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THE CANTERS

Digital Magazine By Asian Burg

Feeding a Billion

How China Achieved Food Security
Against All Odds

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About Asian Burg

Asian Burg is an independent digital media and knowledge platform dedicated to food, health, agriculture, nutrition, culture, lifestyle and public awareness. The platform aims to bridge the gap between scientific knowledge and everyday living by presenting credible, research-based and socially relevant content in an accessible format.

Founded with the vision of promoting informed choices and healthier communities, Asian Burg focuses on evidence-driven storytelling, expert opinions, public health awareness and cultural perspectives on food and society. The platform brings together nutritionists, academicians, policy practitioners, development professionals and young writers to create meaningful dialogue around contemporary challenges.

Through its digital magazine, social media platforms, website and multimedia content, Asian Burg engages an audience that includes students, professionals, researchers, health conscious, readers and community as a whole across the globe.

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Editorial

Note

In this month's edition, we take a closer look at some of the most pressing global and local challenges shaping our present and future. From the remarkable story of how China achieved large-scale food security against significant odds, to the growing environmental threat posed by invasive plant species in Pakistan, we explore how human decisions continue to reshape both our ecosystems and our societies.

We also delve into deeply human concerns understanding Alzheimer's disease, its scientific complexity and the ongoing global search for a cure. Alongside this, we reflect on the changing nature of childhood in the digital age, where screens are rapidly replacing traditional outdoor activities and reshaping development in ways we are only beginning to understand. In recognition of global health awareness, we also highlight Autism Awareness Day and World Health Day reinforcing the importance of inclusion, understanding and collective well-being. Finally, we confront the critical dilemma of food wastage an issue that contrasts starkly with global hunger and demands urgent reflection and action.

Through this diverse range of stories, Asian Burg continues its mission to inform, question and inspire. We hope this edition encourages readers to think critically about the world around them and to recognize that meaningful change begins with awareness.

Preface

This issue of **Asian Burg Magazine** explores a world in rapid transition one where the pace of change is outstripping the systems meant to understand it. From shifting ecological patterns to evolving scientific frontiers from the transformation of childhood in a digital age to the growing urgency of health and neurodiversity, we are witnessing a moment in which nearly every aspect of human life is being quietly redefined.

This edition seeks to connect them as part of a larger, shared reality. It looks at how environmental pressures are reshaping natural balance, how medical science is racing ahead while public understanding struggles to keep pace and how technology is fundamentally altering attention, learning and growth from an early age. It also reflects on the language we use to describe health and difference and what it reveals about how we see one another in a changing world.

At its core, this magazine is not only about documenting change but about interpreting it. Because in a time of accelerating complexity, facts alone are not enough. What matters just as much is context, reflection and the willingness to question what we think we already understand.

Ultimately, this issue is guided by a single belief that knowledge only becomes meaningful when it leads to awareness and awareness only matters when it shapes the choices we make.

Feeding a Billion

How China Achieved Food Security Against All Odds

Few development challenges in modern history have been as formidable as the one China faced in the twentieth century: how to feed nearly a quarter of the world's population on less than a tenth of its arable land, with limited fresh water, recurrent natural disasters and the scarring memory of famine still fresh in the national consciousness. That China has not only met this challenge but, by most measures, achieved it is one of the most consequential agricultural transformations in human history. Understanding how it happened offers lessons that resonate far beyond Chinese borders.

A Nation That Once Knew Hunger

The starting point matters. As recently as 1979, an estimated 490 million Chinese people were living in poverty and a large portion of the population faced chronic food insecurity. The Great Famine of 1959 to 1961, linked to the disruptions of the Great Leap Forward, had claimed tens of millions of lives in what remains one of history's most catastrophic man made humanitarian disasters. Just 40 years ago, China faced food insecurity and malnutrition, as a senior FAO official acknowledged during a 2025 celebration of international cooperation in fighting hunger. The distance China has travelled since then is staggering.



The Reform That Changed Everything

The inflection point came in the late 1970s when economic reforms under Deng Xiaoping dismantled the collective farming system and replaced it with the household responsibility system, which allowed farm families to work land on long-term leases and retain surplus production after meeting state quotas. The effect on agricultural output was immediate and dramatic. Farmers, now working for themselves rather than for the collective, had every incentive to produce more.

This institutional reform created the foundation upon which all subsequent agricultural gains were built. It also gave scientists the space to work and governments the credibility to invest.

The Father of Hybrid Rice

No account of China's food security would be complete without Yuan Longping, whose life's work became inseparable from China's agricultural fate. Yuan Longping was a Chinese agronomist known for developing the first hybrid rice varieties in the 1970s. His technology allowed China to sustain 20 percent of the global population on 9 percent of global arable land, an achievement for which he was awarded the 2004 World Food Prize and the 2004 Wolf Prize in Agriculture.

The scientific problem Yuan set out to solve in the 1960s was considered by most researchers to be insurmountable. Rice is a self pollinating plant, and the conventional wisdom held that hybrid vigor, the boost in productivity that comes from crossing genetically dissimilar parents, could not be achieved in such a crop. Yuan's research hybridized wild strains of rice with existing strains. He was dubbed "the father of hybrid rice" and was considered a national hero in China.



The Red Line

Protecting Farmland

Science alone could not guarantee food security if the land itself kept shrinking. Rapid urbanization and industrial expansion across China threatened to eat into agricultural land at a pace that alarmed policymakers. The government's response was to draw what has since become known as the farmland red line.

China established a rigid policy of ensuring that the total area of its farmland does not fall below the red line of 1.8 billion mu, equivalent to 120 million hectares. Alongside this, efforts to build high standard farmlands and the adoption of advanced agricultural technologies have underpinned China's food security achievements. According to China's Ministry of Agriculture and Rural Affairs, over 66.7 million hectares of high standard farmland have been built, and the machinery penetration rate in agricultural production has surpassed 75 percent, 13 percentage points higher compared to a decade ago.

Production Records and Policy Discipline

The consistency of China's grain output in recent decades speaks to the depth of this policy commitment. For nine consecutive years, China maintained stable grain production exceeding 650 million tonnes. In 2024, the total grain output reached a historic 700 million tonnes, primarily driven by increases in wheat, rice and corn. More precisely, China's grain output in 2024 reached a record high of 706.5 million metric tons, a 1.6 percent increase from the previous year, while the national average yield per mu rose to 394.7 kilograms. These numbers did not emerge by accident. The Chinese government published the Food Security Law in December 2023, which requires government officials at all levels to ensure food supplies are produced and processed within China as much as possible. For five consecutive years including 2024, the government's No. 1 Document has set the goal of maintaining national grain output above 650 million metric tons. This annual policy instrument, issued at the start of each calendar year, signals to every tier of government that agriculture is not a secondary concern.

Self-Sufficiency in Staples



The achievement of near total self sufficiency in the three main staple grains is particularly significant. China's officially published data show the self sufficiency rates of rice, maize and wheat higher than 98 percent in 2015 and 2019, and over 95 percent in 2022. From 2012 to 2022, the per capita possession of grain in China has been 472.19 kilograms, exceeding the internationally recognized food security line of 400 kilograms. The average stock to consumption ratio of grain is 54.13 percent, far exceeding the food security warning line of 17 percent set by the Food and Agriculture Organization of the United Nations.

According to data from the World Food Programme, China's hunger index is categorized as a "blue zone," similar to that of European and American countries, signifying a very low prevalence of undernourishment among the general population. This places China alongside some of the world's wealthiest nations on one of the most fundamental measures of human welfare.

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One illustrative example is Pinduoduo, a Chinese e-commerce company that has invested billions of dollars in agri-food projects



Technology as the New Frontier

As the gains from land reform and crop hybridization matured, China turned increasingly to digital technology and artificial intelligence to drive the next phase of agricultural productivity. AI investment has poured into the industry, optimizing farm management, delivery networks, food safety monitoring and strategic stockpile decision-making. One illustrative example is Pinduoduo, a Chinese e-commerce company that has invested billions of dollars in agri-food projects. Using cloud technologies, Pinduoduo developed a centralized information system that manages dispersed supply chains, processes market information and conducts sales, seamlessly linking farmers and consumers from around the country.

China has heavily invested in biotechnology and digital technologies, including supporting the development of genetically modified crops like soybeans and corn. The country is also embracing digitization to modernize agriculture, as exemplified by the National Smart Agriculture Implementation Plan (2024-2028), which includes the construction of "digital villages" and modern agricultural parks aimed at enhancing productivity through technological innovation.

The Challenges That Remain

China requires acknowledging that China's food security story is not without serious unresolved tensions. Beyond staple grains, the country remains heavily reliant on imports for products like sorghum, barley, soybeans and vegetable seeds. In 2024, China's total grain imports amounted to 157.53 million tonnes, the third-highest level of grain imports in history. For certain crops, the dependency is acute: sorghum self-sufficiency sits at just 18.8 percent and barley at 17.6 percent, indicating over 80 percent reliance on imports for these crops.

Demand for crops for non-food purposes is increasing significantly, posing new challenges to the country's food supply. Climate change, shrinking groundwater reserves and the continued pressure of urbanization on agricultural land all represent structural vulnerabilities that no policy document can simply wish away.





A Model Worth Studying

China's food security journey is a testament to what sustained political will, institutional reform, scientific investment and coherent long term policy can achieve. Chinese agriculture has managed to satisfy the food requirements of nearly 19 percent of the world's population, utilizing only 7 percent of the earth's arable land. China's approach to addressing its food challenges increasingly influences geopolitics and global governance.

Beyond its domestic achievements, China has actively sought to deepen international cooperation in food and agriculture, sharing agricultural expertise with other developing nations, including those in Africa, through technology exchanges, joint research and training programs and active participation in global food governance.

For countries like Pakistan, which faces its own pressures of a growing population, climate stressed farmland and persistent rural poverty, the Chinese experience holds genuine instructive value, not as a blueprint to be copied wholesale, but as evidence that the trajectory from food insecurity to sufficiency is achievable when science, land policy and governance are made to work in concert.



Opus

Dil Walon ki CHOCOLATE



SCAN TO
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Sustainable Agriculture in Pakistan

Rethinking Water Use for a Resilient Future



Waterintensive crops

Agriculture in Pakistan has always been the backbone of the economy, supporting livelihoods, ensuring food security and sustaining rural communities. Built around the vast Indus Basin irrigation system, this sector has enabled the country to cultivate key crops such as rice, sugarcane, cotton and wheat. However, with growing population pressures and changing climate patterns, the demand for water has increased significantly. This calls for a thoughtful reassessment of how water is being usedone that

acknowledges challenges while focusing on realistic and achievable solutions.

Many of the crops widely cultivated in Pakistan are naturally waterintensive. Rice, for exampleis traditionally grown under flooded conditions, while sugarcane requires consistent watering over a long growing season. Cotton and wheat, though comparatively moderate in water use, still contribute significantly due to their large cultivated areas. These crops are not inherently problematicthey are essential for food supply, exports and industrybut their cultivation methods and geographic spread can sometimes place stress on available water resources.

Over the period of time to meet irrigation needs, farmers have increasingly turned to groundwater through tube wells, especially in areas where canal water is insufficient or unreliable. This has gradually lowered groundwater levels in certain regions. At the same time, conventional irrigation practices, particularly flood irrigation, result in considerable water losses. These challenges, present an opportunity to rethink agricultural practices in a way that is both efficient and sustainable. Significantly, there are several practical and already-tested approaches that can help address these concerns without disrupting the agricultural economy.

One of the most promising pathways is **improving irrigation efficiency**. Techniques such as drip irrigation and sprinkler systems allow water to be delivered directly to plant roots, reducing wastage and improving crop productivity. Even relatively simple measures, like laser land leveling, can ensure more uniform water distribution across fields, leading to significant water savings. These methods have already shown positive results in various parts of Pakistan and can be expanded further with institutional support.

Another important step is **gradual crop diversification**. Instead of completely replacing staple crops, farmers can be encouraged to introduce less water intensive crops alongside existing ones. Crops such as maize, millet, sorghum, pulses and oilseeds require comparatively less water and are well-suited to local climatic conditions. This balanced approach allows farmers to maintain income stability while reducing overall water demand.

In addition, **better water management practices** can make a meaningful difference. Scheduling irrigation based on crop needs, rather than fixed routines, helps avoid overwatering. Similarly, promoting awareness about soil moisture management and efficient fertilizer use can reduce both water consumption and groundwater contamination.



Policy support also plays a vital role. Strengthening groundwater monitoring systems, encouraging responsible use through incentives rather than strict penalties, and investing in farmer training programs can create a more supportive environment for change. Expanding access to agricultural extension services will help farmers adopt improved practices with confidence.

At the community level, **rainwater harvesting and small-scale storage solutions** can supplement irrigation needs, especially in rain-fed areas. Capturing and utilizing seasonal rainfall not only reduces dependence on groundwater but also enhances resilience during dry periods.

Another area of focus is **soil health and salinity management**. Improving drainage systems, adopting crop rotation, and using salt-tolerant crop varieties where necessary can help maintain soil productivity and protect water quality over time. With the right mix of awareness, technology and policy support, it is entirely possible to maintain agricultural productivity while using water more responsibly.

Pakistan has the advantage of experience, infrastructure and a resilient farming community. By building on these strengths and gradually adopting more efficient practices, the country can move toward a future where water resources are managed sustainably ensuring that both agriculture and communities continue to thrive.

Do You Know?

Reverse Osmosis (RO) water treatment plants use pressure to force water through a semi-permeable membrane, removing 85–98% of dissolved salts, heavy metals, bacteria and other impurities. This makes RO one of the most effective methods for producing safe drinking water, especially in areas with contaminated sources.

However, the safety of RO water depends heavily on proper maintenance. Poor system management or irregular cleaning can lead to bacterial growth and reduced water quality. To ensure safety, it is essential to regularly replace filters and membranes, disinfect the system, monitor Total Dissolved Solids (TDS) and microbiological quality and prevent water stagnation in pipelines.

In short: RO water is safe to drink but only when the system is properly maintained.



Exotic Plants and Pakistan's Deepening Environmental Crisis

Pakistan is under siege. Not from armies or floodwaters alone, but from something far more insidious plants. Quietly, relentlessly and largely unnoticed by policymakers, hundreds of exotic plant species introduced over decades are spreading across the country's plains, forests, riverbanks and cities. They are outcompeting native flora, poisoning livestock, sickening city dwellers

and dismantling ecosystems that millions of Pakistanis depend on for their food, water and livelihoods. Scientists rank biological invasion as the second greatest threat to biodiversity on earth, exceeded only by direct habitat destruction. Pakistan, with its extraordinary range of environments stretching from coastal mangroves to alpine meadows, sits squarely on the front line.

THE GREEN INVADERS

A Tree That Turned Against the City

Of all the invasive plants threatening Pakistan, none carries a more visible public health cost than paper mulberry, *Broussonetia papyrifera*. Introduced from East Asia and planted widely across Islamabad for shade and beautification, it has become the capital's most medically dangerous ornamental choice. Every spring, between March and April, the city transforms into what allergists describe as a respiratory emergency zone. Pollen concentrations reach up to 40,000 grains per cubic meter per day among the highest recorded anywhere in the region. Hospitals in Islamabad and Rawalpindi report sharp annual spikes in emergency

admissions for asthma, allergic rhinitis and conjunctivitis during precisely this window.

The tree spreads aggressively. Its seeds disperse rapidly by wind and water, colonizing roadsides, wastelands and any patch of disturbed ground within reach. The Capital Development Authority has undertaken formal removal efforts, but the plant's reproductive vigour consistently outpaces these interventions. For hundreds of thousands of Islamabad's residents, spring has become a season of closed windows, inhalers and missed school days.

The Weed That Ate the Farmland

In the agricultural heartlands of Punjab and Khyber Pakhtunkhwa, a different kind of invader has taken hold. *Parthenium hysterophorus*, known locally as *gajarghaas*, arrived from the tropical Americas and found in Pakistan's disturbed soils an environment perfectly suited to its extraordinary reproductive capacity. A single plant produces approximately 25,000 seeds. Those seeds colonize open ground with a speed that overwhelms manual control efforts.

What makes *Parthenium* particularly destructive is that it does not merely compete for space. It wages chemical



warfare. The plant releases allelopathic compounds through its roots and leaf litter that actively suppress the germination and growth of surrounding vegetation. Crops planted in *Parthenium*-infested soils yield measurably less. The plant is also directly harmful to people and animals. Contact with *Parthenium* causes severe dermatitis in farmworkers. Livestock that graze on infested land suffer poisoning. In rural communities where farming is already precarious, this weed compounds vulnerability at every level.

The Afforestation That Backfired

Prosopis juliflora, a thorny shrub from the Americas known locally as *Jangli Kikar*, was planted across Sindh and Punjab with the best of intentions. It was recommended as a solution to deforestation, a fast-growing species that could provide fuelwood and stabilize degraded land. What planners did not fully anticipate was its capacity to dominate.

Jangli Kikar has formed near monocultures across vast stretches of lowland Pakistan, displacing the native scrubland that once supported diverse communities of insects, birds

and grazing animals. Its root system reaches deep into the water table, extracting groundwater that native species cannot access and depleting soil moisture across wide surrounding areas. Rangelands that once supported pastoral livelihoods have been reduced to impenetrable, ecologically barren thickets. The pods of the plant are toxic to livestock in large quantities, adding injury to the displacement of the very vegetation those animals once depended on.

The story of *Jangli Kikar* is a cautionary lesson in ecological humility. The impulse to plant something fast growing and hardy is understandable. The consequences of doing so without adequate understanding of the target ecosystem can persist for generations.



The Ornamental Invaders

Not all invasive plants arrived as utilitarian choices. *Lantana camara* was introduced as an ornamental shrub valued for its colorful flowers. It has since formed dense, impenetrable thickets across disturbed land and forest edges, toxic to livestock and hostile to the native understory plants that once grew beneath the tree canopy. Eucalyptus, planted in long rows along Punjab's canal sides and roadsides, presents a subtler but equally serious problem. It releases allelopathic compounds into the surrounding soil and consumes groundwater at rates that threaten both adjacent native vegetation and nearby agriculture. The shade and windbreak these trees were planted to provide come at an ecological cost that was never factored into the original decision.

When Climate Change Joins the Invasion

The challenge is not static. Rising temperatures and increasingly erratic rainfall are actively tilting the ecological balance further in favour of invasive plants. Fast growing, stress tolerant exotics are generally better equipped to exploit disturbed and degraded conditions than the slower growing native species they displace. Species distribution models project significant northward range expansion for several key invasive plants, including *Xanthium strumarium*, into central and northern Pakistan by the period 2050 to 2070. Climate change and biological invasion are not parallel crises. They are mutually reinforcing ones. Each makes the other worse.

The Path Forward

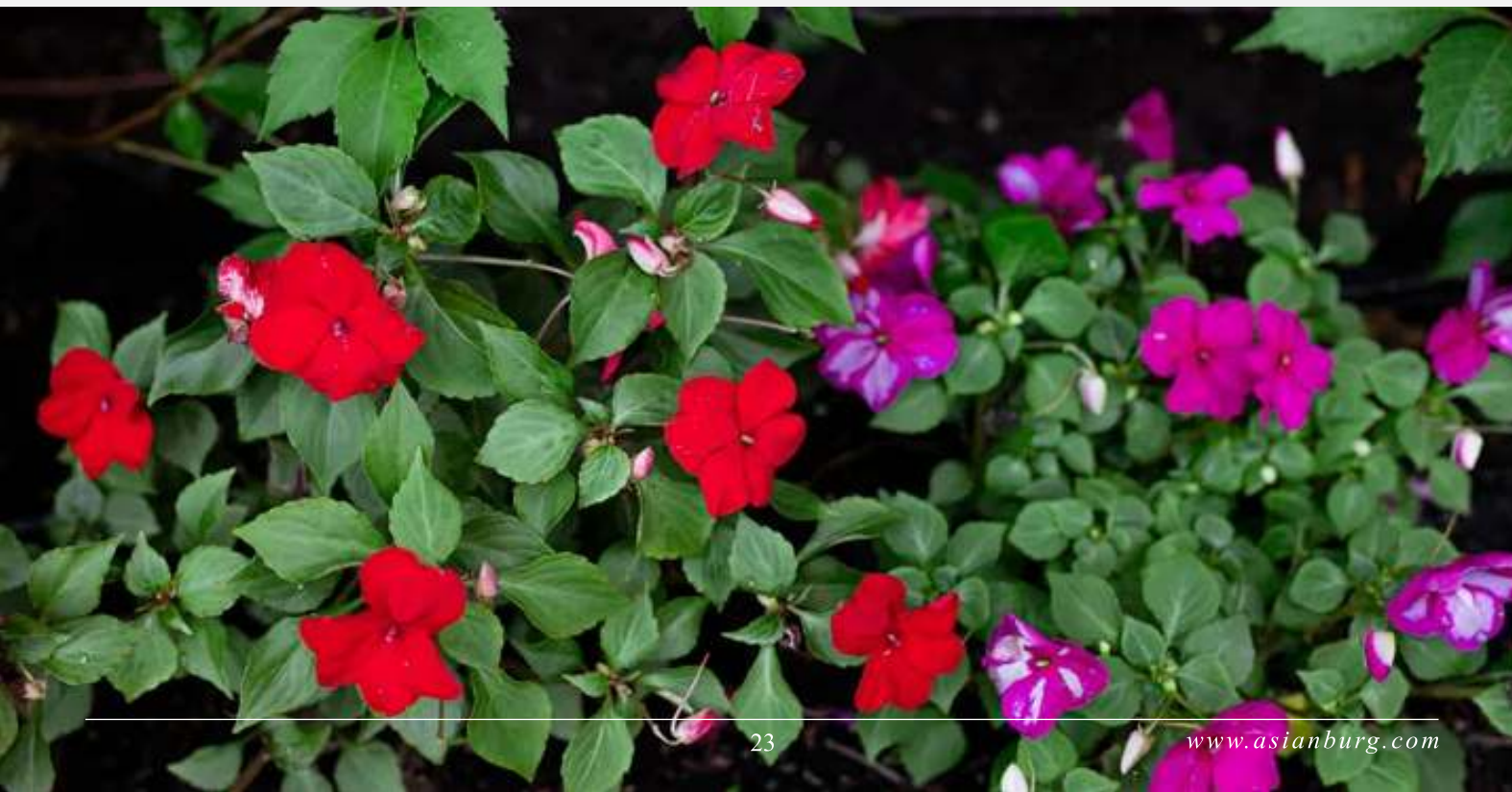
The knowledge exists. Pakistan identified its most serious invasive plant threats more than two decades ago. Research published in the Pakistan Journal of Forestry, Pakistan Journal of Botany and international journals including BMC Ecology and Evolution and Public Library of Science(PLoS) One has documented these threats with increasing precision. What has lagged behind is the institutional will to act on that knowledge in a coordinated and sustained way.

What is needed is not complicated in its outline, though it demands genuine commitment in its execution. A dedicated national invasive species law, assigning clear mandates to a lead institution with genuine enforcement powers, is the foundational requirement. Alongside legislation, Pakistan needs functioning early warning systems combining satellite monitoring, regular field surveys and citizen science reporting networks to detect new infestations while control is still feasible. For established populations, integrated management

combining mechanical removal, targeted herbicide application and biological control agents offers the most realistic path to containment.

Public awareness cannot be an afterthought. Gardeners, farmers, urban planners, landscape architects and healthcare providers all make decisions that either accelerate or slow the spread of invasive species. Equipping them with the knowledge to make better choices is as important as any regulatory framework. Finally, cross border collaboration with India, Iran and Bangladesh countries facing many of the same species and the same pressures would multiply the effectiveness of whatever Pakistan does domestically.

Pakistan's native ecosystems are not passive victims. Given the chance, they can recover. But that chance requires deliberate, adequately funded and politically sustained intervention. The invasions, left unchecked, will not reverse themselves. The window for effective action narrows with every growing season.



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Understanding Alzheimer's Disease

The Science, the Scale and the Search for a Cure



There is a particular cruelty to Alzheimer's disease that sets it apart from almost every other illness that medicine confronts. It does not simply weaken the body or compromise an organ. It dismantles the self. Slowly, systematically and without mercy, it erases the memories, personalities and capacities that make a person who they are. A grandmother no longer recognizes her grandchildren. A retired professor cannot recall what he did yesterday. A lifelong musician forgets that she ever played. The disease takes not just life, but the person living it and it does so across years, sometimes decades, while families watch and grieve in real time.

Alzheimer's disease is no longer a private tragedy quietly endured by aging families. It is a global public health emergency of the first order, and the science, policy and human cost surrounding it demand urgent and informed attention.





The Scale of the Crisis

According to the World Health Organization's 2022 blueprint for dementia research, an estimated 55.2 million individuals globally are affected by dementia. Alzheimer's disease is the most common form, accounting for the majority of all dementia cases. The numbers are growing at a pace that should alarm every health system in the world. In 2019, an estimated 51.62 million individuals were living with dementia, marking a staggering increase of over 160 percent since 1990. Without effective preventive strategies, that number is expected to rise to 152 million by 2050.

In the United States alone, an estimated 7.2 million Americans aged 65 and older are living with Alzheimer's in 2025, with nearly two-thirds of them being women. About one in nine people aged 65 and older has Alzheimer's, and older Black Americans are approximately twice as likely to be affected compared to older White Americans.

The economic consequences are equally staggering. Health and long-term care costs for people living with dementia are projected to reach 384 billion dollars in 2025 and nearly one trillion dollars by 2050. In 2024, unpaid caregivers provided an estimated 19 billion hours of care, valued at more than 413 billion dollars. These are not abstract numbers. They represent the lives of millions of family members who have quietly reorganized their own existence around caring for someone who may no longer remember their name.

What Happens Inside the Brain

Alzheimer's disease is a neurodegenerative disorder, meaning it progressively destroys nerve cells and the connections between them. Its etiology is intricate and diverse, stemming from a combination of factors such as aging, genetics and environment. Current understanding of Alzheimer's pathology involves various hypotheses, including the cholinergic, amyloid, tau protein, inflammatory, oxidative stress, metal ion and glutamate excitotoxicity hypotheses.

Of these, the amyloid and tau hypotheses have attracted the most sustained scientific attention. The disease is characterized by two hallmark pathological changes in the brain. The first is the accumulation of abnormal protein fragments called beta-amyloid, which clump together to form plaques between nerve cells. The second is the formation of neurofibrillary tangles, caused by a malfunction in tau protein, which normally supports the internal structure of neurons. In 1984, Dr. George Glenner and Dr. Cain Wong identified amyloid protein as the primary constituent of extracellular plaques. In 1986, researchers discovered that the abnormal hyperphosphorylation of tau protein results in the neurofibrillary tangles characteristic of Alzheimer's.

What makes early detection so difficult is that pathological changes in dementia can begin 20 years or more before clinical symptoms emerge, meaning that by the time a person begins to forget names or lose their way in familiar streets, the underlying disease has already been quietly at work for two decades.

The clinical diagnostic criteria for Alzheimer's were updated in 1984, 2011, 2018 and 2024 to reflect the growing availability of biomarkers and improved ability to identify preclinical disease. In the most recent update in 2024, Alzheimer's is described as beginning as an asymptomatic biological process, progressing to clinical symptoms as the neuropathologic burden increases. This shift in understanding, from a disease diagnosed only when symptoms become obvious to one that can be identified through biomarkers years before cognitive decline begins, has fundamentally changed how clinicians and researchers think about the therapeutic window for intervention.

Who Is at Risk

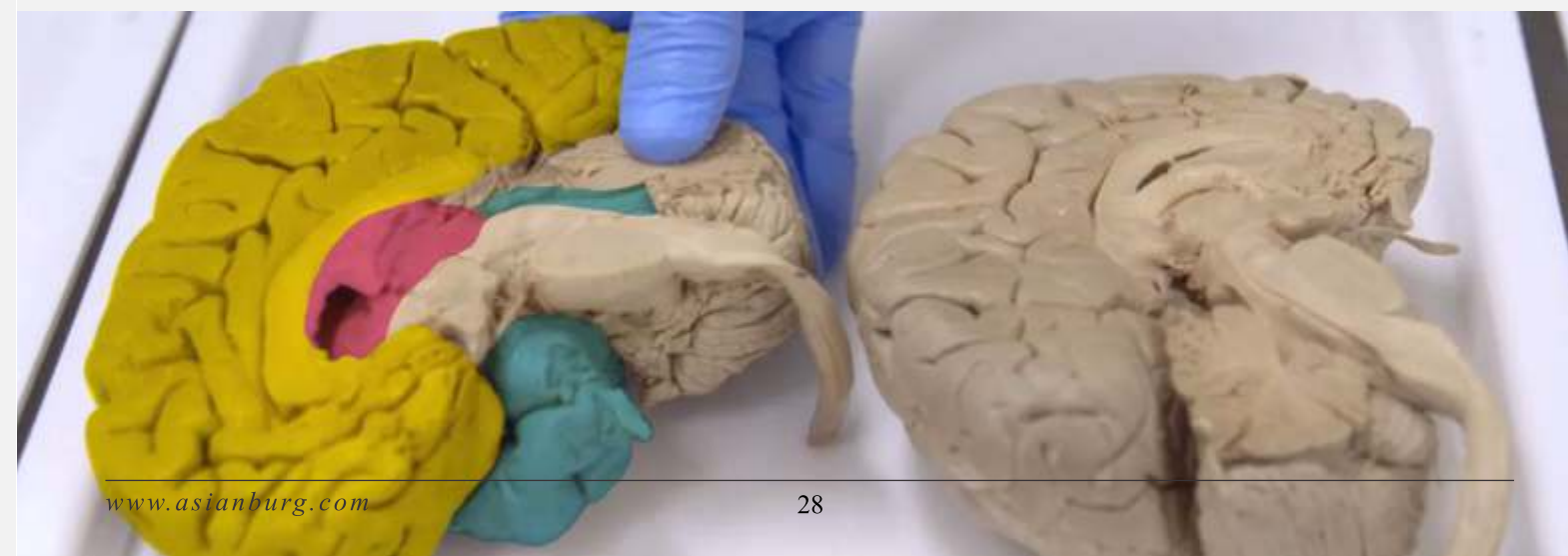
Age is the single strongest risk factor. The probability of developing Alzheimer's increases significantly after the age of 65 and continues to rise steeply with each passing decade. But age is not destiny. A substantial body of research has identified a range of modifiable risk factors that collectively account for a meaningful proportion of all cases.

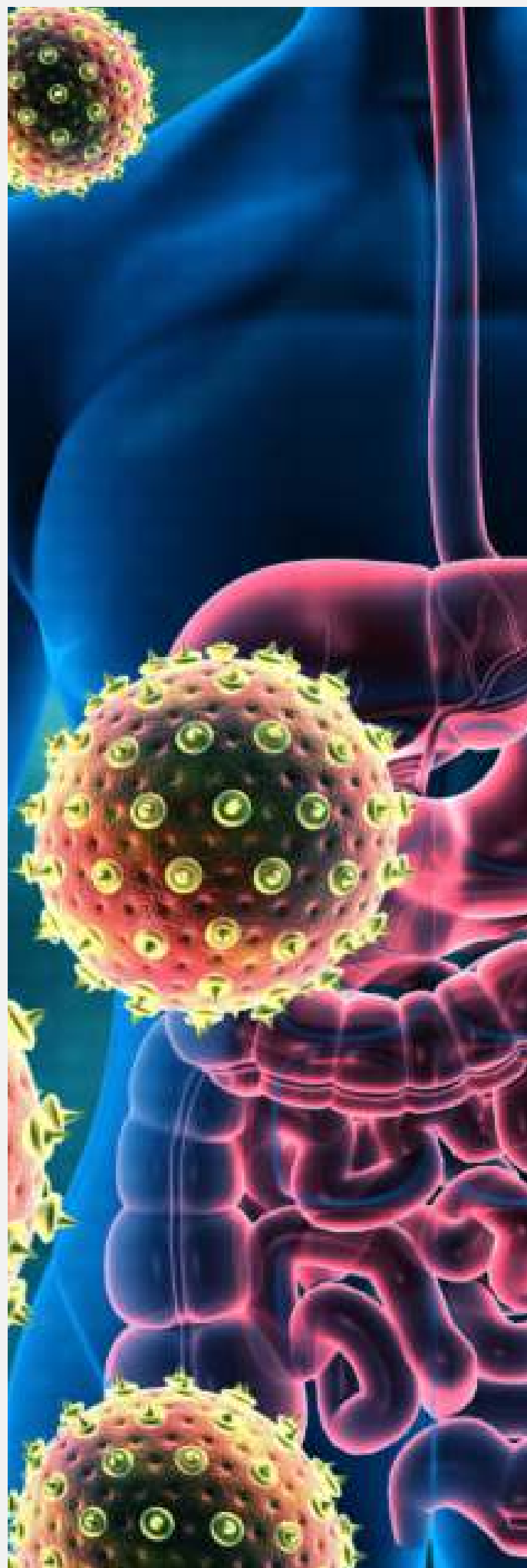
The 2020 Lancet Commission examined twelve risk factors associated with dementia, including lower levels of education, traumatic brain injury, a sedentary lifestyle, tobacco use, excessive alcohol consumption, hypertension, obesity, diabetes mellitus, hearing impairment, depression, social isolation and air pollution. A

reduction in these factors was found to have the potential to prevent 40 percent of dementia cases. The subsequent 2024 Lancet Commission identified visual impairment and elevated cholesterol as two additional potentially modifiable risk factors, bringing the total to fourteen. Collectively, by proactively addressing these fourteen risk factors, it is theoretically feasible to prevent half of all dementias.

Genetics also plays a significant role in a subset of cases. The APOE-e4 gene variant is the most well-established genetic risk factor for late onset Alzheimer's, and the lifetime risk for Alzheimer's at age 45 is one in five for women and one in ten for men. The higher prevalence among women is a subject of ongoing investigation, with researchers exploring the role of biological factors including hormonal changes at menopause and their interaction with genetic susceptibility.

Lifestyle related risk factors such as cardiovascular disease, hypertension, diabetes and obesity are increasing in middle-income countries, and these factors are closely linked to Alzheimer's disease. Lower levels of education and cognitive reserve make populations in lower-income regions more vulnerable, emphasizing the need for better education and preventive measures. This is a particularly significant observation for countries like Pakistan, where education access remains uneven and the prevalence of diabetes, hypertension and obesity is rising sharply across all age groups.





The Stages of the Disease

Alzheimer's does not announce itself suddenly. It arrives through a continuum that researchers now describe in six progressive stages. In the earliest stage, older individuals with no subjective memory or cognitive changes may already carry positive biomarkers of Alzheimer's pathology detected through brain PET scans, cerebrospinal fluid or plasma tests. This is considered the asymptomatic stage. In subsequent stages, individuals begin to experience subtle and then measurable cognitive changes, even as their daily function remains largely intact. In later stages, the disease impairs language, judgment, spatial orientation and eventually the capacity to recognize loved ones or carry out basic activities of daily living. The final stages require full time personal care and are associated with total dependence.

With Alzheimer's remaining ultimately fatal, and an average survival of four to eight years post diagnosis, the growing prevalence of the disease will continue to strain healthcare systems, increase caregiver burden and widen disparities in diagnosis and treatment access across regions.



The Search for Treatment

For most of its history, Alzheimer's medicine has been a story of symptomatic management rather than cure. In 1993, Tacrine became the first drug authorized by the FDA to address the cognitive symptoms of Alzheimer's, such as thinking and memory. The drugs that followed, including cholinesterase inhibitors like donepezil and rivastigmine, modestly slowed symptom progression but did not alter the underlying disease.

The past three years have brought a genuine paradigm shift. Recognizing the limitations of treating mild to moderate Alzheimer's, the FDA issued new guidelines for drug development emphasizing early stage intervention. This approach culminated in the FDA's approval of two anti-amyloid immunotherapy drugs in 2023 and 2024, marking a significant advancement in Alzheimer's treatment.

Among the most closely watched of these was donanemab, an amyloid targeting drug that made headlines in 2023 as the treatment with the highest slowing of cognitive decline at 35 percent. A separate analysis of those who received the drug early in their disease showed upwards of 60 percent slowing of cognitive decline, reinforcing the need for early intervention.

The pipeline is wider than it has ever been. In 2024, there were 171 ongoing studies and 134 drugs being tested in clinical trials. Over half of the new treatments are described as potentially



disease modifying, meaning they target known pathological changes in Alzheimer's to slow cognitive decline. As of March 2025, at least 25 new drug candidates developed with NIH funding have advanced to human trials. Seventeen of these new drug candidates are being developed as oral medicines and eight are being developed as various types of biologic drugs such as immunotherapy and gene therapy.

Researchers are also exploring entirely new frontiers. Recent discoveries include a new molecule that breaks down beta amyloid plaques by binding to excess copper in the brain, which restored memory and reduced inflammation in animal models. Separately, researchers found that the common amino acid arginine can block harmful amyloid aggregation and reduce its toxic effects in disease models. A shingles vaccine study in Wales produced what researchers described as an unexpected natural experiment, revealing a striking reduction in dementia among seniors who received the vaccine an intriguing signal that infectious and inflammatory mechanisms may play a larger role in Alzheimer's than previously understood.



The Prevention Imperative

Given the enormous burden of the disease and the still limited reach of available treatments, prevention has emerged as the most promising lever for reducing the global toll of Alzheimer's in the near term. Over a quarter of people globally incorrectly believe there is nothing that can be done to prevent dementia, with that proportion rising to 37 percent in lower and middle income countries. This is one of the most consequential misconceptions in public health today.

The evidence base for lifestyle based prevention is substantial and growing. Regular physical exercise, sustained social engagement, management of cardiovascular risk factors, avoidance of tobacco and alcohol, adequate sleep and continuous cognitive stimulation all appear to reduce risk meaningfully. The Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability showed slowed cognitive decline in older at risk people with two years of multidomain lifestyle intervention. These trials have since expanded into the worldwide FINGERS study, which is ongoing across multiple countries.

Nearly half of dementia cases could theoretically be prevented by eliminating fourteen modifiable risk factors, as stressed by the 2024 update of the Lancet Commission on dementia, with even greater potential for risk reduction in low income and middle income countries. This finding carries profound implications for public health strategy in countries like Pakistan, where the intersection of rising metabolic disease, limited education access and an aging population creates precisely the conditions that amplify Alzheimer's risk.

The Human Cost and the Road Ahead

Behind every statistic is a family. Nearly 12 million Americans provide unpaid care for people with Alzheimer's or other dementias. Multiply that reality across the developing world, where formal care systems are sparse and the burden falls almost entirely on family members, particularly women, and the human cost of this disease becomes almost incomprehensible in its scale.

More than 90 percent of carers and members of the general public surveyed by Alzheimer's Disease International said they would be encouraged to get a diagnosis if a disease-modifying treatment for dementia were available. The appetite for solutions is there. The science is advancing at a pace not seen before. What is needed alongside the research is a parallel investment in awareness, early diagnosis infrastructure and caregiver support especially in the countries that are least equipped to absorb the coming wave of dementia cases.

Alzheimer's disease will not be solved in a single breakthrough. It is too complex, too heterogeneous and too deeply entangled with the biology of aging itself for that. But the era of scientific nihilism around this disease the resigned assumption that nothing meaningful could be done is ending. The tools to diagnose earlier, intervene sooner and support those affected more effectively are within reach. The question now is whether the will, the funding and the systems exist to deploy them at the scale the crisis demands.



The Vanishing Playground

How a Generation Lost Its Childhood to the Screen

There was a time, not so long ago, when childhood had a sound. It was the sound of bare feet on gravel, of bicycle wheels on a summer road, of children calling to each other across a field until the light faded and a parent's voice carried through the evening air telling them it was time to come in. That childhood boisterous, sun-darkened, scraped-kneed and free was not merely nostalgic. It was, as science is now confirming with increasing urgency, profoundly good for children. The tragedy of our present moment is not simply that this childhood is disappearing. It is that we are replacing it with something that is quietly, measurably making our children unwell.

The smartphone, the tablet, the glowing rectangle that has become the defining object of twenty-first century life these are not simply new toys. They are ecological disruptors of human development, arriving faster than any generation of parents has been equipped to manage and taking up residence in nurseries, bedrooms and school bags with a thoroughness that no previous technology achieved. Understanding what we are trading away and what the evidence tells us about the consequences, is no longer an academic question. It is a matter of public health.

A Generation That Grew Up Outside

For most of recorded history and well into the latter half of the twentieth century, outdoor play was not a scheduled activity. It was simply what children did. After school, on weekends, during long summers with no particular agenda, children moved through neighborhoods, fields, parks and the odd patch of wasteland that served as an impromptu football pitch or den. This freedom was not the result of enlightened parenting philosophy. It was the default state of childhood before the alternatives existed.

Unstructured outdoor time was a lot easier to come by when children roamed suburbia on their bikes, when parents told their children to go play in the neighborhood and be home for dinner. Unstructured outdoor time has been declining for 40 years, for a variety of reasons. That decline began, notably, before smartphones

existed. Television and video games had already begun pulling children indoors in the 1980s and 1990s. But the arrival of mobile internet, and especially the smartphone in its modern form, accelerated the retreat from outdoor life with a swiftness that left researchers scrambling to keep pace with the implications.

A 2018 survey reported that children today spend 35 percent less time playing outside freely than their parents did. The contrast in daily habits is stark. The average American child spends as few as 30 minutes in unstructured outdoor play each day and more than seven hours each day in front of an electronic screen. The generation that is growing up today is the first in human history to spend the majority of its waking hours indoors, largely sedentary, mediated through a glass screen.



The Body Pays the Price

The physical consequences of this shift are the most visible and the most measurable. Children who do not move do not develop the bodies that movement builds. Children today are experiencing a surge in sedentary lifestyles primarily due to screen time. This lack of physical activity is contributing to rising rates of childhood obesity, diabetes and other health problems. Without opportunities for outdoor play, children are more likely to develop poor posture, weakened muscles and other health issues related to inactivity.

The prolonged use of digital devices has a significant negative impact on children aged 2 to 12, leading to decreased physical activity, sleep disturbances, behavioral issues, lower academic performance, socioemotional challenges and eye strain, particularly following extended online learning during lockdowns.

The cardiovascular implications are particularly concerning and represent a frontier of research that parents rarely hear about. The more time children spend on smartphones, the greater the risk of heart disease. Each additional hour spent on screen time is linked to a cluster of cardiometabolic risks such as high blood pressure and obesity. This appears logical since the more hours children spend on a phone or tablet, the fewer hours they are involved in physical activity.



What Screens Are Doing to the Developing Brain

If the physical consequences of indoor, screen-dominated childhood are serious, the effects on the developing brain are, in some respects, even more profound. The brain of a young child is not simply a smaller version of an adult brain. It is a structure under active, rapid construction, and the experiences it receives during early childhood shape its architecture in ways that persist for a lifetime.

For young children, especially those under the age of three, development is happening rapidly. Young children learn by exploring their environment and watching the adults in their lives and then imitating them. Excessive screen time may inhibit a child's ability to observe and experience the typical everyday activities they need to engage with in order to learn about the world, leading to a kind of tunnel vision which can be detrimental to overall development.

A landmark study by the National Institutes of Health found that children who spent more than two hours a day on screen-time activities scored lower on language and thinking tests. More alarmingly, children with more than seven hours a day of screen time experienced thinning of the brain's cortex, the area of the brain related to critical thinking and reasoning.

The age at which children engage with media on a regular basis has fallen from four years in 1970 to four months in the present day. This is not simply a statistical curiosity. It means that infants who are neurologically incapable of understanding what they are looking at are being exposed to rapid-fire visual stimulation at a developmental moment when the brain most needs calm, reciprocal human interaction to build the foundations of language, attention and emotional regulation.

High exposure to background television has been found to negatively affect language use and acquisition, attention, cognitive development and executive function in children younger than five years. It also reduces the amount and quality of parent-child... interaction and distracts from play. The phone in a parent's hand is also part of this picture. An online survey of 6,000 children and parents found that 54 percent of children said their parents checked their smartphones too often and 32 percent felt they were unimportant when parents were distracted. Over half of the parents said they probably checked their smartphones too frequently.





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The Creativity That Outdoor Play Built

One of the most underappreciated losses of the indoor generation is the erosion of creativity. Creativity is not simply a gift that some children have and others do not. It is in large measure, a capacity built through unstructured play — through the boredom that becomes imagination, the stick that becomes a sword, the hill that becomes an adventure.

As outdoor play has decreased, creativity scores measured by the Torrance Tests of Creative Thinking have steadily declined since 1990. The most significant decrease is seen in kindergarteners through third graders. Boosting creativity is important because it is a vehicle for self-expression and a foundational skill for managing emotions and solving problems. It also promotes language, literacy and social development.

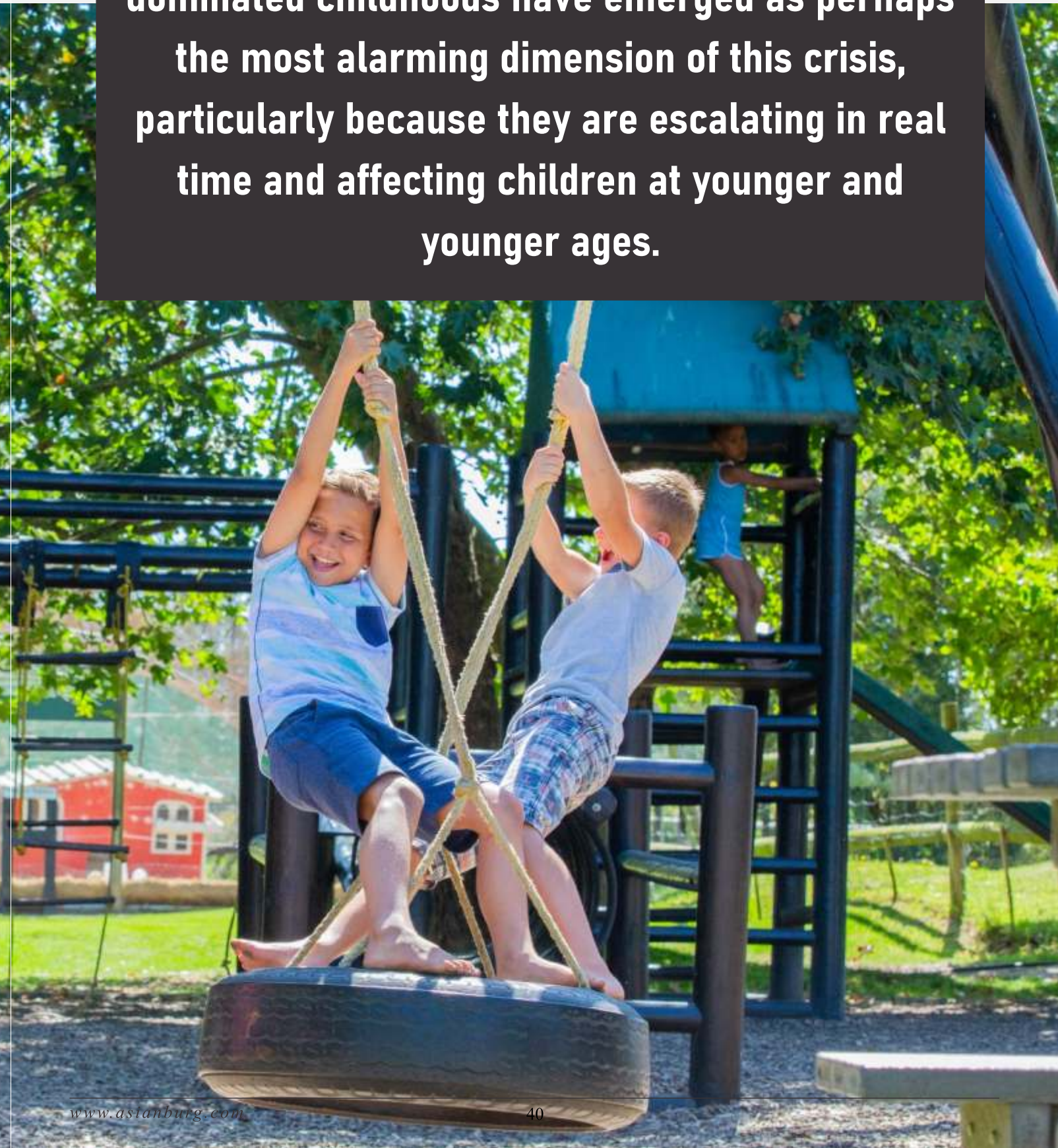
The sensory experiences of the natural world enhance children's creativity and imagination, fostering a sense of wonder and curiosity. The combination of physical activity and cognitive play experiences in nature contributes to children's overall development and well-being. Moreover, outdoor play offers opportunities for children to engage in unstructured social interactions, learn conflict resolution and develop crucial social skills.

None of this is replicated by a screen, no matter how educational the content. A child navigating a disagreement on a playground, deciding how to build a structure out of branches, negotiating the rules of a made-up game with three other children — these experiences train capacities that no application has yet been designed to replicate.



Mental Health: The Quiet Emergency

The mental health consequences of screen-dominated childhoods have emerged as perhaps the most alarming dimension of this crisis, particularly because they are escalating in real time and affecting children at younger and younger ages.





Numerous studies have linked excessive screen time for children to increased levels of stress, anxiety and depression. A study in the Journal of Preventive Medicine found that children aged 2 to 17 who spend seven or more hours a day on a screen are twice as likely to be diagnosed with anxiety or depression as children who spend less time on screens.

A meta-analysis of 32 studies involving 26,266 students found that problematic social media use was significantly associated with a number of mental health concerns including anxiety, depression, loneliness and low self-esteem.

The antidote, research increasingly suggests is not complicated. It is the thing children used to do naturally. Research in Japan examined screen time, outdoor play habits and subsequent neurodevelopmental outcomes of 885 children aged two to four years. Findings revealed that two year olds with more than one hour a day of screen time had significantly lower scores for communication and daily living skills at age four. However, for children with higher screen times, outdoor play lessened some of the adverse effects associated with screen use. Nature in other words is not simply a pleasant backdrop. It is a genuinely protective factor.

Outdoor play may benefit physiological regulation via reducing stress. Activities taking place outdoors may be particularly beneficial for reducing stress levels. The psychological benefits of regular outdoor physical activity, including better mental health, greater emotional wellbeing, fewer symptoms of depression, lower anxiety and improved sleep quality, are now well established in the scientific literature.

What the Guidelines Say and What Families Do

The guidance from medical authorities is consistent and has been so for years. According to the American Academy of Pediatrics and the US Centers for Disease Control, children younger than 18 months should have no screen time except for video chatting with family. Children aged 18 to 24 months should have only high-quality educational media with parental engagement. Children aged five and older should have no more than two hours a day while engaging in conversation with a parent about what is being



The gap between these recommendations and actual behavior is vast. According to a survey by Common Sense Media in America, the percentage of children aged zero to eight using mobile phones increased from 38 percent in 2011 to 72 percent in 2013. Even more dramatic was the increase in usage by children under two, from 10 percent in 2011 to 38 percent in 2013. Those numbers have only continued upward in the years since.

The responsibility does not lie with parents alone, though their role is central. Strategies to promote healthy digital habits should include implementing screen-free times and non-digital activities. Schools could be involved by supporting digital literacy programs or promoting non-digital behaviors, while public health campaigns can emphasize the dangers of excessive screen time.

Reclaiming Childhood

There is no serious argument for eliminating technology from children's lives entirely. The world into which this generation is growing requires digital literacy and technology used appropriately carries genuine educational value. The argument is not against screens. It is for balance and for an honest reckoning with how badly that balance has been lost.

Reclaiming children's outdoor playtime in the digital era requires concerted efforts from parents, educators, policymakers and society as a whole. The decline in outdoor play, caused by the dominance of screens and technology, has led to various physical and mental health issues while hindering holistic development.

The prescription for once, does not require a new drug, a new technology or a new policy framework. It requires something much simpler and much harder: giving children back their time. Time to move, to play without instruction, to be bored long enough that imagination fills the gap, to feel sun on their skin and earth under their feet. The children who grew up outside were not healthier by accident. They were healthier because the outdoor world met developmental needs that no indoor substitute has yet been able to replace.

The screen will always be there when they come back inside. The question is whether we are willing to make them put it down.

More Than a Fruit

Mango the Soul of Summer

There is a moment every Pakistani knows. It arrives not as a date on a calendar but as a smell warm, honeyed and faintly floral drifting from a crate in the corner of a kitchen or a heap at the roadside fruit stall. Before the first bite is taken, before the first slice is cut, the mango announces itself. And with that fragrance comes everything attached to it: the memory of summer afternoons, of sticky fingers, of chilled slices after a long afternoon fast, of family gathered around a platter with the quiet shared understanding that the best season of the year has arrived.

The mango is Pakistan's national fruit. But to describe it only in those official terms is to miss almost everything important about it. Pakistani mangoes are not just food. They are an emotion, a cultural symbol and for many, a taste of home. They are also, when examined seriously, a window into the country's history, its geography, its cuisine, its diplomacy and its agricultural identity. No other fruit carries so much.

The Land That Grows the World's Finest

Pakistan is among the top ten producers of mangoes in the world, with annual production reaching approximately 1.75 million tons, making it a substantial export commodity. The geography that makes this possible is specific and irreplaceable. The Indus River basin provides fertile alluvial ground while long, hot summers give the fruit time to ripen naturally. Unlike supermarket mangoes picked green and artificially ripened, Pakistani mangoes usually ripen on the tree before harvest. It is this unhurried natural ripening, impossible to replicate through industrial cold-chain processes, that gives Pakistani mangoes their legendary depth of flavor.



The cities of southern Punjab Rahim Yar Khan, Bahawalpur, Multan and Muzaffargarh are the centers of mango cultivation in Pakistan. In Sindh, Mirpur Khas, Hyderabad and Thatta dominate the cultivation of mango. The estimated land area dedicated to mango production spans 103,100 hectares, with Punjab accounting for over 50 percent of this total.

The two provinces complement each other seasonally in a way that extends the pleasure of the mango season for consumers across the country. Mangoes mature earlier in Sindh, hence are transported to other parts of the country and the world first. Sindh produces some of the highly demanded varieties including Sindhri, Saroli, Dasehra and Sunehra. Punjab follows with its own celebrated harvest, anchored by the varieties that have made Pakistani mangoes famous across the world.

The Varieties: A Cast of Characters

Pakistan cultivates nearly 400 varieties of mangoes. While this number is lower than India's 1,200 varieties, Pakistan's mangoes are renowned for their unparalleled sweetness and taste a unique flavor profile that gives Pakistan a competitive edge in the global market. Among this abundance, a handful of varieties have achieved the status of legends.

Sindhri is where the season begins. Large, golden and fragrant with a smooth texture, it is often described as the Pakistani Queen of Mangoes and is typically the first variety to arrive in May. Its flesh is fiber-free, intensely aromatic and sweet without being cloying the fruit of choice for those who like their mango experience clean and uncomplicated.

Chaunsa is the undisputed star of the Pakistani mango calendar. Small to medium in size but explosively sweet, juicy and aromatic, Chaunsa comes in several types including white, black and sweet varieties and usually peaks in July and August. When you scoop out a slice, it melts in the mouth like custard sweet but not cloying, smooth but with character. It is Chaunsa that Pakistani families abroad wait for most anxiously, and it is Chaunsa that has made the country's reputation in the international mango trade.

Anwar Ratol is the connoisseur's choice. Small enough to fit in a palm, its intensity of flavor is disproportionate to its modest size. One ripe Anwar Ratol can perfume an entire room. It is eaten quickly, reverently and in quantity, and its brief window of availability each season is mourned genuinely when it passes.

Langra offers something different green-skinned even when ripe, with a unique tangy-sweet balance that makes it a cult favourite with strong character. Dussehri is smooth and delicately sweet, beloved across generations. Shan-e-Khuda, whose name translates as Glory of God, is among the largest varieties with a bold and assertive flavor that justifies its name.

Each variety has its loyal following, its regional champions and its preferred method of consumption. Arguments about which mango is finest are among the most spirited and genuinely unresolvable debates in Pakistani domestic life.

The Season: A Shared National Experience

The mango season in Pakistan is not simply an agricultural event. It is a cultural rhythm. Pakistani mangoes mark the rhythm of summer,

bring families together and carry the scent of home across continents. The season runs from May through September, with different varieties ripening in succession so that the pleasure stretches across months rather than weeks.

Families and relatives come together to enjoy the fruit's soft, sweet flesh. Mango also indicates affection and goodwill in the tradition of giving, adding sweetness to bonds and celebrations when exchanged among people. The gifting of a crate of mangoes is among the most warmly received gestures in Pakistani social life a box of Chaunsa arriving at a door in July carries more genuine warmth than most formal presents.

In Punjab and Sindh, mangoes are featured in numerous dishes and beverages. They are chopped into desserts and salads, blended into milkshakes and mango lassis and used to prepare spicy pickles. The green, unripe mango is as valued as the ripe one transformed into the sharp, spiced achar that accompanies meals across the country throughout the year long after the fresh season has ended. Aam panna, a cooling drink of raw mango, is a summer staple in homes where the heat of May and June demands relief. Mango kheer, mango kulfi, mango halwa the fruit's culinary range across Pakistani kitchens is inexhaustible.

Mango Diplomacy: Sweetness as a Foreign Policy Tool

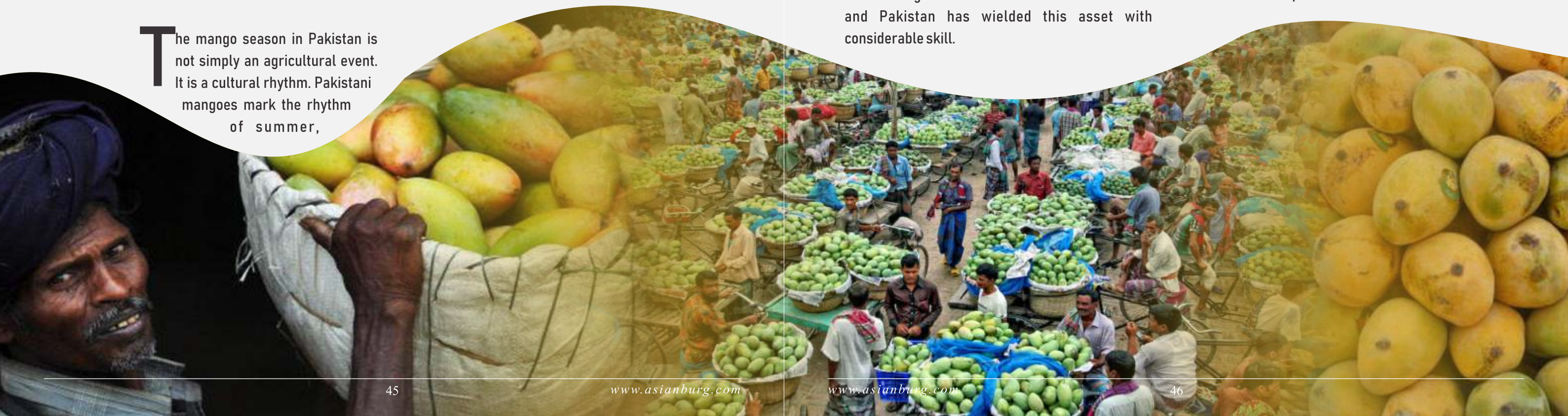
In Pakistan, mango is not only a national fruit but a part of the culture and an important diplomatic emissary, often used for social networking and bonding. This tradition stretches back to the Mughals and has continued without interruption into the present day. Pakistani heads of state and ambassadors have long used the mango as a gift of singular cultural weight one that communicates warmth, pride and generosity in a way that no formal diplomatic exchange can replicate.

In a recent act of mango diplomacy, Pakistani ambassadors presented mangoes to United States lawmakers, eliciting the response, "Never thought diplomacy could be so sweet." This gesture highlights how mangoes continue to foster bilateral relations, serving as a delicious symbol of goodwill and cultural exchange. The mango is perhaps the only agricultural product in the world that has a genuine role in international relations and Pakistan has wielded this asset with considerable skill.

The Economics of the King

Beyond culture and cuisine, the mango is a serious economic asset. Pakistan exports seven to ten percent of its total mango production, valued at approximately twenty million US dollars per year. Each summer, millions of crates leave the fertile plains of Punjab and Sindh, destined for families abroad eagerly waiting to break open their first box of the season reaching dining tables in London, Dubai and New York.

The potential for this figure to grow significantly is widely recognized. Pakistan's mangoes command premium prices in Gulf markets, the United Kingdom and across the Pakistani diaspora worldwide precisely because their quality is genuinely difficult to replicate elsewhere. Pakistan's young population, familiar with digital technology, can play a pivotal role in revolutionizing the marketing and export of mangoes. Initiatives such as mango festivals could serve as platforms to connect industrialists, mango growers and youth while celebrating the cultural significance of mangoes and highlighting their economic potential.



The challenges are equally real. Mealybug is the most destructive pest of mango in Pakistan. Fungal diseases including malformation, quick decline and anthracnose threaten orchards across the producing regions. Water management remains critical the fruit requires consistent irrigation across a long growing season in areas where water availability is increasingly uncertain. Post-harvest losses due to inadequate cold storage and logistics infrastructure continue to reduce the value that reaches farmers and exporters alike.



More Than a Fruit

There is a phrase that recurs, unprompted, in almost every account of what Pakistani mangoes mean to the people who grow up with them. They say it is not just a fruit. It is an emotion. A memory. A season. A homecoming.

The mango's enduring presence underscores Pakistan's resilience and cultural vibrancy, making it an emblem of national pride for

generations. In a country of extraordinary diversity of language, province, ethnicity and tradition the mango is one of the few things that belongs to everyone equally. The farmer in Multan who tends the orchard, the child in Lahore who races to the kitchen when the crate arrives, the family in Birmingham who orders a box online and waits at the door they are all held together by the same fruit, the same fragrance, the same season.

Mango: Nature's Nutritional Treasure

Few fruits can rival the mango when it comes to sheer nutritional generosity. A single cup delivers a meaningful dose of vitamin C, vitamin A, B-complex vitamins and vitamin E, alongside dietary fiber, potassium and magnesium. These nutrients collectively support immunity, skin health, heart function and energy metabolism. The polyphenols and beta-carotene present in mango add another layer of benefit, working steadily against oxidative stress and inflammation. It is, in every sense, a fruit that earns its royal title.

Mango and Diabetes: Enjoy It Wisely

Diabetic patients do not need to banish mango from their lives entirely. They simply need to be smart about it. Mango carries a moderate glycemic index of around 51, and when eaten in small portions alongside protein or healthy fat, the blood sugar impact remains manageable. A few slices with a meal is very different from a large bowl eaten alone. What should genuinely be avoided is mango juice, which strips away the fiber and delivers concentrated sugar directly into the bloodstream. Whole fruit, small portions and mindful timing are the guiding principles here.



Kachi Lassi: A Traditional Drink Worth Keeping

Plain, unsweetened kachi lassi is one of the most sensible choices a diabetic patient in Punjab can make during the summer heat. Made from fresh dahi or milk, it provides protein, calcium and gut-friendly probiotics without placing any real burden on blood glucose. The protein and fat it contains actually slow digestion, smoothing out any sugar response naturally. The one condition is that it must remain unsweetened and free of mango pulp or flavored additions. In that pure, traditional form, kachi lassi is not just culturally comforting but nutritionally sound as well.



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The Dilemma of Food Waste:

Challenges and Policy Pathways

Each year, as the world marks the International Day of Zero Waste on March 30, it is worth confronting an uncomfortable truth: vast quantities of food are lost from farm to fork, with Pakistan alone wasting nearly 40% of what it produces. This food loss represents deeper inefficiencies immersed within modern food systems. At a time when millions continue to face food insecurity, the persistence of such large-scale waste highlights a critical disconnect between production, distribution and access. Addressing this gap requires moving beyond viewing food waste as an isolated issue, and recognising it as a systematic challenge with significant policy implications.



Understanding Food Systems and the Value Chain

According to the Food Waste Index Report (2024), 1.05 billion tonnes of food is wasted per year globally. This is roughly equivalent to 1 billion cooked meals wasted daily. The food supply chain is a complex process, encompassing activities from food production to consumption. This constitutes farming and harvesting, processing and packaging, distribution and transport to markets, retail and food services, and household consumption. Throughout the entire chain, food is being wasted at various points. For example, unharvested crops or overproduction due to less demand and larger supply leads to food loss during production. Low quality and damaged food products are wasted during processing for distribution. Most of the food loss occurs in the retail and food business sectors due to overstocking, product defects, large portion sizes and poor inventory management. Lastly, overbuying and extra cooking leads to food waste at household levels.

Food Waste: Nature and Causes

Globally, food loss and wastage exist across all income levels. Therefore, it is often not a rational failure, but a behavioural one, driven by how people make decisions under bias, habit and imperfect information. At the production level, farmers fear selling early at a lower price, therefore they hoard the crop for a better price, even at the risk of spoilage. Similarly, at the consumption level, people overestimate how much they will cook or eat. In restaurants, large portion sizes lead to extra edible food being wasted. As a result, food waste is a behavioural outcome shaped by everyday decisions, habits and social norms, which is why it persists across both rich and poor contexts.

Scale of the Problem: Global and Local

The cost of food waste across the global supply chain is expected to increase to \$540 billion by the end of this year. This has a drastic effect on the environment, because food loss generates 8-10% of global greenhouse gases every year. This means that if the entirety of food waste was a country, it would be the third-largest producer of carbon dioxide after the United States and China. These figures make it clear that food waste is not merely a logistical concern, but a critical policy challenge with far-reaching environmental and economic consequences.

In Pakistan, food waste is both an economic issue, as well as a moral issue. Around 30 million tonnes of food is wasted in Pakistan annually, which is equal to 40% of the total production. Majority of the losses occur before the food even reaches consumers. This is due to hoarding on part of the farmers due to price instability in the agriculture sector, lack of cold chain infrastructure, poor post-harvest handling and limited production capacity. At the consumption level, large quantities of food are wasted at events such as weddings and funerals.



Food Waste and Food Insecurity:

A Critical Paradox

Pakistan's problem of food waste is in direct contrast to the challenge of food insecurity. According to the World Food Program, more than 20% of the total population in Pakistan suffers from undernourishment. Additionally, nearly 45% of children under 5 years old in the country experience stunting due to chronic malnutrition. At the global level, 43 million children are facing severe hunger according to WFP. At present, famine has been declared in six countries – Palestine, Sudan, South Sudan, Mali, Haiti and Yemen. Bridging this gap between surplus production and food scarcity is critical for tackling hunger in the world.



Current Responses: Global and Local Efforts

Because the phenomenon of food waste is a global supply chain failure, policy-level interventions must move beyond isolated fixes and instead adopt a system-wide approach that addresses inefficiencies across production, distribution, storage and consumption. The Sustainable Development Goal (SDG) 12 focuses on responsible consumption and production. In particular, SDG 12.3 aims to halve per capital global food waste at retail and consumer levels along the supply chain by 2030. This can only be achieved if food waste is treated as a global climate, food security and economic priority. In Pakistan, many organisations are working to curb food loss and waste. For example, Rizq has saved more than 4 million kgs of food in a decade, equivalent to more than PKR 100 million. Similarly, Robin Hood Army has saved over 183,315,467 surplus meals and distributed them across needy people. Through redirected lost food towards the needy, these organisations enable businesses to unlock their economic, environmental and social value of their unsellable surplus food through resale and redistribution.

Additionally, through the efforts of Rizq, the Punjab Food Authority added a clause in the Disposal of Excess Food Regulation 2019, establishing Punjab's first formal regulatory framework to manage food waste through structured redistribution. Through sustained advocacy and technical input, Rizq played a central role in shaping a mechanism that redirects surplus food from restaurants and hotels to underserved communities in a safe and dignified manner. The regulation outlines clear operational procedures for the collection, handling and distribution of excess food, while mandating strict compliance with food safety standards under PFA oversight. Drawing on these experiences, national-level policies can be designed to curb food waste.

Policy-Level Interventions

In Pakistan, the first priority is investment in post-harvest infrastructure: better on-farm handling, reliable storage, solar-powered modular cold rooms, refrigerated transport, hermetic grain storage and expanded local processing capacity so perishable produce is preserved, moved safely and converted into higher-value products instead of rotting before sale. At the same time, Pakistan needs stronger market systems, including real-time price and demand information, revitalised agricultural extension services, farmer training in grading, packing and temperature control and a national grading and certification regime that rewards quality and reduces rejection and spoilage. Cities and local governments should be brought to the centre of implementation through source segregation of organic waste, food waste reduction plans tied to climate and waste strategies, stronger procurement and planning in schools and hospitals and community-level composting and biogas systems so unavoidable organic waste is diverted from landfill and methane emissions are reduced. Edible surplus should be systematically recovered through formal partnerships between food businesses, event venues, markets, charities and local administrations, building on models like Punjab's excess food regulation and redistribution mechanisms. Nationally, Pakistan should develop a thorough food loss and waste baseline aligned with the Food Waste Index, disaggregating waste across households, retail and food service, and where possible into edible and inedible fractions, so policy is evidence-based and progress can be credibly tracked. Finally, the sources consistently stress that implementation will require public-private partnerships, concessional finance, tax and credit support for cold-chain and processing infrastructure, technology transfer for smart storage and digital tracking tools and coordination across agriculture, climate, waste, trade and social protection policy.

Way Forward: The Pakistani Case

Ultimately, reducing food loss and waste is not just about saving food, but about building a more efficient, equitable and climate-resilient food system that Pakistan can no longer afford to ignore. In essence, the most effective response to the problem of food waste and food insecurity would be one that combines prevention, redistribution, recycling and measurement into a single national framework that cuts waste, lowers emissions, stabilises food supply and improves access for vulnerable communities.



From Awareness to Acceptance Rethinking Autism in **Today's World**

Every year on April 2, observed globally as World Autism Awareness Day, the world pauses if only briefly to acknowledge autism. Buildings glow blue, timelines fill with supportive messages and awareness takes center stage. Yet beyond this symbolism lies a more important conversation understanding what autism truly is and why awareness alone is not enough.

Autism is not a single, uniform condition but a spectrum, often misunderstood as a scale from “mild” to “severe.” In reality, it reflects a wide diversity of experiences where each individual has unique strengths, challenges and ways of communicating and interacting with the world.

This shift in understanding calls for a move from awareness to acceptance. Acceptance means rethinking how schools, workplaces and communities function to include different ways of thinking and behaving. It involves practical changes such as flexible communication methods, sensory-friendly spaces and inclusive attitudes. These are not acts of charity but necessary steps toward equity and genuine inclusion.

Together for Health Stand with Science

Each year on April 7, observed globally as World Health Day, the World Health Organization (WHO) reminds the global community that health is more than the absence of disease it is a state of complete physical, mental and social well-being. While global campaigns and health days bring attention to critical issues, they also reveal a deeper reality access to quality healthcare remains unequal. In many parts of the world, preventable diseases, limited medical resources and lack of awareness continue to affect millions, highlighting the gap between global health goals and lived experiences.

Addressing this gap requires more than awareness it demands collective action and inclusive systems. Strengthening healthcare infrastructure, promoting preventive care and ensuring equitable access to services are essential steps toward healthier societies. True progress lies in building systems that reach everyone, regardless of geography or income and in recognizing health as a fundamental human right, not a privilege.

Recipe of the Month

Healthy Mango Oat Milk Pudding

Calories

Per serving: 180 to 200 kcal

Ingredients (4 servings)

Low-fat milk	3 cups
Rolled oats	4 tablespoons
Fresh mango puree (no added sugar)	1 cup
Chia seeds	1 tablespoon
Almonds sliced	1 tablespoon
Cardamom powder	½ teaspoon
Honey	1 teaspoon (optional)
Ghee or olive oil	½ teaspoon



Method

- Heat ghee or oil in a pan.
- Lightly toast oats until aromatic.
- Add milk and cook on low flame for 8–10 minutes.
- Add mango puree and mix well.
- Add chia seeds, cardamom and almonds.
- Simmer for 3–5 minutes until slightly thick.
- Add honey if needed. Serve warm or chilled.

Health Benefits

- Mango provides vitamin C and antioxidants.
- Oats support heart health and digestion with soluble fiber.
- Chia seeds add omega-3 fatty acids and improve satiety.
- Naturally sweetened with minimal added sugar.
- Light and refreshing for summer or after fasting.

Mango Chia Kheer

Calories

Per serving: 150 to 170 kcal

Ingredients (4 servings)

Low-fat milk	3 cups
Fresh mango puree (controlled portion)	¾ cup
Chia seeds	2 tablespoons
Stevia or monk fruit sweetener (as needed)	
Almonds sliced	1 tablespoon
Pistachios chopped	1 tablespoon
Cardamom powder	½ teaspoon
Flaxseeds powder	1 teaspoon

Method

- Heat milk on low flame for 8–10 minutes.
- Add chia seeds and cook until slightly thick.
- Let it cool slightly.
- Add mango puree and cardamom.
- Add sweetener if needed.
- Mix in nuts and flaxseed powder.
- Serve chilled.

Health Benefits

- Lower glycemic load due to reduced mango quantity.
- No added sugar suitable for blood sugar control.
- Chia and flaxseeds help slow glucose absorption.
- Rich in fiber and healthy fats.
- Heart-friendly and digestion supportive.



Disclaimer

This publication is an independent public guide prepared for community awareness. Asian Burg Magazine shall not be responsible for any inconvenience/ misunderstanding arising directly or indirectly from the use of information contained in this publication. All content is published in good faith and with respect for cultural, religious and ethical values.

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Since 1987
Taste of Pakistan

SHARING SWEET MOMENTS
WITH EVERYONE



LAYERS

About us



Like a fantasy that feels unreal, every delicacy by 'Layers' holds a charm that enchants with every bite, allowing one to be swept into a moment of bliss, making all your dessert dreams come true!

Founded in **Lahore** in **2020**, the philosophy of Layers Bakeshop was simple; to create connections through desserts while striking the ideal balance between flavor and feeling.

Since the beginning, Layers has secured an irreplaceable spot **in the hearts of people**.

No of branches: **46**

Recent launches

Lemon cheesecake

St. Sebastian cake



Key Messages



Unicef

UNICEF continues to play a vital role in improving the lives of children worldwide by ensuring access to education, healthcare, nutrition and protection. Its global efforts in emergencies and development work have made a lasting impact on child welfare and rights.



Sundas Foundation

A Lifeline of Hope for Patients with Blood Disorders in Pakistan

Sundas Foundation actively contributes to social welfare by supporting education, health services and community development programs. Its initiatives aim to empower individuals and improve quality of life for vulnerable groups in society.



Allah Waly Foundation (AWF)

Allah Waly Trust is dedicated to serving humanity through welfare initiatives that support underprivileged communities. Its work in providing food, healthcare and social assistance reflects a strong commitment to compassion and humanitarian service.



Sustainable Development Goals

Food security (SDG 2) aims to end hunger and ensure everyone has enough nutritious food. Reducing food wastage (SDG 12) helps save resources and improve access to food for all.



For More Information:

☎ 0321-1117658

Key Insights from Our Previous Edition

In our previous edition, we took a closer look at the hidden forces shaping modern health and lifestyle uncovering how everyday choices and food systems directly influence our long-term well-being. From nutrient deficiencies that often go unnoticed to the growing dominance of fast food culture and ultra-processed diets, we highlighted the silent but serious challenges affecting public health today. We also shed light on critical food safety concerns such as milk adulteration and pesticide residues, which continue to pose risks in our daily lives.

Alongside these challenges, we explored hopeful and practical pathways toward better living. The Japanese lifestyle offered valuable lessons in longevity and discipline, while yoga stood out as a powerful preventive healthcare

practice supporting physical strength, hormonal balance and mental clarity. We also discussed simple yet meaningful changes, such as healthier hydration habits and the importance of sustainable agriculture in Pakistan reminding us that both individual awareness and collective action are essential for a healthier future.

As we move forward, these insights serve as a foundation encouraging us to rethink our choices, embrace healthier practices and build a more informed and resilient society.



Community Feedback

“

Asian Burg presents a highly engaging and thoughtfully curated magazine that successfully captures the reader's attention from start to finish. Its content feels relevant, well-researched and impactful for today's audience.

”

Shahid Lone
Chairman Allah Waly
Foundation

“

Asian Burg reflects a strong editorial vision, combining awareness, education and practicality in a balanced manner. It feels like a publication that truly cares about informing and improving society.

”

Saaleha Ahmad
Consultant Unicef

“

The magazine stands out for its clarity and depth. Asian Burg manages to present complex issues in a simple yet powerful way making it both informative and easy to understand for readers of all backgrounds.

”

Rafia Batool
Consultant PFA

“

Asian Burg is a well-structured and meaningful magazine that leaves a lasting impression. It successfully delivers value through thoughtful content and a professional presentation style.

”

P J Mir
Political Analyst/Former
Professional Cricketer

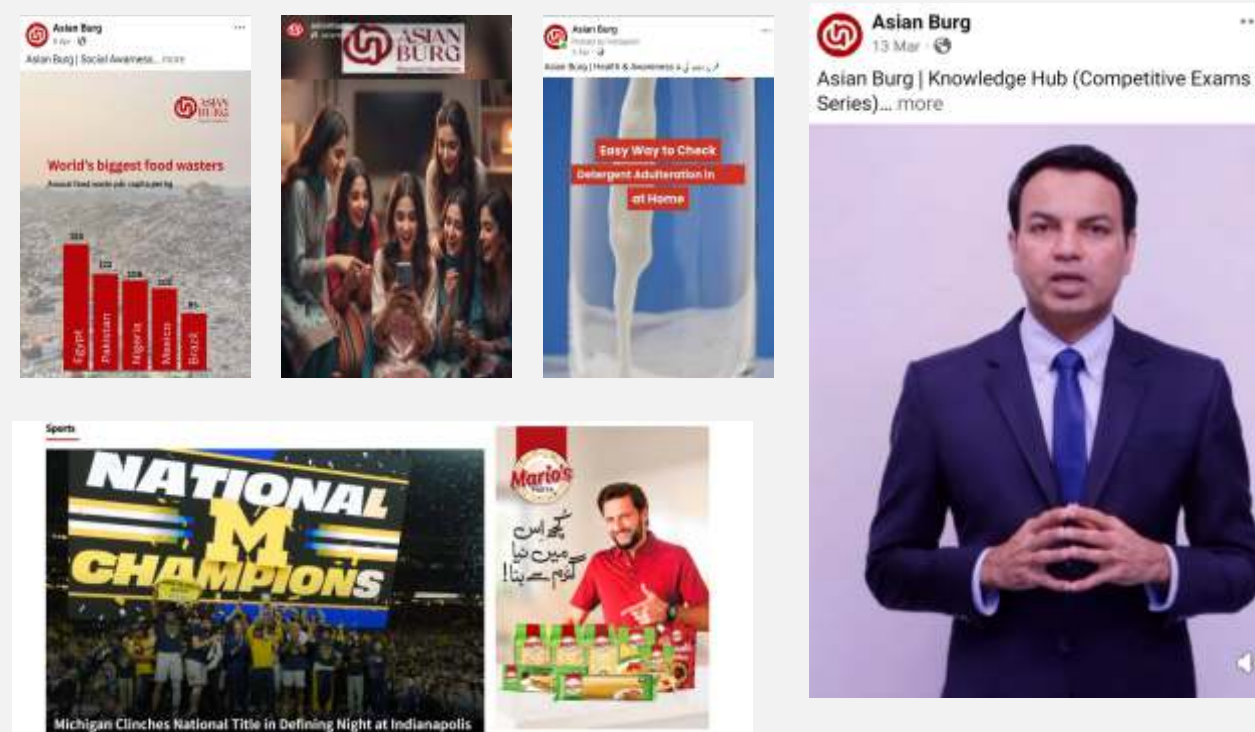
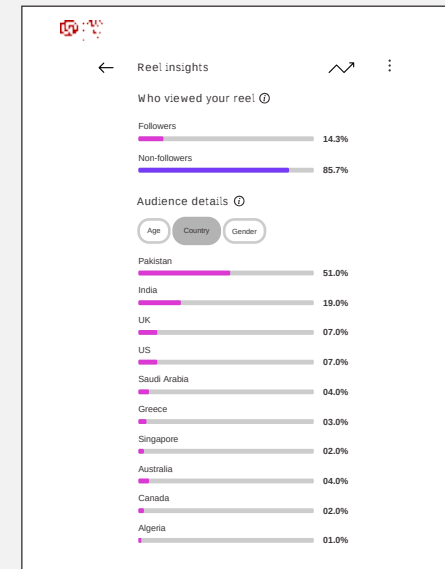
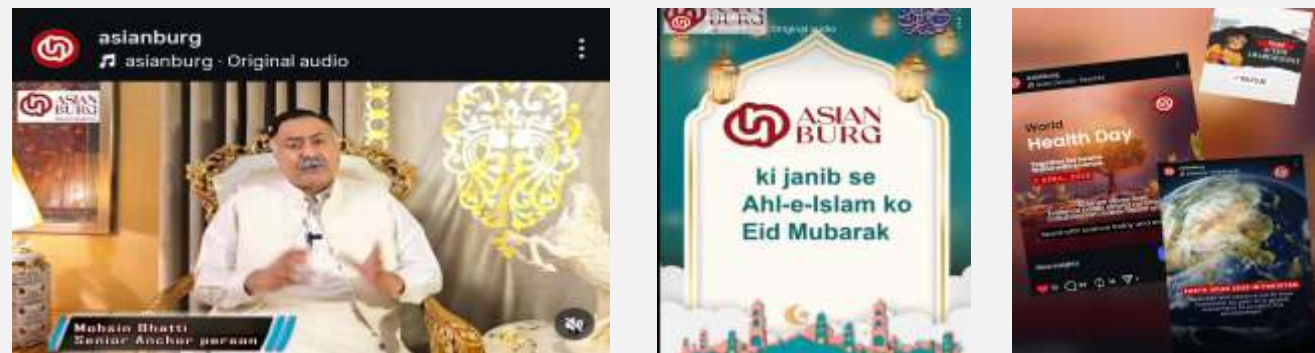
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I really appreciate the way Asian burg highlights food safety issues like milk adulteration and pesticide residues. These are real concerns in our society and it's important to bring awareness in such a clear way.

”

Jaweria Nazeer
Nutritionist/ Dietitian

Impact Snapshot





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