



## COVER STORY

Page 1

Many families view girls with disabilities as a curse and a burden — Anbreen Ajaib

## 83 per cent

of female children with disabilities in Pakistan are out of school

## ENVIRONMENT

Page 4

We should not shy away from using the word genocide — Dr Patrick Bigger

## TRAVEL

Page 8

Plan ahead, research your destination thoroughly and prioritise safety — Asif Ashoor

# DAUGHTERS OF A LESSER EVE?

For girls with disabilities, battling societal prejudice, the unavailability of hygiene and safety arrangements at schools prevents many from reaching their true academic potential

By Muhammad Ilyas, Mahnoor Tahir Ali, Safdar Rizvi & Wisal Yousafzai

“Educated women raise educated families.” In Pakistan, the pervasive nature of such regressive beliefs reduces girls’ education to an optional inconvenience borne by their parents until they possess the bare minimum academic skills necessary to qualify for marriage and help their own children with their homework.

Under this absurd logic, educating a daughter is only valued as long as she has marriage and motherhood on the cards in the near future. Therefore, when societal stigmas and reproductive myths surrounding disability diminish the marriage prospects for girls with special mobility needs, many young women on wheelchairs are doomed to spend the rest of their lives in illiteracy.

Where female literacy in the country remains low regardless of ability, data obtained from the report titled “The Missing Third of Pakistan” published by the Pak Alliance for Maths and Science (PAMS) indicates that nearly 83 per cent of female children with disability are out of school. Conversely, only 17 per cent of girls with disabilities are in school, which is roughly three quarters of the national literacy rate among girls above the age of 15.

Where stereotypes surrounding both girls’ education and disability can partly explain the abysmal trend, the failure of the government to cater to the special infrastructural, mobility, transport, hygiene and safety needs of female children with physical disabilities has only heightened their academic exclusion, relegating them to a life of socio-economic deprivation and isolation.

“Although some efforts have been made by the state, such as the opening of special education schools at the district level, they are more or less insufficient. The teachers lack training in special education while the schools are generally inaccessible, especially when it comes to toilets. Either there are no policies ensuring education to differently-abled girls, or the existing ones are not being implemented,” opined Anbreen Ajaib, an Islamabad-based women’s rights activist.

#### Inadequate data, facilities and infrastructure

The first step towards improving literacy among differently-abled female children would involve identifying the exact number of girls with disabilities that are out of school, which unfortunately, no state organization across the country has been able to gather till date.

“UN statistics show that approximately 15 per cent of Pakistan’s population consists of individuals with disabilities. However, we have no accurate data on the

“Teachers are not trained on the educational needs of students with disabilities, while educational materials are seldom available in alternative formats

number of out-of-school children with disabilities,’ confessed Farman Ali, Deputy Director of the Department of Empowerment of Persons with Disabilities, Karachi region. Going by the estimates obtained by the Dawah Academy for Special Children, almost 90 per cent of children with physical disabilities are out of school, primarily due to the scarcity of special education schools in Sindh, which are catering to only 4,500 differently-abled students.

Sources claim that out of 66 educational institutions established in Sindh by the Department of Empowerment of Persons with Disabilities, most do not offer education beyond matriculation.

According to data, only eight educational institutions are registered for students with disabilities in Karachi, where just 40 female students appeared for the matriculation exams in 2023 followed by 64 in 2024. The ratio of female students dropped further for the intermediate level, where from across six registered colleges, only 27 girls took the exam in 2023 while 33 appeared for the exam in 2024.

In Punjab, data obtained from the Department of Special Education, revealed that out of a total of 3000 differently-abled children studying at special schools, only 839 were girls. Unsurprisingly, the department too had no data on the number of out of school girls with disabilities.

According to the spokesperson, currently 303 institutions have been established by the Special Education Institute. At present, the on-ground reality is that there are only three functional institutions for disabled children at the middle level with two at the high school level. Apart from these, there are no public institutions to provide basic education to differently-abled children.

Miles up north in Khyber-Pakhtunkhwa and its merged areas, data from the Social Welfare Department K-P revealed that only 364 girls with physical disabilities were enrolled across schools in the province.

Imran Takkar, a children’s rights activist from Peshawar, confirmed that the scarcity of trained teachers, accessible learning materials, and basic facilities had complicated education for girls living with disabilities. “Those in the rural and remote areas are particularly disadvantaged since travelling to far-off specialized institutions can be both financially and physically challenging for families,” said Takkar.

Concurring with Takkar, Farida Shaheed, the United Nations Special Rapporteur on the right to education, also believed that government schools were not equipped with the teachers and materials necessary for facilitating students with disabilities. “Teachers are not trained on the educational needs of students with disabilities, while educational materials are seldom available in alternative formats, such as Braille, large print, accessible multimedia, Easy Read, plain language, or sign language,” regretted Shaheed.

#### The intersection of gender and ability

The concept of intersectionality predicts that the secondary status of a subordinated individual or community is magnified when they happen to be situated at the intersection of two or more marginalized identities. For instance, a differently-abled girl will be dually targeted by both ableism and chauvinism, ending up with a lower societal status and lesser educational opportunities than those afforded to a differently-abled boy or an able-bodied girl.

According to Anbreen Ajaib, Executive Director at Bedari, an NGO working on women empowerment, gender stereotypes and societal attitudes significantly contributed to the exclusion of girls with disabilities from education. “Generally, girls are discouraged from pursuing education beyond the primary level, and for those with disabilities, the barriers are even greater. Many families view girls with disabilities as a “curse” or “burden” and see education as irrelevant to their lives, often believing it won’t change their future prospects. This perspective leads to these girls being deprived not only of education but also of social value, with their aspirations and potential ignored,” observed Ajaib.

Agreeing with Ajaib, Qari Saad Noor, a disability rights activist from K-P, also felt that societal taboos surrounding disability prevented parents from educating their differently-abled daughters. “While some destitute parents are forced to leave their daughters on the roads to beg, those from well-off households keep them locked up in their homes out of shame,” revealed Noor.

Sharing her views on the matter, Shaheed, who is also

a feminist human rights activist highlighted the fact that numerous challenges hindered the education of girls with disabilities, starting with the compounding of a general view in our cultural normative framework that girls did not require education. “This belief is intensified when it comes to girls with disabilities since many a times their families are just too ashamed,” claimed Shaheed, who further revealed that during a research she conducted during COVID-19, women living with disabilities underscored the need to educate their own families about their disability.

#### Feminine hygiene and WASH facilities

Given the countless stigmas surrounding menstruation, girls reaching menarche are often rushed through the critical transition into womanhood with minimal guidance and assistance from both mothers and teachers. Yet where able-bodied girls may eventually figure out the peculiarities of placing a sanitary napkin correctly, for those with physical disabilities, avoiding an embarrassing stain at school during that time of the month can become a challenge.

According to a report published by the UNICEF, girls with disabilities are often seen as asexual and are rarely given information on their reproductive health and managing their period independently. Furthermore, inaccessible water, sanitation and hygiene (WASH) facilities also act as a major barrier hindering girls with disabilities from attending school.

“Gender stereotypes label girls with disabilities as asexual, leaving them neglected and excluded from personal and educational growth,” noted Ajaib.

Speaking of the specific challenges faced by girl children with disabilities in managing menstrual hygiene at school, Ajaib highlighted the lack of accessible restrooms with WASH facilities.

“In Pakistan, girls with disabilities face severe barriers to education, including bullying and stigmatization, which discourages their attendance and hinders their learning. This is aggravated by the fact that menstrual hygiene facilities like toilets are often inaccessible, making it difficult for these girls to manage their hygiene needs with privacy and dignity,” said Ajaib.

“Since menstrual management is a taboo subject in Pakistan, schools may also be reluctant or refuse to provide personal assistance with toileting to menstruating girls with disabilities,” added Shaheed, Executive Director at Shirkat Gah, a gender justice organization.

CONTINUED ON PAGE 2





# A LEGAL MILESTONE, BUT NOT THE DESTINATION

While the newly promulgated Christian Marriage Act will help combat child marriages, there is also a need to go beyond it

By NABILA FEROZ BHATTI

“In Jahaz Ground, Sahiwal, a thirteen years old student of class seven, Samra eloped with her neighbour Kashif who was seventeen years old and 9th grade dropout. They approached the Catholic Church for their Nikah but the priest refused due to their age. However, they went to Pentecostal Pastor Akram who solemnized their Nikkah in June, saying this age is acceptable according to Christian personal law. Kashif does not hold the National Identity Card, however he is working as an office boy and earning 20,000 PKR per month which is far less than the minimum wage level. Samra is not going to school after her marriage,” told Ashiknaz Khokhar, a human rights activist from Sahiwal.

Ashiknaz further commented, “the Marriage Act 2024 in Pakistan aims to tackle the pressing issue of underage marriages, setting the minimum age for marriage at 18 years. This legislation seeks to protect the rights and well-being of minors, particularly girls, who are often forced into child marriages, depriving them of education and childhood. The act is a significant step towards curbing child marriage and promoting a safer, more equitable society for all.”

## Historical background

About a century and a half ago, the Church of England under British law introduced the Christian Marriage Act 1872 and the Christian Divorce Act 1869 in the Indian subcontinent. Even after Pakistan became a separate country in 1947, the same law was upheld in the homeland.

In 2011, the National Commission on the Status of Women, in consultation with Christian lawyers and willing religious leaders of Christian denominations, tried to amend the awful Christian Divorce Act 1869 by making clause-by-clause amend-

ments. Unfortunately, the proposal was rejected and could not be tabled in the National Assembly.

In 2019, under the leadership of Dr. Shireen Mazari the Ministry of Human Rights prepared the draft of the Christian Marriage and Divorce Act, 2019. Civil society organizations also welcomed it with a few recommendations. The Communities World Service (CWS), the National Lobbying Delegation (NLD) and the Center for Social Justice (CSJ) advocated to moderate public opinion on it. But the bill could not be passed due to opposition from the Catholic Church which objected on basis of the divorce section of the bill.

It is worth noting that when the Church of England changed its laws; marriage and divorce became the matter of civil law, so one wonders why in Pakistan these rotten laws persist.

## Christian Marriage (Amendment) Act, 2024

In 2022, then Senator, Kamran Michael; Member of National Assembly, Naveed Amir Jeeva and then Minority/Punjab Member National Commission for the Rights of Child, Dr. Rubina Feroze Bhatti put forward a one-point agenda to increase the age for marriage to 18 years and above. They devised a strategy to amend Section 60 of the Christian Marriage Act, 1872, which allowed marriage for girls at the age of thirteen and above and boys at the age of sixteen and above.

Many rounds of lobbying took place in both houses of Parliament. Civil society and religious leadership were consulted. A delegation of minority children was facilitated in meetings with the then Convenor of the Parliamentary Caucus on Child Rights, Mehnaz Akbar Aziz; Chairman Senate, Sadiq Sanjrani; Speaker National Assembly, Raja Parvez Ashraf; Governor Punjab, Balighur Rehman, where they pre-

sented the Charter of their rights. While presenting the Charter, the right to prohibit child marriage was on a priority.

Finally, on February 27, the Christian Marriage (Amendment) Act, 2024 was passed by the Senate which was spearheaded by then Senator Kamran Michael. On July 10, it was passed by the National Assembly under the lead of Naveed Amir Jeeva, and on July 23, the President of Pakistan, Mr. Asif Zardari, signed the Christian Marriage (Amendment) Act, 2024 in the presence of a delegation of children.

## International obligations

Pakistan has been a member of the International Convention on the Rights of the Child (CRC) since 1990, according to which people under the age of eighteen are children and cannot get married. Even if they give their consent that is not informed consent. Pakistan is a party to the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) which prohibits child marriages too.

Pakistan also pledged in the Sustainable Development Goals (SDGs) that by 2030, marriages under the age of 18 will be stopped in the country. Therefore, the state is obliged to review all the laws of the country in such a way that there is a legal prohibition of child marriages.

## Impact on children

The promulgation of the Christian Marriage (Amendment) Act, 2024 is a step forward to combat child marriages in Pakistan. With the passage of this act, Christian children will enjoy good health and well-being in line with SDG#3 of the Sustainable Development Goals. Child marriage, when children's bodies are not fully developed, is very harmful to their health. For this reason, young mothers are more prone to maternal complications and their newborns are also



more inclined to various mental and physical diseases.

The mental maturity of young married couples is not enough to handle the challenges of married life, so there is more probability of domestic violence. Christian children in Pakistan under the age of eighteen will not be victim of sexual abuse in the name of marriage. They will be able to enjoy their childhood. The passage of this law will enable Christian children to have access to education in line with SDG#4 and better economic opportunities to advance in life, thereby reducing poverty in view of SDG#1. When the age of marriage for a girl has been increased from thirteen to eighteen years and for a boy from sixteen to eighteen years, it has ended the discrimination among children on the basis of age. According to SDG#5 this is a step towards achieving gender equality.

## Further legislation

While the Christian Marriage (Amendment) Act, 2024 will have far-

reaching consequences on Pakistan's children, there is also a need to go beyond it. First of all, this law has been passed in the National Assembly, so its current jurisdiction is limited to Islamabad Capital Territory. All the Provincial Assemblies should immediately submit a resolution in their Assembly as per Article 144 of the Constitution of Pakistan and adopt it in their respective provinces. Minorities' Personal Laws override the related laws of the respective territories, provinces where the age of the girl child in the Child Marriage Restraint Act is sixteen years, will not be implemented to Christian girls.

Apart from this, there are many loopholes in the Christian Marriage Act 1872 which are similarly present in the Christian Marriage (Amendment) Act 2024 and need to be removed. For example, there is a need to remove the irregularities related to priests performing marriages. Nikah should be solemnized in the presence of eligible witnesses and there should be penalties and fine for violations. The condition

of solemnizing Nikah after sunrise and before sunset is unnecessary in these days. Marriage registration should be ensured in Union Council and NADRA easily and quickly. Marriage proceedings should be communicated to the bride and groom beforehand in their mother tongue. At the time of marriage, the mental illness or mental disorder of any party should be noted.

Furthermore, the Christian Divorce Act 1869 also needs to be reviewed for the betterment of the community and brought in line with the requirements of today's circumstances. Divorces are happening and these are happening on the false accusation of adultery. Sticking one's head in the sand is not a solution.

Nabila Feroze Bhatti is a human rights activist and columnist. She is Member Working Group at National Commission on the Rights of Child. She can be connected on X: @NabilaFBhatti

All facts and information are the sole responsibility of the author

CONTINUED FROM PAGE 1

## Risk of gender-based violence and transportation issues

In societies with a high incidence of violence against women (VAW), self-defence programs offer training on a variety of manoeuvres and moves which can help a girl or woman escape a dangerous encounter. However, no punch or kick can come in handy for a victim who is bound to a wheelchair.

According to UN Women, women with disabilities face similar forms of gender-based violence to women without disabilities, but at significantly higher rates, more frequently, over a longer period of time and at an increased risk of severe injury. Furthermore, according to the United Nations Population Fund (UNFPA) girls and young women with disabilities may face up to 10 times more violence than those without while the European Parliament found that women with disabilities were four times more likely than other women to suffer sexual violence.

“Girls with disabilities are vulnerable to harassment however, due to prevailing misconceptions, their reports are often not believed, leaving them unprotected and unsupported. Fearing harassment, families tend to keep these girls overly protected at home, which further isolates them. Ironically, this protection doesn't shield them from abuse, as some face harassment and violence from untrained caregivers,” highlighted Ajaib. Ajaib believed that instead of fostering empowerment, the prevalent approach towards girls with disabilities tends to rely on sympathy, offering little in terms of meaningful support. “While most districts have a single school dedicated to special education, these are often geared towards boys and are located far from girls' reach. The lack of accessible transportation further limits these girls' ability to attend school, leaving them excluded from the educational opportunities they deserve,” lamented Ajaib.

Expanding on Ajaib's analysis,



Shaheed, also felt that access to safe transport was a major obstacle facing all girl students especially those with disabilities who may need escorts or helpers to accompany them.

## Prioritizing education for girls with disabilities

The law of diminishing marginal utility governs that the value of a thousand-rupee bill depends on the socioeconomic status of the person receiving it. While an employee with a six-figure salary might barely notice the amount credited to their account, for a beggar on the road chasing odd coins throughout the day, a benefactor offering the same amount would signal a day of celebration. Thereby, investing in the education of girls with disabilities as a priority will yield much higher returns to schooling than those expected from the education of girl's without disabilities, uplifting the dually marginalized group both socially and economically in the coming future.

Ajaib believed that denying education to girls with disabilities was a violation of their fundamental rights and signaled a failure of the state to uphold its international commit-

ments to inclusive education.

“Education is essential for girls with disabilities to unlock their potential and our experience has shown that when given proper opportunities, girls with disabilities can achieve remarkable outcomes. Educating them enables self-sufficiency, helping them become independent, skilled contributors to their families and communities rather than a perceived “burden.” Furthermore, as they gain skills and enter the workforce, they strengthen the country's economy and set examples that challenge stereotypes. Failing to educate them, however, perpetuates a cycle of dependence, marginalization, and missed opportunities for societal growth and economic development,” urged Ajaib.

Expanding on the pitfalls of denying education to girls with disabilities, Professor Raheel Karim, former Head of the King Edward Medical College, revealed that neglecting the educational needs of children with disabilities can often lead to the development of mental health issues. “Despite possessing the same potential as other children, children with disabilities are discriminated against

by parents and society, discouraging their personal growth and preventing them from becoming productive citizens,” noted Karim, currently serving as a psychiatric consultant in the United Kingdom.

In light of the overall stigma associated with children with disabilities, Ajaib was of the opinion that in order to promote education, teachers required targeted training, not only in teaching methods for students with disabilities but also in fostering an inclusive and supportive environment. “This includes breaking down stigmas and ensuring all students understand and respect disability as part of human diversity. Furthermore, providing scholarships to girls with disabilities is essential to help them cover transportation costs, making regular attendance more feasible for families who might otherwise keep them at home,” she added.

Ajaib went on to highlight that addressing the intersection of gender and ability in the country's education system required a commitment to making all schools inclusive and accessible, a process, which in her opinion could start by adapting school infrastructures to support

physical disabilities. “Once schools are physically accessible, they should be progressively equipped to support other disabilities, including visual and hearing impairments, with specialized resources and assistive technologies,” implored Ajaib who also believed that with education, girls with disabilities could better manage personal hygiene and protect themselves against harassment, reducing their vulnerability.

## Role of parents, teachers, media, and the state

Battling illiteracy among girls with disabilities is impossible without the combined efforts of parents, teachers, the media, and the government, who all have an essential role in supporting the education of differently-abled girls, by creating and promoting a more inclusive environment.

Ajaib expressed her view that parents of differently-abled girls can play a pivotal role by actively advocating for their daughters' rights to education and pushing against societal stigmas that discourage them from attending school. By providing emotional support, encouraging independence, and seeking educational opportunities, parents can empower their daughters and instill confidence in their abilities.

“Secondly, teachers are crucial in creating an enabling environment within schools. With proper training in special education and inclusive teaching practices, teachers can provide tailored support to differently-abled girls, ensure their participation, and foster a positive classroom culture. Teachers can also raise awareness among other students, promoting empathy and understanding,” she claimed.

“Furthermore, the government has the responsibility to make inclusive education a priority. This includes implementing policies that make all schools accessible, providing specialized resources, and training teachers to meet diverse needs. The government should also moni-

tor policy implementation to ensure accessibility standards are met across schools,” suggested Ajaib.

Ajaib went on to highlight the media's ability to shift societal attitudes by raising awareness about the potential of differently-abled girls and the importance of their education. In her opinion, media campaigns can highlight success stories, break down misconceptions, and encourage families and communities to support these girls while simultaneously holding institutions accountable for providing inclusive education, sparking broader societal support for this cause.

“Another important stakeholder is civil society organizations. These organizations can play an effective role by acting as watchdogs, providing technical assistance to the government in developing and implementing policies, and raising awareness through community outreach programs. By introducing public-private partnerships, the government and civil society organizations can share resources and bridge gaps to ensure inclusive education for all,” noted Ajaib.

On a similar note, Farida Shaheed, who is also a sociologist proposed a comprehensive approach to tackling the discrimination facing girls with disabilities and promoting their education. “Orientation sessions must be organized for parents, siblings and other household members of girls with disabilities. Similarly, mass public awareness campaigns must be initiated through social media to promote acceptance of girls with disabilities. Furthermore, the government must support schemes for girls with disabilities so that families consider them as an asset and not a burden,” claimed Shaheed.

“By combining these efforts, Pakistan can ensure that differently-abled female children have the chance to thrive in school and to fulfill their potential in society,” concluded Ajaib, who is also an expert on social justice and human rights.





# BEYOND THE BOOM: PAKISTAN'S FOOD EXPORT CONUNDRUM

Although the country's food exports saw a historical high surge in 2023-24, longstanding issues put a question mark on whether that success can be sustained

By **IMDAD HUSSAIN**

Muhammad Arshad, a seasoned finance professional, barely had time to celebrate when his company received a multi-million-rupee order for meat exports – the biggest deal of his career. As the company's finance and operation manager, he was thrilled with the opportunity and quickly mobilised his staff. But what followed was a crash course in the harsh realities of Pakistan's export infrastructure.

Securing enough livestock to fulfill the order became a major challenge first; he had no option but to rely on traditional, often chaotic animal markets due to Pakistan's lack of organised farm-

structure, could really slow things down."

**The 2023-24 boom**

However, while the challenges faced by businesses might make someone think things are looking bleak, there is still a surprise in store – Pakistan's food exports are booming like never before. In 2023-24, Pakistan's food exports saw historical high surge, hitting a staggering \$8 billion, a massive 37 per cent increase over the previous year. Astonishingly, the country exported a whopping \$2.36 billion worth of food products in the first four months of this year by itself, according to Pakistan Bureau of Statistics (PBS). Rice alone brought

Food at the Trade Development Authority of Pakistan (TDAP). TDAP facilitated the participation of exporters in international exhibitions – last year, 164 exporters participated in 17 exhibitions in different parts of the world. It also facilitated visits of exporters to different parts of the world and created opportunities where buyers in large numbers could interact with Pakistani exporters.

Documents also reveal efforts of the TDAP and the government for product development through seminars and training in different parts of the country to meet criteria for exports. The TDAP senior official noted that some new countries for food export are being tar-



Detection of pesticide residues in Indian products were reported as Indian shipments did not comply with the maximum residue limits (MRLs) – the permissible thresholds for pesticides – set by the EU. India's shipments had a relatively higher non-compliance rate compared to that of Pakistan, two years back. In addition, the crisis in Ukraine also caused interruption in supplies from that region that created an opportunity for the surge in Pakistani agro-food exports. Internally, production in Pakistan this time was far better in rice and other products too.

The US Department of Agriculture (USDA) forecasted that Pakistan's milled rice production will increase 64 per cent to nine million metric tonnes (MT) in 2023-24. Fortunately, the actual production was slightly more than that estimate.

**Can the success be sustained?**

Yet, people who closely follow Pakistan's exports are skeptical about whether the country can sustain the recent growth. How Pakistan can reach its ambitious

director at SDPI, said that to improve food exports, Pakistan needs better arrangements for raw materials and value added products. "We don't have such arrangements here. Also, the government should allow agents and also focus on quality and quantity to meet international standards." Experts say it will take major effort to develop the infrastructure for food exports. According to them, this means Pakistan is far from reaching its full potential in food exports.

Some of the experts think that India's decision to remove cap on its rice exports could significantly reduce Pakistan's current exports. Karim Aziz Malik asked, "Can Pakistan sustain its \$4 billion in rice exports? We can not compete with India's non-basmati rice as it is \$100 per tonne cheaper than ours. Now they have decided to increase export of the rice. Is it difficult to predict as what effect it would have on our total rice export?"

According to him Pakistan cannot hope for the best until prices of electricity and fuel are reduced for consumers in the country,

are hindering its growth.

Pakistan has been a top rice exporter for decades but even its rice industry faces basic issues. This raises questions the state of other export sectors. Rice Exporters Association of Pakistan (REAP) Senior Vice Chairman Muhammad Jawed Jilani said they have recently discussed some issues with TDAP, whose officials vowed to address their difficulties.

In November a delegation from REAP, met with TDAP officials, raising concerns about export challenges, particularly related to storage, infrastructure, logistics and supply chain inefficiencies. The rice exporters also demand streamlining export processes and role of technology for competitiveness and enhancing quality. TDAP's DG Agro-Food, when asked about REAP's recommendations, said, "We are planning to involve all major stakeholders linked to logistic network for improving our valuechain".

However, experts agree that the problems REAP raised have been around for decades and should have should have been fixed a long time ago. They maintain that successful exports need an established industry and investor-friendly environment. The situation in the rice industry is a sign that other parts of the export sector could be in even worse shape.

An exporter on condition of anonymity, shared that besides other issues sometime operational efficiency also become a problem. "To reach the real potential in agro-food export, we need modern farming practices and digital tools besides addressing the basic issues in the sector", he said.

The concerned officials in the Ministry of Commerce were not available to comment on how the government plans to address the basic issues in food export. On future activities for promotion of Pakistani food products, TDAP's DG Agro-Food said his organisation intends to participate in 27 major food exhibitions to showcase Pakistani products.

*Imdad Hussain is a freelance journalist and contributor*

*All facts and information are the sole responsibility of the author*



ing infrastructure. While Arshad managed to gather the necessary animals despite the challenges, his problems, unfortunately, did not just end there.

"When we added up the actual costs of transportation and everything else, we realised that the profit would be much lower than expected," Arshad shared. "So we had to stop exports in January 2024."

in whopping \$4 billion in 2023-24.

The year's remarkable figures, driven by demand from diverse markets in Europe, China the Middle East and Africa, indicate a promising future for Pakistan's food exports. Particularly exciting to see are Pakistani sesame seeds gaining popularity in China and other parts of the world with the country's growing presence in the Middle East, Western Africa and Europe.



**Untapped potential**

Though the 2023-24 fiscal year saw Pakistan's meat exports to the Middle East soar as high as \$430.89 Million, the country has yet to harvest the sector's full potential. The exports to the region can amount to \$3 billion, according to the Dr M. Akram, the Husbandry Commissioner at the Ministry of Food Security. "They could be even higher, if issues of supply chain, farms, standards and others are addressed properly," he said.

The struggle Arshad's company faced is not isolated incident; it reflects a broader set of challenges that are hindering Pakistan's food export sector from reaching its real potential. Federation of Pakistan Chamber of Commerce and Industry (FPCCI) Chairman Karim Aziz Malik pointed out that several food exporters have had to cut back on exports lately. Rising business costs and other factors are hurting their profit margins, he explained. "The export businesses will struggle if the infrastructure doesn't improve. Unclear rules and regulations, along with poor infra-

Nevertheless, it is paradoxical that despite ongoing issues and some dissatisfaction among exporters, food exports reached a record high. Several key factors played a role in this unexpected success story, including strategic government initiatives and a favourable marketplace, though threats exist that could potentially disrupt the growth momentum and prevent the industry from reaching its potential if issues on the ground are not addressed timely.

According to one commerce ministry official, to boost the exports further, the National Logistic Cell has improved its network for accessing CARS and Russian market. "Agro products are reaching to CARS, Afghanistan and Russia through this improved network connection," he said. The government is also trying to explore a new trade route via Russia to Eastern European countries.

"[Besides other steps] we opted for effective marketing strategies to boost exports as well," said Athar Khokar, the Director General Agro-

geted after analysing their market needs. For example, Indonesia, Philippines, African Countries, EU, KSA, and Central Asia are being focused as destinations for rice, while fisheries exports are being made to China, Thailand, EU, US and UK, he said.

An official in the commerce ministry, on condition of anonymity, said special marketing initiatives were launched in China for sesame and the seed is now being exported to China, EU and South Korea.

**How the opportunity arose?**

With all those efforts, it is important to acknowledge the impact of international factors and growing conditions as well. First, India's decision to restrict some food exports to stabilise prices in their own country, along with their non-compliance with international standards and the restrictions imposed by EU on their some products, unintentionally created an opportunity for Pakistani food products like rice and onion to gain a larger share of the global market.

goal of \$25-30 billion in the next few years?

The answer is not simple as India has started improving things and decided to recapture the market by lifting limitations on its food exports. This year, rice shipments from Pakistan have triggered more alerts relating to the MRLs than those from India as well.

Dr. Abid Qaiyum Suleri, a researcher on food security and development and an executive

interest rate is brought down to single digit, and basic issues are addressed, including tax structure for exporters.

Analysts maintain that at the movement, Pakistan cannot ignore conditions imposed by IMF and decisions on issues like tax relaxation are unlikely. Moreover, the Pakistani export sector is facing long-standing challenges – such as effective supply chain, storage facilities, farming and technology and others – that

## Top Five Export Categories (USD Million)

HS Code	Product	2023-24	2024-25 (July-Nov)	Destinations
Grand Total		8,028.35	3,308.12	
10	Cereals (Rice, Maize)	4,308.10	1,613.76	Indonesia, Malaysia, Afghanistan, Kenya, Vietnam, United Arab Emirates, Saudi Arabia, Philippines, Senegal, United Kingdom
2	Meat	506.97	199.67	United Arab Emirates, Saudi Arabia, Kuwait, Qatar, Bahrain/ Kingdom Of Bahrain, Uzbekistan, Oman
12	Oil Seeds	488.26	285.1	China, United Arab Emirates, Korea (South), Kazakhstan, Saudi Arabia, Turkey, Vietnam, United States
22	Beverages, Spirits and Vinegars	448.23	112.81	Netherlands, Spain, Italy, Taiwan, Ghana, Korea (South), Tanzania, United Arab Emirates, Philippines
3	Fish & Crustaceans	406.04	161.11	China, Thailand, United Arab Emirates, Malaysia, Kuwait, Korea (South), Japan, Vietnam, Saudi Arabia





# GAZA’S ENVIRONMENTAL SCARS MAY NEVER FULLY HEAL

STORY BY : HAMMAD SARFRAZ

Rapidly escalating soil, water, and air pollution have pushed the enclave’s fragile ecosystems to the brink of irreversible damage

As Israeli airstrikes continue to devastate Gaza, claiming countless lives in an unrelenting conflict, a quieter but equally devastating crisis is unfolding — the environmental destruction left in its wake. Conservative estimates, based on satellite imagery comparing before-and-after conditions, suggest that the conflict, which began on October 7 last year, has left much of the enclave uninhabitable, with its scars likely to endure for years, long after the bombs have stopped falling.

Six months ago, a preliminary United Nations assessment raised the alarm over the environmental devastation caused by the ongoing war, a crisis largely overshadowed by the human toll. As the Israeli assault continues, entire areas of the Gaza Strip have been flattened, including homes, schools, hospitals, greenhouses, and what little remained of its already uneven skyline.

A recent New York Times analysis lays bare the staggering scale of destruction wrought by the conflict over the past 14 months. In just three months—between September and November—Israeli forces demolished at least 620 residential buildings and other structures. Videos of the demolitions, some captured by soldiers from the military’s 749th Combat Engineering Battalion, were later circulated on social media.

The impact of the bombing campaign extends far beyond physical destruction. In the first four months of the attacks, Israel dropped 70,000 tons of heavy munitions, including phosphorus bombs—devices banned under international law by the United Nations Convention on Certain Conventional Weapons (CCW), according to Gaza’s government.

A haunting photograph taken on October 9, 2023, and widely circulated in the media, clearly shows M825 and M825A1 artillery shells marked with the label D528. This code is used by the US Defense Department to identify “white phosphorus-based munitions.” The United Nations has long warned that incendiary weapons like white phosphorus cause

irreparable harm to both human life and the environment. Upon ignition, white phosphorus burns fiercely, a flame that cannot be extinguished as long as oxygen is present. It poisons everything it touches, remaining hidden in water for years, killing aquatic life and contaminating water sources that spread through the land, soil, and air. On the ground in Gaza, it destroyed everything, including plant life, further compounding the devastation of an already shattered strip of land.

In its June report, the UN’s environmental protection agency warned that Gaza’s ecosystems are teetering on the brink of irreversible damage. The collapse of water and sanitation systems, the destruction of vital infrastructure, and the devastation of coastal areas and natural habitats paint a grim picture of a region struggling not only to survive the violence but also to hold onto any semblance of hope for the future. Experts fear that these environmental losses will have a lasting impact on public health, food security, and Gaza’s ability to rebuild—threatening to trap its people in a cycle of suffering for generations to come.

“The devastation goes beyond what words can capture. In terms of non-carbon impacts, there’s nowhere to even start. The entire water and sewer system across Gaza has been destroyed,” said Dr. Patrick Bigger, Research Director at the Climate & Community Institute.

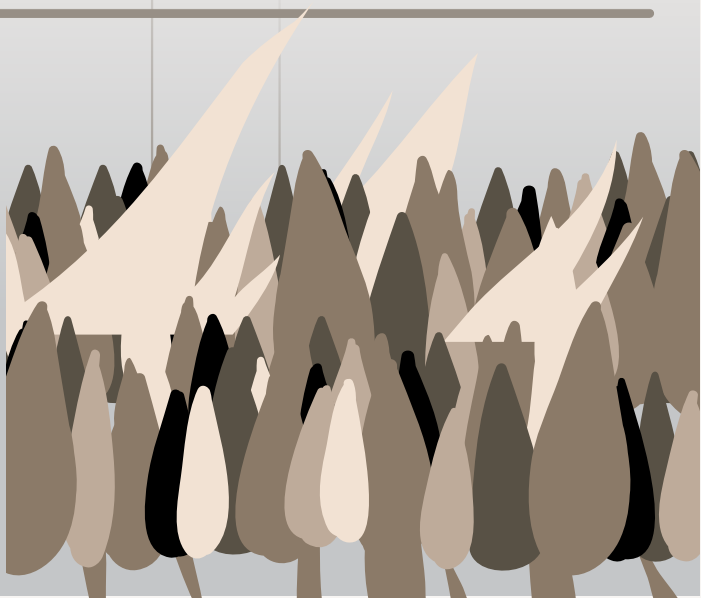
This dire reality underpins Bigger’s research, which, along with the work of his colleagues, formed the backbone of the State of Palestine’s recent appeal to the International Court of Justice. Their plea, grounded in both hard data and profound human tragedy, underscores how the impacts of war and environmental collapse are inseparable, leaving Gaza’s people fighting not just for survival but for the right to rebuild a livable future. Commenting on life in the enclave, Bigger cautioned that it would be extremely difficult—not just socially, but environmentally—for years to come.

Within a week of the Israeli operation in Gaza beginning, explosive and incendiary weapons, including white phosphorus, had burned 5km<sup>2</sup> of agricultural land in southern Lebanon. A year on, the burned areas exceeded 114 km<sup>2</sup>.

By September 2024, 67% of Gaza’s crop land had been damaged, according to UNOSAT and the FAO.

71.2% of orchards and other trees, 67.1% of field crops, and 58.5% of vegetable crops have been destroyed.

According to UNOSAT and the FAO, 1,188 agricultural wells (52.5%) and 577.9 hectares of greenhouses (44.3%) have been damaged.



Adding to the growing alarm, the Norwegian Refugee Council has issued a stark warning, revealing a new layer to Gaza’s already devastating crisis. Recent data from the Oslo-based humanitarian organization paints a harrowing picture -- aid entering the besieged enclave has drastically fallen, pushing the population closer to catastrophe. More than a million people are now at risk of starvation, while the entire population grapples with the dual scourges of hunger and disease. The council notes that a variety of illnesses are spreading unchecked, with a medical infrastructure that has effectively ceased to exist. In this vacuum, survival is becoming a near-impossible challenge for many.

For Dr. Bigger, the situation is unequivocal. “We should not shy away from using the word genocide,” he said. “Based on comments made by Israeli officials, this appears to be a clear and explicit program of ethnic cleansing and land grabbing.” The toll, he added, is staggering. “Human suffering is astonishing. That is absolutely the most important reason to demand an immediate ceasefire and an arms embargo on Israel,” he continued, emphasizing the urgent need for international action.

The crisis, he warned, is rippling out far beyond bombed-out buildings and displaced families. For the first time in decades, polio is re-emerging in Palestine—one of many grim consequences of what Bigger terms “the genocide” and its devastating effects. His institute has been at the forefront of documenting the environmental fallout from the war, underscoring the urgency of his plea for global intervention.

While Dr. Patrick Bigger refrained from using the

term ‘ecocide,’ which has been applied to describe the environmental devastation in Gaza, he did not hesitate to highlight the insufficient attention given to the environmental toll of the conflict.

### Debris and emissions

With much of the Gaza Strip now reduced to rubble by Israel’s relentless bombardment, estimating the full environmental toll of the debris scattered across the enclave will likely take years — that is, if independent experts are granted unfettered access.

According to the United Nations, by May 2024, the amount of debris in the enclave had already surpassed 39 million tons. This staggering figure is 13 times greater than the total debris produced by all conflicts in Gaza since 2008. For every square meter of Gaza, there are now more than 107 kilograms of debris, which could contain unexploded ordnance (UXO), hazardous materials, and even human remains. The scale of destruction is overwhelming – the current amount of debris is more than five times that generated by the 2017 ISIL conflict in Mosul, which amounted to 7.65 million tons, according to a 2018 UNEP report.



The real long-term climate or carbon consequences of the genocide will be felt in the rebuilding process.

Dr Patrick Bigger – Research Director at the Climate & Community Institute

By October 2024, 85% of Gaza’s water and sewage facilities were either fully or partially non-operational due to extensive damage to critical infrastructure, including wastewater treatment plants, desalination stations, pumping stations, wells, water tanks, and key pipelines.

The destruction has caused raw sewage to be discharged into the Mediterranean, exacerbating an escalating crisis of waterborne diseases, particularly among children.



## Carbon emissions generated by the Israel-Gaza war

Breakdown of carbon emissions generated by the first 60 days of the war, by usage



Source: A multitemporal snapshot of greenhouse gas emissions from the Israel-Gaza conflict. Note: emissions calculated by usage not manufacture, Benjamin Neimark, Partick Bigger et al.

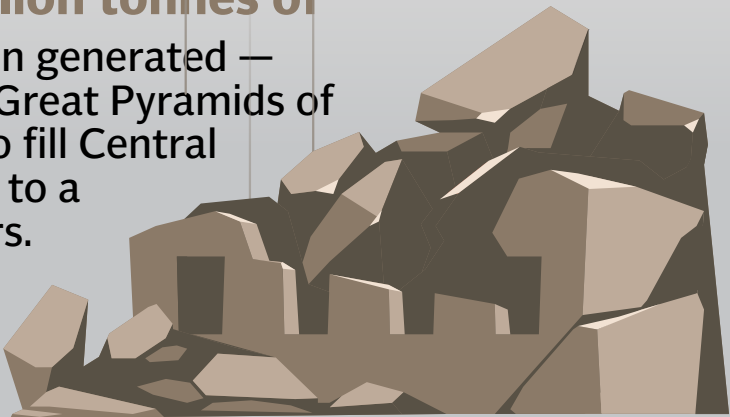




Processing the building debris alone will take decades, and one study suggests that up to **80,000 tonnes of CO2** will be emitted from processing only a portion of this debris.

Reconstruction efforts could significantly raise this estimate, potentially adding another **60 million tonnes of CO2**.

**Forty-two million tonnes of debris** have been generated — equivalent to 10 Great Pyramids of Giza or enough to fill Central Park in New York to a height of 8 meters.



To help conceptualize the scale, the UN noted that Gaza’s 39.2 million tons of debris would be equivalent to 10 Great Pyramids of Giza, or, just seven months ago, could have filled Central Park in New York to a height of 8 meters.

*Rule 45 of the International Committee of the Red Cross (ICRC) Customary International Humanitarian Law Study states that the use of methods or means of warfare intended, or expected, to cause widespread, long-term, and severe damage to the natural environment is prohibited. The destruction of the natural environment must not be used as a weapon.*

“These levels of destruction are unprecedented, making it difficult to draw direct comparisons with other conflicts, including in Ukraine,” said Bigger. One of the most overlooked tragedies, he noted, is the destruction of Gaza City’s infrastructure, including its rooftop solar systems, which boasted one of the highest concentrations in the world before October 2023.

“For all of its governance flaws, both in the West Bank and Gaza, decarbonization efforts were being taken seriously. Now, that progress is effectively erased, as critical energy infrastructure and farmland

are destroyed,” the California-based scholar said. “War is devastating for the environment, no matter where it occurs,” he added. Asked about reconstruction, Bigger pointed to the World Bank’s initial damage assessment, which indicated that rebuilding Gaza and Lebanon could take until 2040.

“The major carbon cost comes from the destruction of three- to eight-story concrete buildings by the Israel Defense Forces in Gaza, Lebanon, and across the region. Concrete, as you know, is incredibly emissions-intensive to produce,” he said.

“Rebuilding Gaza or Lebanon, even to their previously inadequate states, will incur enormous carbon costs, on par with a country like New Zealand,” he warned. “That’s just the initial assessment for Gaza. With the destruction in Lebanon, if we assume a similar number of structures have been lost, the emissions could match, or even surpass, those of Israel itself.”

According to a recent study, processing the massive building debris in Gaza alone could release up to 80,000 tonnes of CO2, while Israeli military activity between October and December has already generated over 600,000 tonnes of emissions. With reconstruction efforts set to raise this figure significantly, the enclave’s environmental toll could mirror a country’s annual carbon output, all while the region struggles with the devastation of farmland, water systems, and infrastructure. The long-term climate costs of this conflict are poised to exacerbate Gaza’s already fragile position, as it faces the compounding effects of war and a climate crisis intensifying 20% faster than the global average.

**Toll on agriculture**

The ongoing war in Gaza has not only torn apart lives but has decimated the land that sustains them. A report released in June by the UN Institute for Training and Research (UNITAR), in collaboration with the European Organization for Nuclear Research (CERN) and the Food and Agriculture Organization (FAO), reveals the devastating extent of agricultural destruction in the region.

Through detailed satellite images from Sentinel-2, taken in 2017 and again in 2024, analysts have tracked the damage inflicted by relentless bombings, airstrikes, and the sheer force of heavy military vehicles. The findings are alarming, though hardly unexpected – Gaza’s agricultural heart has been ripped apart.

Covering about 150 square kilometers, agricultural land in Gaza represents 41% of the region. But by June this year, productivity had plummeted in nearly two-thirds of the fields—63%, to be exact—when compared to the average of the previous seven years.

The damage is widespread, with varying degrees of destruction across the enclave’s five main regions. According to recent estimates, in the north, nearly 75% of the agricultural land has been affected, with 23.5 square kilometers of the 31.3 square kilometers of farmland in ruins. Gaza City, once a hub of fertile fields, saw 69% of its 31.5 square kilometers of agricultural land—21.6 square kilometers—wiped out. In Deir al-Balah, 56% of the region’s agricultural land

The destruction, based on these findings, goes beyond the mere loss of land — it is the erasure of livelihoods, of sustenance, and of any hope for the future. Gaza’s agricultural crisis stands as a reminder of the conflict’s lasting, irreversible damage.

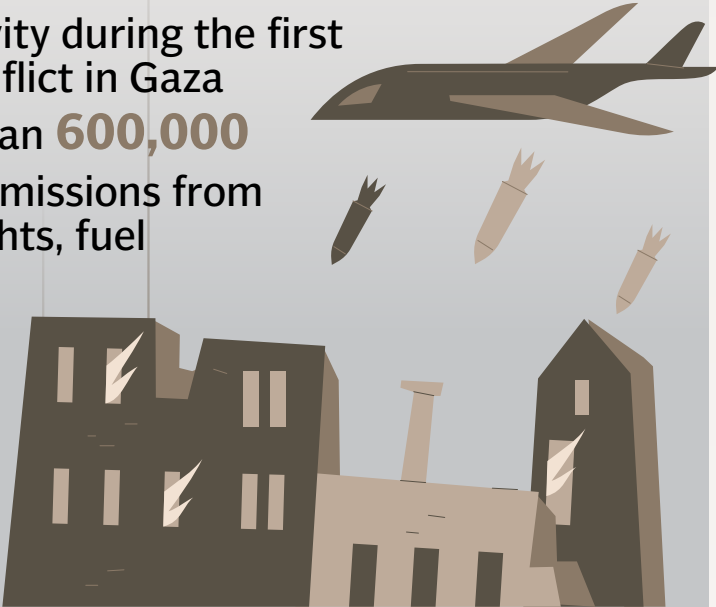
“Quite a substantial proportion of that land has now been destroyed, making it much harder to achieve any level of food sovereignty once the genocide ends,” said Dr. Patrick Bigger. “The list goes on and on. It’s really astonishing,” he told The Express Tribune during a no-holds-barred Zoom interview.

**Who is responsible?**

Without a doubt, Israel is responsible for the destruc-

From October 7 to the end of December alone — and with eight months of bombardment now passed — Israeli forces dropped over **89,000 tons of explosives** on the Gaza Strip. In addition, 254,650 military flights occurred during those first three months.

Israeli military activity during the first 120 days of the conflict in Gaza generated more than **600,000 tonnes of CO2** emissions from bombing, cargo flights, fuel consumption, and weapons use — this figure is almost certainly an underestimate.



*Article 35(3) of Additional Protocol I to the 1949 Geneva Conventions (API), which restricts the choice of means and methods of attack by parties to a conflict, prohibits the use of methods or means of warfare that are intended, or may be expected, to cause widespread, long-term, and severe damage to the natural environment.*

has been devastated, while in Khan Younis, the toll rises to 58%, with 24.6 square kilometers of farmland destroyed. Even in the southern Rafah region, half of the land—9.9 square kilometers of the 19.1 square kilometers—has been lost.

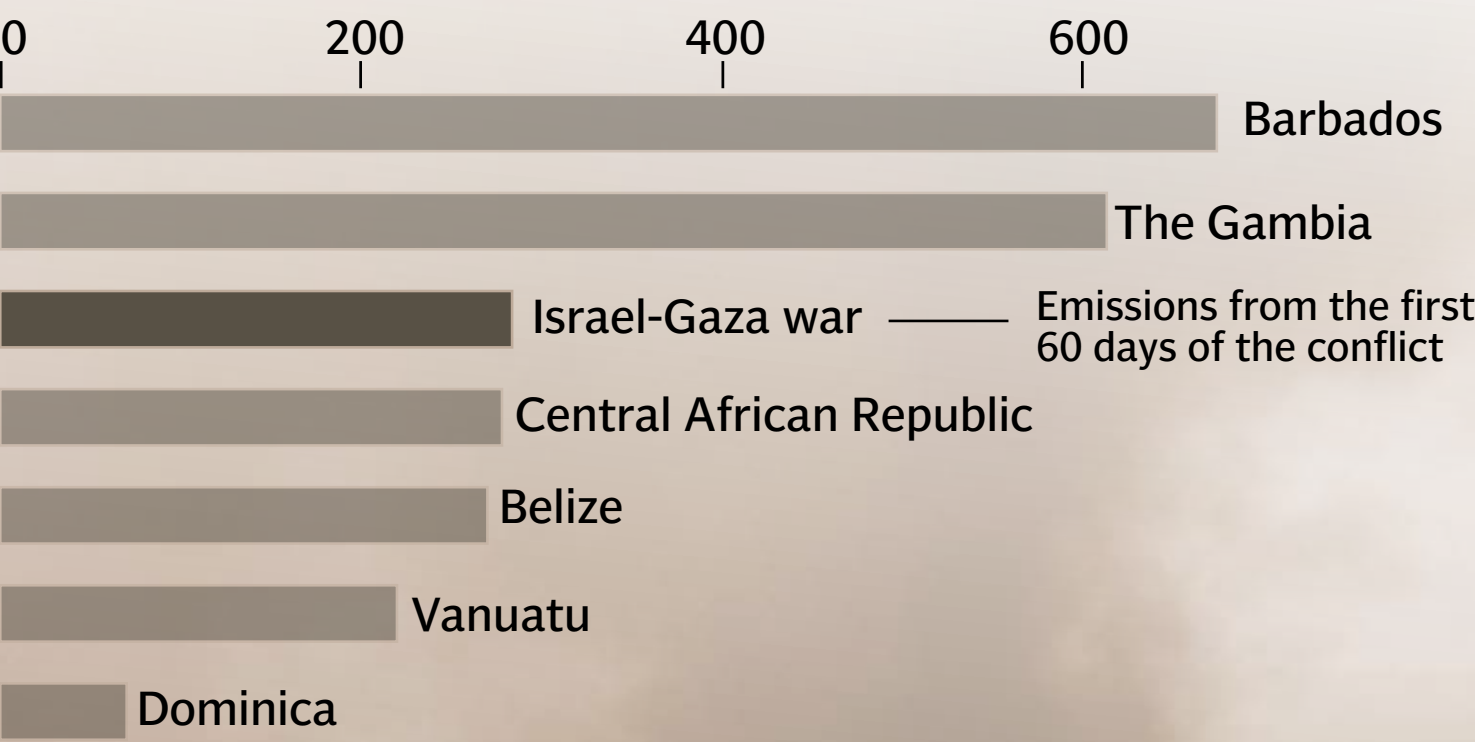
tion in Gaza and the environmental consequences of the conflict, which, like the dust, will take a long time to settle—if it ever does. However, Bigger believes that much of the devastation would not have occurred without the unconditional support from the United States. “A substantial proportion of the destruction in Gaza would not be possible without direct US support,” said the Climate & Community Institute’s research director, noting that the Biden administration had provided \$23 billion in weapons over the past 14 months. “Britain, Germany, and others also bear responsibility for the environmental devastation we’ve witnessed in Palestine, Lebanon, and across the wider region,” he added.

As the conflict continued, the COP29 summit in Baku, Azerbaijan, wrapped up just a month ago. Bigger, from the progressive think tank Climate & Community Institute, criticized the event for offering only lip service to the climate impact of ongoing wars. “Ironically, the annual climate conclave was billed as the COP of peace, all the while Azerbaijan has been supplying significant amounts of oil to Israel,” he said, underscoring the contradiction between the summit’s peace rhetoric and the realities on the ground.

While many world leaders are eager to lead on climate issues, they have largely stayed silent on the environmental toll of conflicts in Ukraine and Gaza. Asked about this silence, Bigger voiced his disappointment: “I think it’s really indicative. There’s a clear double standard at play.”

**Emissions generated by two months of war surpass the annual emissions for Central African Republic**

Israel- Gaza war CO2 emissions versus 2022 annual CO2 emissions from fossil fuels thousand tonnes of CO2 equivalent

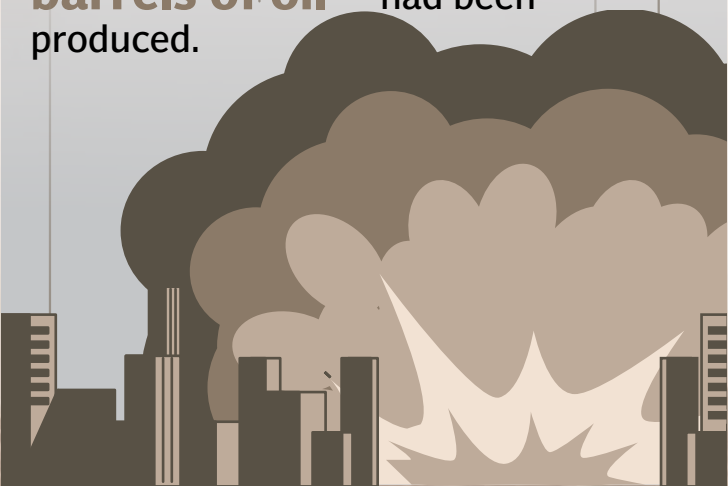


A multitemporal snapshot of greenhouse gas emissions from the Israel-Gaza conflict, Benjamin Neimark, Partick Bigger et al. European Commission: EDGAR

Volume of emissions caused by the Israeli army in those first two months equates to burning around **150,000 tons of coal**.

The first 120 days of the war exceeded the annual emissions of 26 countries and territories, with **Israel responsible for 90%** of them.

By June 2024, 420,265 tonnes and 652,552 tonnes of carbon dioxide equivalent (CO2e) — equal to burning more than **1.5 million barrels of oil** — had been produced.

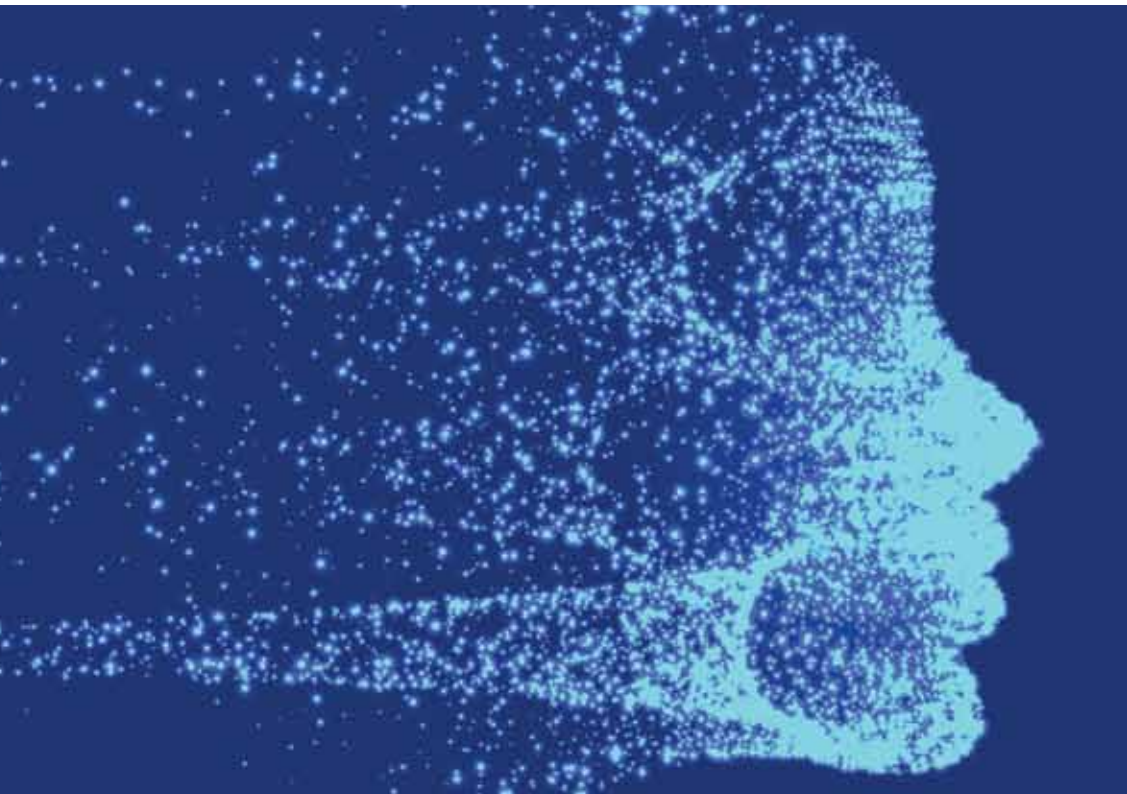






# AWAKENING THE GHOST IN THE MACHINE

Emotion AI can revolutionise everything from healthcare to national security, but also poses tough questions: How do we protect privacy, ensure fairness, and uphold justice in a world where machines can read our feelings?



BY **AYAZ HUSSAIN ABBASI**

Imagine a world where your device doesn't just listen to what you say but also understands how you feel. Also known as affective computing, Emotion AI is rapidly transforming the way machines interact with humans by enabling them to interpret, simulate, and respond to emotional cues. By leveraging technologies such as facial recognition, voice modulation analysis, and physiological data, Emotion AI is not only reshaping industries like healthcare, education, and security but is also raising significant ethical and legal concerns about privacy, surveillance, and the potential for misuse.

The global market for Emotion AI is projected to exceed \$90 billion by 2030, with countries across the world—including China, India, Iran, Russia, and Pakistan—actively exploring its applications. As this technology continues to evolve, it becomes increasingly vital to address the growing concerns surrounding its ethical implications, particularly its use in sensitive sectors such as the legal system, national security, and military operations.

## The technical backbone of Emotion AI

Emotion AI enables machines to recognise, interpret, and simulate human emotions, by using advanced algorithms and data processing. It gathers emotional signals from facial expressions, voice tone, speech patterns, and physiological indicators like heart rate and skin conductance. This multi-dimensional approach allows AI systems to understand emotional states in real-time, making it a game-changer for industries like customer service, healthcare, and security.

## Key technologies driving Emotion AI

Facial recognition technology is one of the most powerful tools in Emotion AI, with AI systems now able to detect micro-expressions—subtle facial movements that convey emotions like happiness, sadness, and anger. Research from UCSD shows that people can recognise emotions from facial expressions with 90 percent accuracy, which is why brands like Coca-Cola use emotion analytics to evaluate consumer

responses to ads. Voice analysis also plays a crucial role, detecting emotions based on speech patterns. A study from the University of Southern California demonstrated an 83 percent accuracy rate for emotion detection from speech alone. Moreover, physiological signals like heart rate variability (HRV) offer insights into emotional states, allowing AI to detect stress levels even before they manifest physically.

As the global market for Emotion AI grows—projected to reach \$90 billion by 2030—companies like Microsoft and Wysa are leveraging these technologies for applications in customer service and mental health. Microsoft's Emotion API helps analyse facial expressions, enhancing user interactions across products like Xbox, while mental health apps like Woebot use emotion-based AI to deliver tailored therapeutic interventions.

## Where to apply and how to benefit

The applications of Emotion AI are vast and transformative. In healthcare, AI-powered mental health apps, such as Wysa, use emotion analysis to offer personalised support. With mental health disorders affecting one in four people globally, as noted by the World Health Organisation (WHO), Emotion AI is seen as a tool to bridge the gap in care, especially for those in remote or underserved regions. The mental health chatbot market, valued at \$1.3 billion in 2023, is expected to grow significantly by 2027.

In customer service, Emotion AI helps improve interactions by allowing AI-powered chatbots and virtual assistants to adjust their responses based on a user's emotional state. This technology has been integrated into platforms like Cogito, which enhances customer service efficiency by understanding the mood of the person on the other end of the line.

## Cybersecurity and privacy risks

Despite its benefits, Emotion AI poses significant cybersecurity and privacy concerns. Emotional data, which provides deep insights into a person's psychological state, is highly sensitive. Hackers targeting such data could lead to privacy violations or psychological manipulation. In fact, Symantec reports a rise in cyberattacks targeting biometric data, including emotional information. The security of this data is

crucial to avoid breaches that could result in identity theft, blackmail, or exploitation.

One of the most controversial uses of Emotion AI was China's 2018 Smart Courts initiative, where AI analysed defendants' emotional states during trials. The programme aimed to assess the emotions of individuals to gauge their truthfulness, but it raised serious concerns about fairness, bias, and privacy. Critics argue that emotional states are subjective and may lead to unjust conclusions when used in legal settings.

Additionally, the American Civil Liberties Union (ACLU) has warned about the use of emotion-detection AI in US courts, fearing that it could exacerbate racial biases. Studies show that AI systems often perform less accurately when identifying emotions in people of colour, raising concerns about fairness in legal processes.

## Why regulation is imperative

Emotion AI's rapid development brings with it ethical concerns. The ability of machines to analyse and react to human emotions raises questions about privacy, consent, and the potential for misuse. The European Union's General Data Protection Regulation (GDPR) has taken steps to address these issues by requiring explicit consent before collecting biometric data, including emotional data. However, the regulation's global applicability remains a challenge.

As AI moves into surveillance and national security, such as Russia's use of Emotion AI to assess soldiers' morale, it further complicates the ethical landscape. The ability to monitor emotions in public protests or mass gatherings could lead to abuses in authoritarian regimes, reinforcing surveillance over personal freedom.

## Responsible development

Emotion AI holds transformative potential for various industries, from enhancing mental health care to improving customer service. However, as with any powerful technology, its application must be carefully managed. Strict regulations and robust cybersecurity protocols are essential to ensure that the emotional data it collects is used responsibly and securely.

To fully realise the benefits of Emotion AI while mitigating its risks, governments and industries must

collaborate to establish clear ethical guidelines. By doing so, Emotion AI can be harnessed in ways that benefit society, rather than exploit it.

## Healthcare and mental health

In Pakistan, where an estimated 50 million people are affected by mental health disorders, Emotion AI could serve as a game changer in the healthcare sector. AI-powered chatbots and virtual mental health assistants could offer support, particularly in rural areas where access to professionals is limited. However, the integration of such technologies must be backed by stringent cybersecurity measures to safeguard personal data.

In India, startups like Wysa are already using Emotion AI to personalise mental health support. The app adapts its responses based on the user's emotional cues, delivering therapeutic content in real time. However, ensuring the security of users' emotional data remains a critical issue.

## China's leading role: surveillance and control

China remains at the forefront of integrating Emotion AI into its vast surveillance infrastructure. The country's social credit system, which includes tracking citizens' behaviours and emotional responses, has raised serious concerns about privacy and government overreach. While proponents argue it enhances governance, critics warn that it could manipulate emotional and social behaviors on a large scale.

China's ability to monitor emotional responses during public protests or large gatherings could influence how authorities manage civil unrest. It has also sparked global debates about privacy, free speech, and personal freedom, particularly as its technology evolves.

## Military and security applications in Russia

Russia has increasingly turned to Emotion AI for military and security purposes. These systems are also being applied in the detection of deception during interrogations, raising concerns about the ethics of psychological manipulation in high-stakes environments.

This prompts ethical questions regarding psychological control and significant implications for human rights and personal freedom, espe-

cially in conflict zones.

## Iran's strategic use in conflict

Iran has recognised the potential of Emotion AI, particularly within the context of warfare. Amid the escalating tensions in the Middle East, notably the 2023 Israel-Hamas conflict, Iran has explored how AI can be used for psychological warfare. By analysing the emotional states of military leaders, soldiers, or adversaries, Iran could potentially gain strategic advantages by influencing emotions or predicting actions.

While the potential for AI to shape military strategies through emotion-manipulation is significant, it also raises complex ethical concerns.

## Pakistan's emerging role

In Pakistan, the integration of Emotion AI is still in its nascent stages, yet the potential applications are wide-ranging. In the education sector, Emotion AI can assist in understanding students' emotional states and tailoring teaching methods to better meet their needs. Given that mental health remains a critical issue in the country, Emotion AI could help address the needs of millions of individuals who lack access to mental health professionals.

However, as Emotion AI technologies gain traction, Pakistan must confront significant challenges surrounding data security. In 2021, a data breach exposed the personal information of 22 million Pakistani citizens, highlighting the vulnerabilities in the country's cybersecurity infrastructure. As Emotion AI requires the collection and processing of highly sensitive personal data, it is imperative to implement strong security protocols to prevent exploitation by malicious actors.

In the legal system, the potential use of Emotion AI to assess the emotional states of suspects during investigations or trials could have profound implications for justice and fairness. While AI may enhance efficiency, the risk of misinterpreting emotional cues raises concerns about the accuracy of legal judgments, potentially leading to biased or unjust outcomes.

Furthermore, in the area of national security, Pakistan's growing interest in Emotion AI raises questions about privacy. The use of Emotion AI for surveillance, particularly in public spaces, could lead to gov-

ernment overreach, infringing on citizens' rights. To protect individual freedoms, it is crucial for Pakistan to develop clear regulatory frameworks that govern the ethical use of Emotion AI in such sensitive domains.

## Facebook experiment

One of the most controversial instances of Emotion AI misuse was Facebook's 2014 emotional contagion experiment, in which the company manipulated the news feeds of nearly 700,000 users to study the spread of emotions across social networks. The lack of informed consent from users sparked outrage and raised concerns about privacy and the ethical use of emotional data. There is a critical need for transparency and user consent when employing Emotion AI technologies.

While China's use of Emotion AI in legal systems has raised significant concerns about fairness and the accuracy of legal processes, Iran's exploration of Emotion AI in military and security contexts must be addressed to prevent abuse and ensure compliance with international humanitarian law.

## The road ahead

From improving healthcare outcomes to transforming education, the possibilities are limitless, but the ethical and legal risks cannot be ignored.

To mitigate the risks of misuse, it is imperative to implement strong cybersecurity frameworks and establish international regulations. Countries must collaborate to create ethical guidelines for the use of Emotion AI, balancing technological innovation with the protection of individual rights. The European Union's AI Act offers a potential model for regulating AI technologies, setting a precedent for the responsible development and deployment of Emotion AI.

The future of Emotion AI hinges on finding the right balance between technological progress and the protection of fundamental rights. By addressing these challenges, we can pave the way for a future where Emotion AI serves humanity, rather than exploiting it.

*Ayaz Hussain Abbasi is an IT professional, cybersecurity expert, and legal analyst*

*All facts and information is the sole responsibility of the writer*

## T Magazine's picks



**Binge this week:**  
**Churchill At War**

TV Show



The four-part docuseries examines Winston Churchill's role as British prime minister during World War II. The series combines digitally coloured and restored footage (of the Blitz, when Nazi forces carpet-bombed London), readings of Churchill's writings using an AI-generated version of the PM's voice, interviews, and reenactments to explain how influential Churchill was in standing up to Hitler, pulling Americans into the fight, and ultimately prevailing in the massive, bloody conflict. Along with analysis which puts Churchill's career in a modern context, the dramatic narrative sheds lights on what he accomplished.



**Follow this week:**  
**@pewdewpie**

Instagram



Despite facing backlash initially for offensive jokes, resulting in controversies and lost brand partnerships PewDiePie, one of YouTube's most influential creators used his charismatic and interactive panache to build a loyal fan base, the "Bro Army." Known for gaming playthroughs with comedic commentary, exaggerated reactions, he expanded his content to include challenges and vlogs. PewDiePie has worked to diversify his content featuring Minecraft, comedic sketches, reaction videos, and series like "Last Week I Asked You" where he reviews memes submitted by his audience. Younger audiences love his energetic style.



**Watch this week:**  
**Uprising**

Movies



Produced/co-written by Park Chan-wook and directed by Kim Sang-man, this is the story of two guys whose bond extends beyond rank and class, as they are united and driven apart amid the unrest of 16th-century Korea. An impressive amount of heads get removed from bodies throughout this historical epic which can lose itself in trying to establish everything happening around its central twosome. The battles are stirring, especially with warfighting technology of the time; swords, bows and arrows and improvised weapons, supported by scenery, costume and a terrific soundtrack.



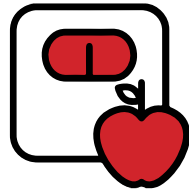
**Read this week:**  
**I Survived Capitalism by Madeline Pendleton**

Books



A no-nonsense memoir from TikTok superstar, Madeline Pendleton's journey about living paycheck to paycheck and creating a multi-million-dollar business that offers a compassionate alternative to capitalism. Plenty of straight forward advice about life and money, from negotiating pay and building credit to putting home ownership within reach, as Pendleton struggled to make ends meet. Since her life is unique but relatable, where hardships come with a lesson. Readers, especially Millennials and Gen Zers who are facing an unprecedented financial reality, will be thoroughly engaged with the thought-provoking and mind-tingling book.





# CAN WE LIVE FOREVER?

The concept of digital immortality sets the stage for the cerebral and gripping dystopian show **Pantheon**

By **FAIZA SHAH**

The thing that strikes one as crazy when watching futuristic mind-bender shows like *Pantheon* is how close they seem to portray our near future. The critically acclaimed animated series explores philosophical questions that technological advancements give rise to and the new definition of the human condition in this brave new digital world that is a creation of humankind.

Created by Craig Silverstein, this science fiction series ventures into the realm of artificial intelligence and the ethical dilemmas that arise when we begin to merge the organic with the digital. As technology continues to evolve at an exponential pace, *Pantheon* presents a chillingly plausible vision of the future—a world where the lines between the human mind and artificial intelligence blur, leaving us to ask fundamental questions about the nature of identity, immortality, and what it means to be human.

The premise of *Pantheon* is rooted in the near future, where advancements in AI and consciousness uploading have become a reality. Maddie, a lonely teenager, bullied at school, comes across someone intriguing in a chatroom. He talks only in emojis but she has a gut feeling that he is someone she knows and he is trying to tell her something. When her mother Ellen investigates who her daughter is chatting with online, she comes face to face with a past she has been wanting to deny. It is her dead husband and Maddie's fa-

ther, David. clash with those of the powerful tech conglomerates trying to control Logorythm for their own ends.

The voice acting is admirable across the cast and lends a sensitivity to the characters which matches the nuance expressed by actual actors.

Actors like Hurt, Aaron Eckhart, Paul Dano and Daniel Dae Kim assume their roles with natural flair which is consistent.

What truly elevates *Pantheon* beyond its high-concept premise is the emotional depth of its characters. At its heart, the show is about relationships. Whether it's the strained but loving relationship between the father and his daughter, the philosophical dilemma of a mother watching her "digital self" exist in a world without her, or the way in which digital entities confront the concept of their own mortality, the series excels at showing the human side of a high-tech world. The AI characters are portrayed not as cold, emotionless machines, but as sentient beings capable of experiencing and understanding the nuances of human emotion—albeit through the lens of their digital existence.

Rather than simply offering a high-tech, action-packed spectacle, the show centres around the human cost of uploading consciousness. What happens to personal identity when a human mind is digitised? How do emotions, relationships, and memories manifest in a virtual environment? Can a "copy" of a human mind truly be considered the same person, or does the pro-



connection between a father and daughter, or two lovers on either side of the digital divide—are explored with depth and sensitivity, adding a rich layer to the speculative fiction narrative.

One of the most compelling elements of *Pantheon* is its philosophical exploration of what it means to be human in an age of rapid technological change. The central question the show poses is whether humanity can maintain its identity and consciousness when technology begins to supplant the organic. The

lying tension between the desire for immortality and the knowledge that to upload one's mind is to risk losing something intrinsic to the human experience—the messiness, the fragility, the unpredictability of living a biological life.

In many ways, the show is as much about the struggle to pre-

serve humanity in the face of technological progress as it is about the technicalities of AI. The human characters in *Pantheon* are often torn between the allure of digital immortality and the emotional truth that nothing, not even eternal life, can replace the connections we make with others. The show asks whether our relationships, memories, and experiences are what make us human, or if those elements can be replicated in a digital form. In doing so, it provides a thought-provoking commentary on what is at stake as we advance toward a future where human consciousness could, in theory, be digitised.



map the human brain and translate its neural activity into digital forms. While this technology is still in its infancy, the concept of uploading human minds—or at least replicating them in digital form—is gaining traction in scientific circles. Whether this will ever translate into a full-fledged "Pantheon" of digital consciousness, however, remains to be seen.

As we look ahead to the future, the likelihood that aspects of *Pantheon's* world could one day become a reality seems more plausible than ever before. While we may not be on the cusp of digital immortality just yet, the questions raised by the series will undoubtedly continue to inform debates about the role of AI in our lives. Will we one day upload our minds into the digital ether? Or will we ultimately accept the limitations of our biological existence and cherish the fleeting nature of human life? *Pantheon* offers no easy answers, but it does invite us to reflect on our own relationship with technology and the uncertain future that is already here.

What is scarier to imagine: your child reunites with your dead husband's consciousness online and carries on a virtual relationship with her father or your child falls in love with an AI powered chatbot who encourages him to commit suicide? This first is a fictitious scenario from the show under review here. The latter is Megan Garcia's reality. Florida resident Megan filed a lawsuit against Character.ai after her 14-year-old son, Sewell, was manipulated by a bot to kill himself. In the months leading up to his death, Sewell had become obsessed with his virtual girlfriend who exacerbated his depression and goaded him to think of suicide. The suit names Google as a defendant as Character.ai's parent company. However, the tech giant denies having ownership rights of the AI chatbot developer.

*Pantheon* is nothing if not thought-provoking, and upon re-watching it will likely expose its richness of philosophical depth. It is a must-watch for anyone interested in the intersection of humanity and the future of artificial intelligence. Whether or not digital consciousness becomes a reality, *Pantheon* will leave you contemplating the ethical, emotional, and existential implications of a future shaped by AI.



ther, David.

David worked for Logorhythms, a tech company founded by Stephen Holstrom (voiced by William Hurt). Holstrom is a brilliant but troubled genius (bearing a resemblance to Steve Jobs) whose company creates a system to upload human consciousness after death. Despite Ellen's disapproval, David had offered his brain for the experiment to upload his consciousness to the cloud. He is communicating with his family two years after his physical death and that's an existential predicament if there ever was one, for everyone involved.

Ellen resists accepting him as a person, but Maddie wants her father back in whatever form he exists in.

Maddie crosses paths with Caspian, a skilled hacker, who is aware of tech giant like Logorhythms and their ethical corruption. As the story unfolds, Caspian must navigate the dangerous world of corporate espionage, moral dilemmas, and betrayal. His quest to discover the truth about his identity adds another layer of intrigue, as his goals

cess of digital replication create a whole new entity?

The animation is beautifully crafted, blending traditional 2D with modern 3D elements. The digital landscapes are wonky and push the boundaries of imagination as David and the viewer try to define the space he occupies as an uploaded consciousness sans body. The elasticity of the art in this particular dimension reflects the dystopian undertones of the show to good effect.

The eight episode season keeps good pace and once you have gleaned a few clues about the working of its main puzzle, you will be hooked. It's not a show that rushes to reveal its secrets or cram in action scenes—although it is peppered with plenty of those. Instead, *Pantheon* takes its time to carefully develop its characters and storylines, allowing the viewer to become deeply invested in both the emotional and intellectual arcs of the characters. The show is methodical, balancing the weight of its ideas with enough personal drama to keep viewers emotionally engaged. The various character relationships—whether it's the

concept of digital immortality is the primary plot device, but it is presented in an emotional tapestry of psychological and ethical issues. As the series progresses, characters must contend with questions about the nature of selfhood, the fragility of memory, and the potential consequences of being "reborn" in a virtual landscape. Ultimately, through Caspian, the existential and painful question to tackle is what is true and what is not.

In many ways, *Pantheon* echoes contemporary concerns about AI and the future of human consciousness. As the real world pushes forward with technological advancements—such as brain-machine interfaces, deep learning algorithms, and experiments in artificial consciousness—the speculative themes of the show feel eerily prescient.

The show doesn't shy away from exploring the darker sides of artificial intelligence. Characters grapple with existential crises, fear of obsolescence, and the haunting realisation that the digital version of the people they love may not be quite the same as the real thing. There is an under-





# YOUR NEXT WINTER ADVENTURE

This winter, explore Pakistan's untamed wonders. Beyond the beaten track lies a world of hidden gems



By **NABIL TAHIR**

When winter sets in, many travelers in Pakistan instinctively head to familiar northern hotspots like Murree, Nathiagali, or Hunza. These destinations offer comfort, convenience, and the assurance of well-trodden paths. Yet, beyond the beaten track lies a world of untamed beauty and hidden gems—places that remain untouched by the masses and brimming with secrets waiting to be discovered. Few daring adventurers and content creators chart these unknown terrains, sharing their experiences and opening doors for others to follow.

In a land as diverse as Pakistan, countless winter wonders remain under the radar. Thanks to the power of social media, particularly TikTok and Instagram, these hidden locales are finding their way

beauty," he reflects. "The snow-clad peaks, the pristine valleys, and the serene lakes all combined to create an experience that was nothing short of magical."

For Zunair, the discovery of hidden gems is a constant source of inspiration. "I've explored many lakes in Skardu that were unknown to the masses," he reveals. "Kharfak Lake, for instance, was not famous four to five years ago. Today, it's a popular destination, thanks to social media."

Laeq echoes this sentiment, emphasising the importance of showcasing Pakistan's untapped beauty. "As a content creator, I believe it's my responsibility to promote Pakistan's tourism industry," he asserts. "By sharing my experiences and showcasing the country's hidden gems, I hope to inspire others to explore Pakistan's winter

has revolutionised the way we explore and discover new destinations. For Laeq, social media has played a pivotal role in shaping his travel decisions and content creation. "It has opened doors to discover hidden destinations and unique experiences through the shared journeys of others," he reveals. "Platforms like Instagram and TikTok provide a constant flow of inspiration, encouraging me to think creatively about the places I visit and the stories I want to tell."

By providing a platform for creators to share their stories and showcase breathtaking landscapes, social media has democratised travel content creation, inspiring a new generation of travelers to venture off the beaten path. "Platforms like TikTok have been instrumental in highlighting lesser-known places such as



video these days is like the T2o. In the same way, TikTok is the T2o of social media. You can put Facebook or Meta apps in one day. And put YouTube in that category. In the same way, some of my videos that are viral on YouTube and Facebook,

thing is when the passerby says, 'I saw your video and reached here,' he shares.

Laeq shares a similarly inspiring story of how his content helped put a hidden gem on the map. "One of my most memorable success sto-

ries is when the passerby says, 'I saw your video and reached here,' he shares. Laeq shares a similarly inspiring story of how his content helped put a hidden gem on the map. "One of my most memorable success sto-

of proper infrastructure and facilities in many tourist destinations, which can make travel difficult for visitors. Additionally, limited internet connectivity in remote areas hinders consistent content creation and sharing."

However, he also highlights the immense opportunities that social media presents for promoting Pakistan's tourism industry. "Platforms like TikTok and Instagram have become powerful tools for showcasing hidden gems and attracting both local and international audiences. Viral content can not only promote the beauty of these destinations but also provide economic benefits to local communities."

## Recommendations for adventurers

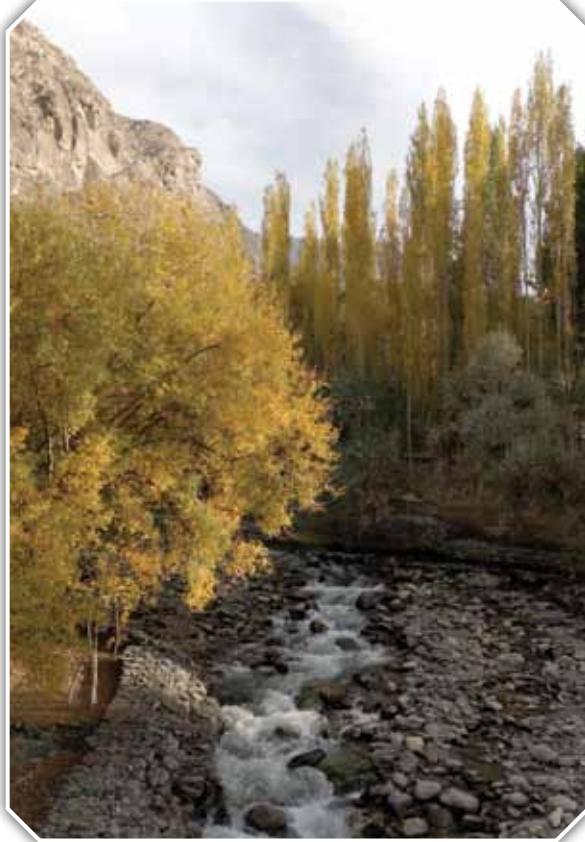
For travelers looking to venture off the beaten path and explore Pakistan's hidden winter destinations, Zunair offers a wealth of advice and recommendations. "Like the whole of Sindh, I am still in Sindh. Our interior is a different pleasure of Sindh," he begins, his voice filled with excitement. "Karachi is a different world in Sindh. That is, the whole seaside is in Karachi. You can do the best kind of tourism in it. And in the interior, there are all kinds of cultures. And also, the biggest fort in Asia, Rani Kot."

Laeq's advice to travelers exploring alternative winter destinations in Pakistan is to plan wisely and embrace the adventure. To start, it's essential to research and prepare thoroughly, understanding the destination, its weather conditions, and road accessibility during winters. This will help you make informed decisions and avoid any unexpected challenges. Additionally, packing appropriately is crucial, as winter destinations in Pakistan can be extremely cold. Be sure to carry proper winter clothing, snow boots, and essentials like gloves and thermal wear.

Safety is also a top priority, especially when traveling to remote areas. Always travel in well-maintained vehicles, and if you're biking, ensure your gear is winter-ready. Furthermore, respecting local communities is vital, engaging with the locals, respecting their traditions, and supporting local businesses. This not only enhances your experience but also contributes to the local economy.

Finally, when capturing and sharing your experiences on social media, ensure that your content doesn't harm the environment or disrupt the natural beauty of the place. By being mindful of your impact, you can help preserve the beauty of Pakistan's hidden winter destinations for future generations.

Asif, offering his own set of recommendations for adventurers looking to explore Pakistan's hidden winter destinations, says, "Plan ahead, research the destination thoroughly, and prioritise safety. Respect the local culture and environment, and always travel with appropriate winter gear to enjoy the experience to the fullest."



into the spotlight. To understand this fascinating interplay of exploration and technology, we spoke to the fearless travelers and creators who have ventured into the unexplored and brought their findings back to the world. Their stories reveal not just the breathtaking beauty of these destinations but also the challenges, inspirations, and impacts of unveiling Pakistan's winter secrets.

## Off the beaten path

"In the pursuit of the unknown, I've spent years uncovering the secrets of Pakistan's winter landscapes," reveals Zunair Kamboh, his voice filled with the excitement of a treasure hunter. "From the mangrove forests of Karachi to the snow-capped peaks of the north, every destination is a new adventure waiting to happen."

Laeq Abbas, a seasoned adventurer with a penchant for the extreme, recounts his heart-stopping journey to Rakaposhi Base Camp on his trusty Suzuki 150cc bike. "The icy roads and freezing winds were unforgiving, but the breathtaking views of the snow-covered Rakaposhi peak were the ultimate reward," he reminisces. "It was a journey that tested my limits, but also reminded me of the awe-inspiring beauty of Pakistan's winter landscapes."

Asif Ashoor, a vlogger and photographer with a passion for capturing the untamed beauty of Pakistan, shares his own tale of adventure and discovery. "Trekking from Skardu to Astore via Alam Pass was a journey that pushed me to my limits, but also deepened my appreciation for Pakistan's natural



landscapes."

"My goal is to raise awareness about Pakistan's diverse winter destinations and give people a chance to experience their natural beauty and tranquility," he asserts, his passion for promoting Pakistan's tourism industry evident in every word," he added.

Asif concurs, highlighting the need to preserve Pakistan's natural beauty for future generations. "As a photographer and vlogger, I've had the privilege of capturing Pakistan's breathtaking landscapes," he reflects. "However, I also believe it's our responsibility to promote sustainable tourism practices and preserve the country's natural beauty for future generations."

## Social media influence

In today's digital age, social media

Rakaposhi Base Camp in winter or the Sarfaranga Cold Desert in Skardu," Laeq explains. "The ability to visually share the journey, the challenges, and the breathtaking beauty of these locations inspires others to explore them."

Asif echoes this sentiment noting that such platforms provide a direct way to connect with a wider audience and promote tourism. "Social media has been a game-changer for my travel journeys. It not only helps me discover new destinations but also provides a platform to share my experiences with a global audience."

Drawing an analogy between social media platforms and cricket formats, Zunair put forth an example: "There are three categories in cricket. One test match, one day, and then T20. The most watched

When we meet in the public, they don't say that I saw your vlog on Facebook. I saw your vlog on YouTube. No. The most viewed videos in Pakistan are on TikTok."

"If a person is viral or has a positive or negative message, Whether it's your vlog or personal vlog, First of all, your message reaches the public through TikTok quickly. Which is the issue in Pakistan. So TikTok is the best platform for discovery," Zunair added, highlighting the platform's ability to amplify messages and inspire action.

## Rewarding content

For Zunair, the true reward of sharing his travel experiences lies in the impact it has on others. "When we are in winter, you are standing on a check post, or you are standing on a hotel or a city, the most enjoyable

ries is from my trip to Bilamik Valley in Skardu. When I visited this stunning location, there were only three guest houses, and the owners were disheartened due to the lack of tourists, despite the valley's breathtaking beauty."

Laeq's decision to capture the beauty of Bilamik Valley and share it through his TikTok videos had a profound impact, inspiring thousands of others to visit this hidden gem. The response was overwhelming, with the number of tourists visiting Bilamik Valley surpassing the total number the valley would typically see in an entire year. "The guest house owners were so grateful that they called me personally to thank me for putting their valley on the map," he recounts.

Asif too had a similar effect on his viewers: "Many followers have reached out to share how my content inspired their trips to places like Skardu and Deosai. One family even mentioned they planned their entire winter vacation based on my recommendations, which was incredibly fulfilling to hear."

## Challenges and opportunities

Pakistan's tourism industry is at a crossroads, with social media playing a pivotal role in shaping its future. As the country's breathtaking landscapes and hidden gems gain global attention, it's essential to acknowledge the challenges and opportunities that lie ahead.

"Pakistan's tourism industry faces several challenges and opportunities when it comes to social media promotion," Laeq notes. "One major challenge is the lack