AFFORDABLE HEALTHCARE

In a world where medical technology is advancing at an unprecedented pace, the paradox of healthcare accessibility remains stark. Cutting-edge treatments and diagnostics have revolutionized modern medicine, yet a large portion of the global population continues to struggle with access to basic healthcare services. The solution lies in reimagining healthcare through the lens of affordability and innovation - not as mutually exclusive goals, but as complementary imperatives.

For countries like India, with its vast population and limited healthcare infrastructure in rural and semi-urban regions, affordable healthcare innovation is not a choice - it is a necessity. According to the World Health Organization, over 65% of health expenses in India are paid out of pocket. This figure underscores a systemic issue: healthcare must not be a luxury. It must be a fundamental right, accessible irrespective of geography or income.

The good news is that innovation in this space is not just possible - it's already happening. Take, for instance, low-cost diagnostic kits* for diseases like malaria, dengue, and COVID-19, developed by Indian startups. These kits bring life-saving diagnostics to the doorstep of villages, bypassing the need for expensive lab infrastructure. Similarly, portable ECG machines, AI-powered radiology, and smartphone-based vision testing apps are making healthcare more inclusive and accessible.

Telemedicine is another transformative tool. It bridges the urban-rural divide by enabling remote consultations, prescription services, and even mental health counseling. For patients in remote areas where specialists are scarce, telemedicine can be the difference between early diagnosis and delayed care. However, digital access and literacy remain critical challenges that must be addressed in tandem.

Another area of promise is public-private partnerships (PPPs). Governments alone cannot shoulder the burden of healthcare delivery. Collaborations with tech companies, research institutes, and non-profits can bring innovative, scalable, and cost-effective solutions to the public health ecosystem. The government's push toward digital health IDs under the Ayushman Bharat Digital Mission (ABDM) is a step in the right direction, promoting digitized records and integrated care.

Affordability also depends on supply chain innovation. India has demonstrated remarkable efficiency in vaccine manufacturing and distribution - evident in its leadership role during the global COVID vaccination drive. This model should be replicated for other areas of healthcare: essential drugs, maternal health kits, nutritional supplements, and diagnostic tools must be made available at the last mile- without the prohibitive costs often added by inefficient distribution systems. Healthcare startups also play a vital role. From AI-based early cancer detection to IoT-based chronic disease monitoring, many Indian startups are redefining what is possible in low-resource settings. However, these startups need nurturing - through access to funding, mentorship, regulatory clarity, and most importantly, platforms that enable them to collaborate with the public sector. Of course, innovation without regulation can be dangerous. As we scale low-cost solutions, quality assurance and patient safety must remain non-negotiable. Healthcare innovations must pass rigorous clinical validations and be subjected to ethical standards, especially when using data-driven tools like AI or remote monitoring systems.

Natural Disasters in Jammu & Kashmir: A True Picture and a Wake-up Call

ABDUL QUDDIR KUNDRIA



atural calamities have been part of human existence since the beginning of time, but in the last few decades their frequency intensity have increased to alarming lev-The fragile

Himalayan region of Jammu and Kashmir has always been prone to landslides, flash floods, cloudbursts, and torrential rains, yet the devastation seen in recent times has shaken the very foundation of human resilience in the area. Across districts such as Kishtwar, Kathua, Reasi, Ramban, Rajouri, Poonch, Udhampur and Samba, people have witnessed tragedies that words can hardly capture. From the pilgrimage town of Katra near Mata Vaishno Devi shrine to the remote villages of Mahore, Banihal, and Bhadarwah, the landscape is scarred with grief. The cries of families who lost their loved ones echo through the valleys like a haunting reminder of how fragile human life is before nature's fury. These cries, accompanied by tears that fall like drops of blood, leave us questioning where to turn, whom to save first, and how to recover from such irreparable loss. The devastation is not only physical but emotional, cutting deeply into the very spirit of society.

Everywhere across Jammu and Kashmir there are stories of tragedy. Private properties have been reduced to rubble, school and college buildings have collapsed under the weight of heavy rains, and mountain slopes have slid into rivers and valleys, burying whatever stood in their path. This is not limited to human settlements. Even the nests of birds have been destroyed, animals have perished in large numbers, and forests have suffered irreparable damage. Lightning has struck down trees, floods have swept away fertile fields, and rain has lashed relentlessly. The destruction of natural habitats, the displacement of wildlife, and the loss of biodiversity all indicate a deeper crisis that extends beyond human suffering. For ordinary people, the loss of homes, roads, and bridges is not just a material setback but a blow to their social and emotional fabric. These structures

are lifelines in a mountainous region where connectivity is already fragile, and their collapse means isolation, hunger, and despair.

The magnitude of destruction is so vast that recovery seems almost impossible. The scenes unfolding in Jammu and Kashmir resemble the aftermath of a silent apocalypse. Compensation and relief may help to some extent, but no amount of money can bring back the dead or erase the trauma etched in the hearts of survivors. Families who lost their breadwinners, children who lost their parents, farmers who lost their fields-all face an uncertain future. What has been destroyed in a matter of hours will take decades to rebuild, if it can ever truly be rebuilt.

Yet, amidst this gloom, a faint silver lining can be seen in the courage and unity of those engaged in relief operations. The Army, Police, Civil Administration, National Disaster Response Force (NDRF), State Disaster Response Force (SDRF), and countless NGOs have joined hands in this struggle. Risking their own lives, they have reached villages cut off by landslides, rescued stranded families, distributed rations and drinking water, and worked tirelessly to restore connectivity. Their courage deserves not only appreciation but deep respect. They are the living proof that humanity, when united, can stand strong even in the face of nature's most brutal blows. While the monetary losses are beyond recovery, these relief measures give people a sense of hope. In the darkest of times, hope itself is a form of survival.

Another tragic dimension to this crisis is the collapse of essential services. Over the past few weeks, electricity and water supply have been disrupted in many parts of Jammu and Kashmir. Entire villages have been left without power for days, sometimes weeks. Water supply, already scarce in some regions, has been completely cut off, forcing families to walk long distances for drinking water. Life without electricity and water is not just an inconvenience; it is a slow erosion of survival itself. At such a critical time, providing rations, restoring electricity, and ensuring clean drinking water are not administrative tasks but moral obligations. This is a call for collective action. If the government, local administration, and common citizens come

together, what seems impossible can indeed be made possible. Disasters demand that communities rise in solidarity, helping one another shoulder the burdens of survival. The people of Jammu and Kashmir must embrace this call, for unity and cooperation are the only true answers to such challenges.

The district administrations have tried to address the crisis, but the scale of damage is overwhelming. The floods and storms have not only taken lives but also destroyed fruit orchards and crops, which form the backbone of the region's economy. Farmers, who depend entirely on their fields for livelihood, now stand devastated, watching the labor of years vanish in a single night of floods. For them, timely compensation is not charity but survival itself. It is imperative that the government ensures compensation does not remain confined to paperwork, political speeches, or newspaper headlines. Too often, the most needy are left out, while the influential manage to secure relief. This cycle of injustice must end. The way forward lies in setting up local-level committees in every Panchavat, involving revenue officials like Patwaris, community leaders, and district officers. Together, they must assess damages on the ground and ensure fair distribution of aid. This will guarantee that those who have actually suffered receive the relief they deserve. At the same time, the public must cooperate with officials, providing truthful information and supporting them in identifying victims. This is not a time for corruption or exploitation. It is a test of humanity, and failing it would be a crime against those already suffering.

The disaster has also exposed another pressing issue: the lack of educational infrastructure in rural areas. In many regions, children are forced to travel thirty to fifty kilometers to attend higher secondary schools or colleges. During disasters, when roads are blocked or destroyed, this becomes impossible, depriving students of their right to education. The government must treat this as an urgent lesson and establish more higher secondary schools and colleges in rural belts. This step will not only reduce pressure on urban institutions but also give underprivileged children in remote areas a fair chance at education. For many poor

families, sending children to faraway towns is financially impossible, and disasters make it physically dangerous as well. Education within reach would provide these children an opportunity to break free from the cycle of poverty and vulnerability.

The central government has announced some aid for the affected areas, but the relief provided so far is far from sufficient. What has been given is not even close to the scale of destruction witnessed. The people of Jammu and Kashmir need and deserve far greater assistance. The central government must recognize the gravity of the situation and provide substantial financial and infrastructural aid to the Union Territory. This is not merely about rebuilding roads or houses: it is about healing wounds, restoring dignity, and giving hope to those who have lost everything. Only through significant and timely support can the injured be treated, the homeless be sheltered, and the livelihoods of farmers be restored. This is the spirit of the Indian Constitution, which promises equality, justice, and support to every citizen in times of need.

The natural disasters that have struck Jammu and Kashmir are not just isolated events but warnings for humanity. They remind us of the fragile balance between man and nature, and of our responsibility to protect and respect the environment. They also highlight the urgent need for stronger infrastructure, better preparedness, and greater cooperation between government, civil society, and ordinary citizens. Above all, they teach us that in the face of devastation, unity and compassion are our greatest strengths. The path ahead is not easy, but with collective will, honesty, and determination, Jammu and Kashmir can recover. The people have suffered immensely, but they also carry within them resilience and courage. It is time for all of us, whether in administration, institutions, or as common citizens, to come together and rebuild not just homes and roads, but also the spirit of hope. Only then can we truly honor the lives lost and ensure that the future is safer for generations to come.

> (The writer is an eminent Dogri Poet/Writer of Jammu and Kashmir)

National Nutrition Week: A Call to Embrace Millets for a Healthier India

PROF. DINESH CHANDRA RAI

India marks National Nutrition Week from September 1st to 7th, under the theme "Eat Right for a Better Life," I find myself reflecting on a critical paradox. While our nation has made great strides in food production, we are still battling an unseen crisis of malnutrition. The Global Hunger Index (GHI) 2024 classifving our hunger situation as "serious." This data shows me that our problem isn't just a lack of calories; it's a deficiency of essential nutrients. In my work as a food scientist. I've come to believe that the key to creating a truly healthy and sustainable food system lies in returning to our agricultural roots: the humble millet. In my view, the decline of millets from

our national diet was a critical turning number of people with dietary sensitivimate change.

point. Following the Green Revolution, our agricultural focus shifted dramatically to high-yield, water-intensive crops like rice and wheat. This move, while successful in achieving food selfsufficiency, led to a dangerous lack of variety in our diets. We abandoned the rich diversity of our native grains for a narrow range of starches. My research confirms what our elders always knew: millets are a nutritional powerhouse. They are packed with protein, dietary fibre, and essential minerals such as iron, calcium, and zinc, which are crucial for combating common deficiencies like anaemia and bone density issues. Their low glycemic index makes them a valuable food for managing diabetes, and their naturally gluten-free nature makes them suitable for an increasing

Beyond their health benefits, millets also offer a compelling environmental and agricultural solution. They are rightly called "climate-smart crops" because they are remarkably resilient. Compared to rice, which demands thousands of litres of water per kilogram, millets require significantly less, making them ideal for dry regions and a smart way to manage our water resources. Furthermore, their deep root systems help prevent soil erosion and improve soil health, reducing the need for chemical fertilizers and pesticides. By bringing millets back, we are not just addressing a nutritional crisis; we are also building a more resilient and sustainable farming landscape that can adapt to the unpredictable effects of cli-

Despite this clear potential, millets face significant hurdles. From a scientific and practical perspective. I see that farmers lack assured market prices and struggle with the high effort required for post-harvest processing. The tough outer hull of millets demands specific machinery, which is often expensive and hard for small-scale farmers to get. On the consumer side, there's a persistent lack of awareness, particularly in urban areas, and the higher cost of processed millet products compared to staple grains like rice and wheat presents a barrier to adoption.

To truly make millets a part of our national diet, we must look to science for a new approach. My own work and that of my team have shown that millets can be transformed from a simple grain

instance, we use advanced analytical tools to perform bioactive profiling of millets, identifying specific anti-inflammatory or anti-cancer compounds. This allows us to move beyond a general health food and create specialized nutritional products. I have personally been involved in developing healthy snacks that blend millets with other traditional foods, such as my work in creating nutri-bars from millet and makhana (foxnut). We've also explored updating traditional methods, for example, by creating probiotic-fortified fermented millet drinks. This kind of innovation, which creates convenient, scientificallybacked, and appealing products, is essential for winning over the modern consumer.

Beyond the lab these innovations into high-value functional foods. For must be supported by a comprehensive plan. We must continue to push for the integration of millets into public welfare schemes, as this creates a strong, stable demand. At the same time, we need to invest in making processing technology more widely available and helping companies bring new products to market. It is my firm belief that with the right combination of scientific innovation, smart policy, and a new appreciation for our agricultural heritage, we can build a food system that is both healthy for our people and strong for our planet.

This National Nutrition Week, let millets be more than just a passing trend. Let them be a powerful symbol of our shared effort to build a healthier, more prosperous India for generations to

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Lifeline of Jammu and Kashmir: Protecting Forests, Preventing Fires, and Conserving Water for a Sustainable Future

■ DR RAKESH VERMA estled in the majestic Himalayas, the Union Territory of Jammu and Kashmir (J&K) stands as a testament to nature's grandeur, boasting towering mountains, verdant valleys, and pristine rivers. Among its invaluable resources, forests are the cornerstone of the region's ecological balance and the lifeline of its numerous rivers. Protecting these forests, preventing devastating fires, and conserving water are not merely environmental concerns but essential steps toward securing a sustainable future for J&K and its people. The forests of J&K are complex ecosystems that provide a multitude of benefits. They regulate water by acting as natural sponges. absorbing rainfall and snowmelt, which is then gradually released into streams and rivers, ensuring a continuous and reliable water supply throughout the year. The dense canopy of trees intercepts rainfall, reducing the impact on the soil and minimizing erosion, while the root systems bind the soil together, preventing landslides and maintaining the stability of the terrain. Moreover, J&K's forests are home to a rich diversity of flora and fauna, including many rare and endangered species. They provide habitat, food, and shelter for a wide range of animals, birds, and insects. Protecting forests is crucial for maintaining biodiversity and preserving the unique natural heritage of the region. Forests also play a vital role in regulating the climate by absorbing carbon dioxide from the atmosphere, helping to mitigate climate change, and releasing oxygen, which is essential for human and animal life. They help to regulate temperature and humidity, creating a more favorable environment for agriculture and human habitation. The root systems of trees hold the soil in place, preventing

erosion and landslides. Forests also help

to improve soil fertility by adding organic

matter to the soil, which is particularly important in mountainous regions like J&K, where soil erosion can be a major problem.

Furthermore, forests provide a wide range of products and services that support the livelihoods of local communities, including timber, fuelwood, fodder, medicinal plants, and non-timber forest products. They also provide opportunities for tourism and recreation, which can income generate communities. The forests of J&K are intimately linked to the health and vitality of its rivers, which are the lifeblood of the region, providing water for drinking, irrigation, industry, and power generation. The major rivers of J&K, including the Jhelum, Chenab, and Indus, originate in the high-altitude forests and glaciers.

The Jhelum River, the lifeline of the Kashmir Valley, originates from the Verinag spring in the Anantnag district and is fed by numerous tributaries, many of which originate in the surrounding forests. The forests help to regulate the flow of the Jhelum, preventing floods during the monsoon season and ensuring a continuous water supply during the dry season. Deforestation in the catchment area of the Jhelum has led to increased soil erosion, sedimentation, and reduced water quality.

The Chenab River, the largest river in J&K, originates from the confluence of the Chandra and Bhaga rivers in the Lahaul and Spiti district of Himachal Pradesh. It flows through the Jammu region before entering Pakistan. The forests in the Chenab basin play a crucial role in regulating the flow of the river and preventing soil erosion. The river is a major source of irrigation and hydropower in the region.

The Indus River, one of the longest rivers in Asia, originates in the Tibetan Plateau and flows through Ladakh

before entering Pakistan. The forests in the Indus basin help to regulate the flow of the river and prevent soil erosion. The river is a major source of irrigation and hydropower in the region

Forest fires pose a significant threat to the forests of J&K, causing extensive damage to trees, wildlife, and soil. They can also lead to air pollution, which can have a negative impact on human health. The causes of forest fires in J&K include human activities, such as carelessness with fire, accidental fires caused by agricultural burning, electrical faults, and industrial activities, as well as natural causes like lightning strikes, particularly during the dry season. Climate change is also increasing the risk of forest fires in J&K, with rising temperatures and prolonged droughts making forests more susceptible to fire. Water is a precious resource in J&K, and it is essential to conserve it. The demand for water is increasing due to population growth, urbanization, and industrialization, while the supply of water is decreasing due to climate change, deforestation, and pollution. Water conservation is essential for ensuring that there is enough water for all users in the future. To protect forests, prevent fires, and conserve water in J&K, several strategies can be implemented. Effective forest management is essential for protecting forests, including sustainable harvesting practices, reforestation and afforestation, community participation, and enforcement of laws against illegal logging, encroachment, and other activities that damage forests.

Preventing forest fires is crucial for protecting forests, which can be achieved through public awareness campaigns, fire prevention measures, early detection and suppression systems, and community involvement. Conserving water is essential for ensuring that there is enough water for all users in the future,

which can be achieved through water harvesting, efficient irrigation techniques, water recycling, public awareness campaigns, and water pricing policies that encourage water conservation. Protecting forests, preventing fires, and conserving water is a shared responsibility. The government has a responsibility to develop and implement policies and programs, enforce laws and regulations, provide funding, and promote public awareness. Local communities have a responsibility to participate in forest management and fire prevention activities, conserve water, report illegal activities, and promote sustainable practices. Businesses have a responsibility to adopt sustainable practices, invest in technologies that reduce water consumption and pollution, support community initiatives, and promote environmental awareness among their employees and customers. Individuals have a responsibility to conserve water, avoid activities that could cause forest fires, support sustainable products and businesses, and educate themselves and others about the importance of protecting forests and water resources.

Strengthening Forest Management: Effective forest management is essential for protecting forests. This includes:

Sustainable Harvesting: Implementing sustainable harvesting practices that ensure that forests are not overexploited. This involves selective logging, where only mature trees are harvested, leaving younger trees to grow and regenerate the forest. It also includes proper planning and monitoring of harvesting activities to minimize damage to the forest ecosys-

Reforestation and Afforestation: Planting trees to replace those that have been lost due to deforestation and establishing new forests in degraded areas. Reforestation involves planting trees in areas where forests have been cleared,

while afforestation involves planting trees in areas where forests have never existed before. Both activities are crucial for increasing forest cover and restoring degraded ecosystems

Community Participation: Involving local communities in forest management, giving them a stake in the protection of forests. Local communities often have traditional knowledge about forest management and can play a vital role in protecting forests from illegal activities. Involving them in decision-making processes and providing them with economic benefits from sustainable forest management can incentivize them to protect forests.

Enforcement of Laws: Enforcing laws against illegal logging, encroachment, and other activities that damage forests. Illegal logging is a major threat to forests in J&K, and it is essential to enforce laws to deter this activity. Encroachment, where people clear forests for agriculture or settlement, is also a problem, and it is important to prevent this from happen-

Preventing Forest Fires: Preventing forest fires is crucial for protecting forests. This includes:

Public Awareness Campaigns: Educating the public about the dangers of forest fires and how to prevent them. Many forest fires are caused by human activities, such as carelessness with fire. Educating the public about the dangers of forest fires and how to prevent them can help to reduce the number of fires.

Fire Prevention Measures: Implementing fire prevention measures, such as clearing vegetation around settlements and creating firebreaks. Clearing vegetation around settlements can help to prevent fires from spreading to homes and other buildings. Creating firebreaks, which are strips of land that have been cleared of vegetation, can help

to slow the spread of fires.

Early Detection and Suppression: Establishing early detection systems to detect fires quickly and deploying firefighting teams to suppress them before they spread. Early detection systems, such as watchtowers and aerial patrols, can help to detect fires quickly. Firefighting teams need to be welltrained and equipped to suppress fires quickly and effectively.

Community Involvement: Training local communities to fight fires and providing them with the necessary equipment. Local communities are often the first responders to forest fires, and it is essential to train them to fight fires and provide them with the necessary equip-

Conserving Water: Conserving water is essential for ensuring that there is enough water for all users in the future. This includes:

Water Harvesting: Collecting rainwater and storing it for later use. Rainwater harvesting can be done on a small scale, such as collecting rainwater from rooftops, or on a large scale, such as building dams and reservoirs.

Efficient Irrigation: Using efficient irrigation techniques, such as drip irrigation and sprinkler irrigation, to reduce water consumption in agriculture. Drip irrigation delivers water directly to the roots of plants, minimizing water loss due to evaporation. Sprinkler irrigation uses sprinklers to distribute water over a field, which is more efficient than traditional flood irri-

Water Recycling: Recycling wastewater for non-potable uses, such as irrigation and industrial cooling. Wastewater can be treated to remove pollutants and then used for nonpotable purposes. This can help to reduce the demand for fresh water.