up these villages to economic opportunities, healthcare, education and more, previously beyond reach. Moreover, the accessibility of essential services has improved the quality of life, encouraging natives to return and settle down in their ancestral lands.

Government's Blueprint for National Integration. Historically, rural to urban migration has been driven by the search for better opportunities, leaving many villages with dwindling populations and aging demographics. With better connectivity, residents who had moved to cities in search of work are now returning to their native villages. Previous Governments were always worried that the roads developed on the borders might be used by the adversary. This defensive and regressive approach prevented development to reach the border areas.

Changing Mindsets. Addressing historical neglect, the current government has significantly ramped up the investment in border areas, exemplified by the substantial increase in the budget of BRO by astounding 160% during last three years. This transformational journey of changing mindset of all stakeholders towards aggressive approach to provide last mile connectivity on our borders hasn't been easy, but under Modi's stewardship, it's been nothing short of extraordinary.

The story of reverse migration in these villages is a testament to the fact that infrastructure development can be a powerful tool for rural revitalization. The BRO's achievements in triggering reverse migration highlight a broader narrative of development where progress does not just mean urbanization but includes the revitalization of rural areas. It sets a precedent for future projects across India, offering a blueprint for how strategic infrastructure can serve as a catalyst for socio-economic development and reverse migration, fostering a balanced and inclusive growth model.

(The writer is Former DGBR).

## Shiva family- A true example of Unity in Diversity

■ JAGDISH R SHARMA

Coexistence is key to a prosperous and peaceful life. Accepting the competencies and weaknesses of others make us happy and cheerful. The family is the fundamental unit of society. To enjoy life to its full, one needs a well-knit and fundamentally strong family, that cares and has empathy. The Shiv Parivar or family is an exciting and perfect example of Hindu tradition and beauty of Sanatan Dharma. This year, MahaShivratri is being celebrated all over the world on 8th March 2024. On this auspicious day of MahaShivratri, let us try to know the dress, temperament, looks and actions of each family member, who live with mutual love, and respect and are firmly united, though having diverse natures. The essence of Vasudhaiva Kutumbakam -the whole world is one family, is also manifested here. The Ardhnareeshwar form of Shiva symbolises that life represents the synthesis of masculine and feminine energies of the universe (Purusha and Prakriti) and illustrates how Shakti, the female principle of God, is inseparable from Shiva, the male principle of God, and vice versa.

Most of the time Shiva remains away from the mundane world and remains in a state of penance. He is a destroyer of all things, as well as associated with creation. Destruction and creation are inextricably linked-one cannot exist without the other-making Shiva particularly important. The cycle of life and death, creation and destruction goes on. SonKartikeya being a warrior protects humanity from evil forces and devils, Lord Ganesha is worshipped first and is a remover of obstacles. Whereas Maa Parvati is kind-hearted and takes care of our well-being.

Bhagwan Shiva is the Yogi (renunciate), three eyed and dresses in tiger skin and snakes and scorpions for ornaments. The body is covered with ash while Maa Parvati dresses beautifully along with bejewelled ornaments and is like a devoted wife. The elder son Lord Kartikeya is a warrior, and the younger son Lord Ganesha is a remover of obstacles(Vighanharta). Their carriers are also inimical to each other, (as per the biological food chain). Kartikeya's peacock is an enemy of Shiva's snakes and would never spare them. While Parvati's lion always wants Shiva's bull to satisfy his hunger. Ganesha's mouse is small and no match to Shiva's bull or Parvati's lion, still holds its importance in the family. Snake would also like to eat mouse. Their carriers also have differences in their habits and habitat. The mouse lives underground while Kartikeya's peacock flies and the lion lives in a cave. All the family members and their carriers have different food preferences, likes and dislikes, skills, capabilities and aims, yet there is no conflict.

Happiness and satisfaction are plus points of a family.



According Hindu scriptures, Bhagwan Shiv loves khandmool. His favourites include bhlang, dhatura, milk, thandai and sweets white in colour. Whereas, Lord Ganesha love sweets and ladoos, moudaks. Maa Parvati likes anything that is made of rice, rice kheer and rice pancakes. Kartikeya likes sweets and yellow colour.

This way, all of them are giving a message of living intelligently, mobilising good qualities, and having empathy. Being empathetic means having an open mind and accepting these unique differences. From this, we can learn to accept those who are around us and appears to be our opposite. We can get to know that person better. If we try to find out more about him or her, then we can have a better understanding. Accept people and things as they are without judgment or harbouring negative feelings such as fear, anger, and resentment.

Currently, people are stressed out and suffering from depression due to undesired situations. They fail to dovetail with the conditions and people around them. Such people should learn from the Shiva family, the fundamentals of happy living. The members of the Shiva family wouldn't like others to change their behaviour or habits yet accept them as they are.

Happiness and satisfaction are plus points of a family.

Studies have shown that spending time with family can help reduce stress and anxiety, lead to a healthier lifestyle, and lengthen your life. Even spending time with your pets also reduces your stress level in your life. Family is such a God-given gift that gives you the motivation to be beneficial and sacrifice something to make others happy and be the best version of yourself.

The mantra of a satisfied and peaceful life is acceptance. It is the ability to see that others have a right to be their unique persons. That means having a right to their feelings, thoughts, and opinions. When you accept people as they are. You won't desire to change them. You let them feel the way they want to feel, you let them be different and think differently from you. Everyone is different in one way or another. Once you understand this truth, you can stop trying to change them into the people you want them to be and start accepting them for who they are.

Acceptance of others' feelings is not easy when people act differently than we do. We all have ego problems accepting others who are different. We need to learn and develop empathy in ourselves so we will be better able to understand ourselves and those who are different from us. It will also take away all conflicts arising in the family and society.

One should ingrain the following traits to enjoy a family and social life devoid of depression and stress. We can seek help from the old and wise. Eradicate ignorance, don't comply with idiots and discourage factionalism and enmity. Be stable, don't join an unjust fight. Stick to truthfulness and integrity and dissociate from jealousy. More importantly, lead a peaceful and exemplary life. Be kind and helpful to all. Moreover, avoid any type of addiction to smoke and drugs.

Diversity is fundamental to the Indian way of life. India's great civilisation is based on diversity in nature and culture. Our first identity is as Earth citizens, an Earth family (VasudhaivaKutumbakam), sharing the planet with other species. Our rich Indian culture doesn't impose itself being Anthropocentrism, of separation from and superiority over other species. The main crux of our shastras is that all living things have an equal right to live on this planet as an individual. That may be the basis of a shiva family that all live happily yet are diverse. Animals have also importance in their family and are loved also. That is why Shiva is known for Satyam ShivamSundaram (The Truth is God, (Shiva) and the (God)Shiva is the Beautiful.

(The writer is formerly Principal JK School Education Department).

## Anatomy of Urban Ecology: Main Causes and Remedies

■ DR. RAJKUMAR SINGH

The concept of urban ecology and the recognition of urban environmental problems began to gain significant attention in the late 19th and early 20th centuries, alongside rapid industrialization and urbanization. During this period, cities in Europe and North America were expanding at an unprecedented rate, leading to a range of environmental issues such as pollution, overcrowding, poor sanitation, and the loss of green spaces. These issues were exacerbated by the lack of adequate urban planning and infrastructure to support the burgeoning urban populations. In the context, one of the early acknowledgments of urban environmental issues was the public health movement in the 19th century, which highlighted the link between environmental conditions in cities and public health problems. The poor living conditions in urban slums, along with the lack of clean water and proper waste disposal systems, contributed to outbreaks of diseases such as cholera and tuberculosis. The industrial revolution further intensified environmental degradation in urban areas, with factories emitting pollutants into the air and water, leading to severe air and water pollution problems. The smoke-filled skies over cities like London and Pittsburgh became symbols of industrial progress but also of the environmental cost of such progress. In response to these growing problems, there were early efforts to address urban environmental issues. Further, the creation of public parks in the 19th century, such as Central Park in New York City, was partly motivated by the desire to provide green spaces for urban residents and to improve the urban environment. The formal field of urban ecology, which studies the relationship between urban environments and ecological processes, began to develop in the mid-20th century. Researchers started to systematically study how urbanization affects the environment and how ecological principles can be applied to urban planning and management to mitigate environmental problems. Overall, the rapid urbanization and industrialization of the 19th century, brought about significant environmental challenges that continue to evolve today. The field of urban ecology has since evolved to address these challenges by integrating ecological science with urban planning and policy-making. Urban ecology and environment are a field of study that focuses on understanding the relationships between living organisms, including humans, and their urban environments. It aims to explore how urbanization affects ecosystems and biodiversity, and how natural elements within urban areas can be managed to improve environmental quality and human well-being. This interdisciplinary field combines aspects of ecology, sociology, urban planning, landscape architecture, and

environmental science to address challenges such as: a. Urban Biodiversity: Investigating the variety of plant and animal species in urban areas, understanding how urbanization impacts local and migratory species, and identifying strategies to preserve and enhance biodiversity in cities. Urban ecology and environment research is crucial for developing sustainable solutions that balance urban development with the preservation of ecological systems and the enhancement of quality of life for urban inhabitants.

Causes of degradation

Urban environmental degradation is a complex issue influenced by various factors: a. Rapid Urbanization: The swift growth of cities, often without adequate planning, leads to overexploitation of natural resources, inadequate waste disposal, and loss of green spaces. b. Industrialization: Industries often emit pollutants into the air, water, and soil, contributing significantly to environmental degradation. Industrial waste, if not properly managed, can lead to soil and water contamination. c. Transportation: The increase in vehicles contributes to air pollution and noise pollution. The reliance on fossil fuels for transportation also leads to greenhouse gas emissions, contributing to climate change. d. Deforestation: Urban expansion often leads to the cutting down of trees and loss of green cover. This not only results in loss of biodiversity but also reduces the natural absorption of CO2, exacerbating climate change. e. Waste Generation: Urban areas generate significant amounts of waste, including solid waste, electronic waste, and hazardous waste. Inadequate waste management practices can lead to pollution and health hazards. f. Water Mismanagement: Overuse and pollution of water resources in urban areas can lead to water scarcity and degradation of water quality. This is exacerbated by inadequate sewage and drainage systems. g. Lack of Sustainable Infrastructure: In many urban areas, infrastructure development does not keep pace with growth, leading to inadequate housing, transportation, and waste management systems that further degrade the environment. h. Climate Change: Urban areas contribute significantly to climate change, which in turn exacerbates environmental degradation through extreme weather events, rising sea levels, and changing weather patterns. i. Economic Activities: Activities such as mining, quarrying, and construction can lead to land degradation, habitat destruction, and pollution. j. Population Pressure: High population density in urban areas leads to increased consumption of natural resources, higher waste generation, and greater strain on infrastructure, contributing to environmental degradation. In nutshell, the urban environmental degradation requires integrat-

ed planning, sustainable development practices, investment in green infrastructure, and policies that encourage environmental stewardship.

Remedies of the problem

To mitigate urban environmental degradation and improve the urban environment, we need a multifaceted approach that incorporates sustainable planning, technological innovation, and community involvement is essential: a. Green Infrastructure: Implementing green roofs, urban forests, parks, and green walls can help mitigate air pollution, provide cooling effects, enhance biodiversity, and manage stormwater. b. Sustainable Transportation: Promoting public transportation, cycling, and walking, along with the development of electric and hybrid vehicles, can reduce air pollution and greenhouse gas emissions. c. Waste Management: Implementing comprehensive recycling programs, waste-to-energy initiatives, and reducing single-use plastics can significantly decrease urban waste and pollution. d. Water Conservation and Management: Rainwater harvesting, efficient water use, and the treatment and reuse of wastewater can alleviate water scarcity and reduce water pollution. e. Renewable Energy: Encouraging the use of solar, wind, and other renewable energy sources can reduce dependence on fossil fuels and decrease greenhouse gas emissions. f. Urban Planning: Smart urban planning that incorporates sustainability can reduce environmental impact. This includes mixed-use developments, compact city designs, and the preservation of natural areas. g. Pollution Control: Stricter regulations and enforcement against industrial and vehicular emissions can significantly reduce air and water pollution. h. Sustainable Construction: Utilizing green building practices and materials reduces the environmental footprint of new buildings and infrastructure. i. Public Awareness and Education: Educating the public about environmental issues and sustainable practices can foster a culture of conservation and responsibility. j. Technological Innovation: Leveraging technology for smart city solutions, such as IoT sensors for monitoring pollution levels and traffic management systems, can enhance urban sustainability. k. Policy and Governance: Effective policies and governance structures that promote environmental sustainability are crucial. This includes incentives for green initiatives and penalties for environmentally harmful practices. Implementing these remedies requires coordinated efforts from government, private sector, non-profit organizations, and the community. Collaboration across these sectors can lead to innovative solutions and significant improvements in urban environments.

(The author is a youth motivator).

## MANDA CITY FOREST

■ G.L. KHAJURIA

Very few cities are fortunate enough to have a lushgreen vibrant forest in their close proximity. Jammu as such is having Manda forest, a short distance towards its north, where one can have a sighof relief with refreshing air both in the morning and evening.

Not only that the forest refreshes the morning and evening walkers, the fresh breeze also whiffs through the entire city of Jammu to keep her ever-refreshing.

Manda is endowed with a rich vibrant and lush green forest of all strata of trees amalgamated with climbers, shrubs and herbs of multihued manifestation.

Apart from being laden with rich flora, Manda is famous for a rich variety of fauna which constitute a kaleidoscopic panorama of wildlife intermingled with rich flora.

Not too distant past, a tiger was sighted on the serpentine Bull cart road(BC

road) near Karr Nallaha which drains down into Tawi flowing alongside jammu city.

Though, of course, with the passage of time and other factors, Manda has in many ways lost its prestine grandeur and glory with the result that the richness of both floraand fauna has lost luster.

The Pea-cock, our National bird and the tiger our National animal which once were in abundance have now reduced to a very few numbers. Similar is the fate of other colourful animals and birds such as Jackals, wolfs, Mongoose, creepers, Jungle fowls and so many of their allies.

Manda's entire forest falls within the scrubland which is mostly dry, arid and quite thorny. The trees are short of stature and crooked in limb and their branches are wavering out. Amidst clumps of these malformed trees are the shrubs which form the undergrowth of

these dry and arid lands.

Thick and unyielding, these are armed with interlinking thorns designed by nature to tear flesh off the unsuspecting passerby. The Plants are waxy, thorny and occasionally hairy and all these combined in unison, which don't conform to the image of the well behaved potted green. Mighty beasts are seldomfound in the scrubland of Manda to enchant the onlooker and make them fall in love with the habitat which houses them.

The very symbols of nature that endear are absent and instead in the tough and hardy survivors of relentless ecosystem of Manda forest, its flora and fauna.

Over the years, Manda was thickly covered with a rich variety of flora and fauna. But with the human interference and intrusion has deteriorates its vibrancy to alarger extent. There is a complete silence of songs which were being echoed by the wild birds both at sunrise and sun-set. The roaring of majestic tiger

are totally absent owing to their absence in itself.

The forest department alongwithits allied wing of wildlife are making all out efforts to restore back the erstwhile grandeur and glory but no fruitful results have been achieved to the extent to which these are expected to be.

It is, therefore, enjoined upon the Government in general and Minister incharge of forests and Environment in particular to invigorate all possible steps to save, protect and propagate the only lastingbeauty and vibracyof Manda forest apart from Mahamaya forests both in terms of their beauty and vibrancy lest our upcoming generations keep on abusing us for the years ahead. Our forest and the wildlife housingin is our rich heritage, their preservation and protection is not only mandatory but obligatory on our part.

(The author is Dy. Conservator of forest J&K).