Vol.19 No.08

April 2024

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a greener vision

Rising Impacts, Moving Lives: Addressing Climate Migration in Pakistan and Beyond

Rethinking Green Initiatives
Environmental Concern

Manghopir's Crocodile Cult
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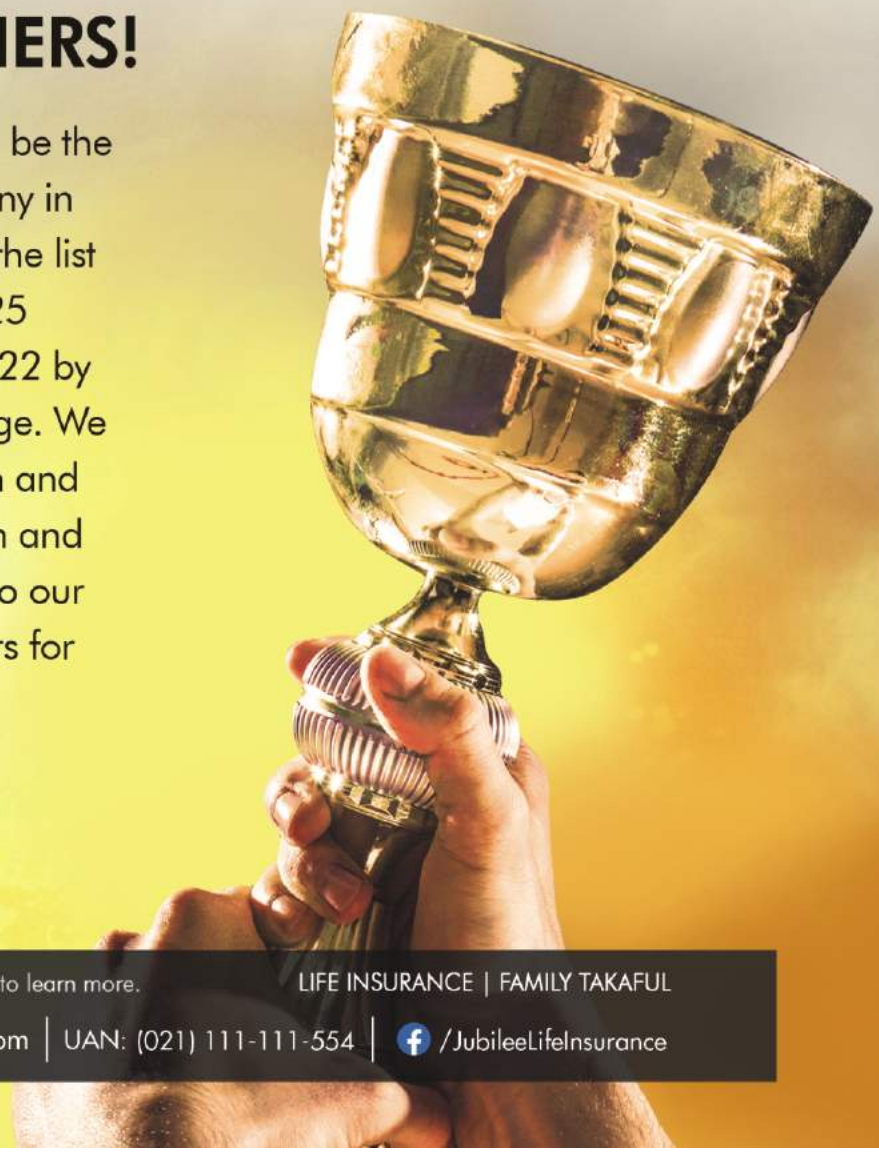

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Quarterly subhnau Vol.19 No. 08
a greener vision

ISSN 2308-5614
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a greener vision

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Printed at
Hamdard Press (Pvt) Ltd.
Printed by
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Bahadurabad, Karachi.
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Price: Rs. 600 per copy

Letters to the Editor

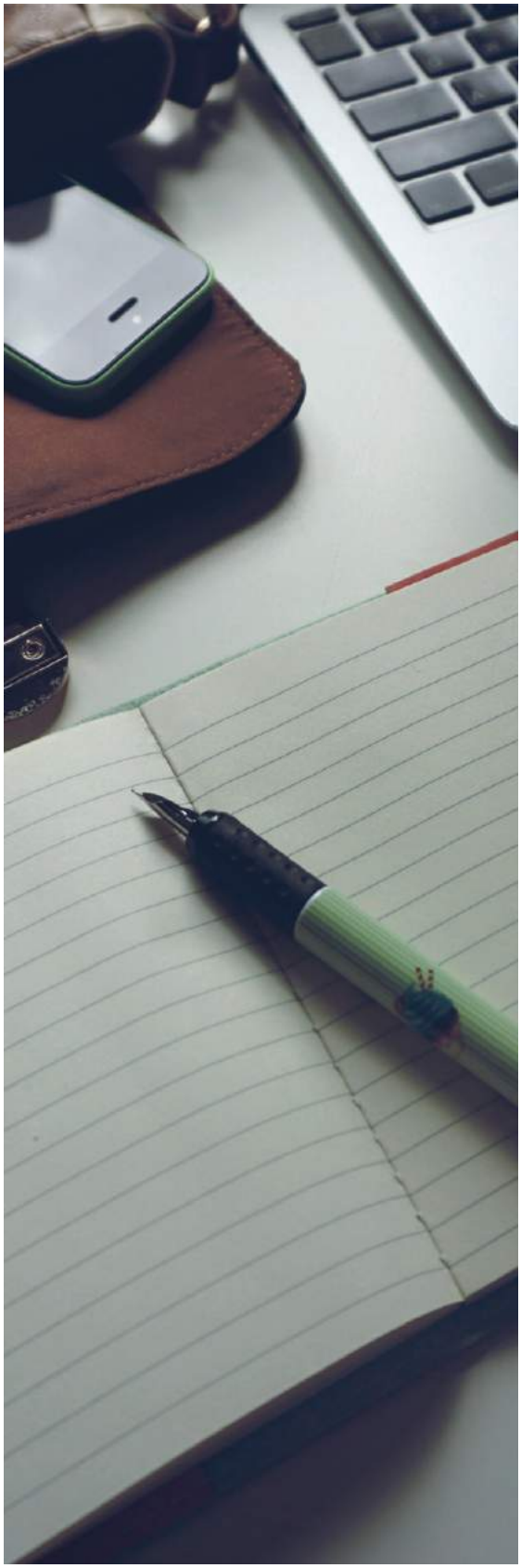
Cover Story January 2024

The idea of a climate emergency task force in the cover story is a needed and a good one. This task force can overcome the issues of coordination left in the wake of the devolution of handling of disasters in Pakistan. It's a fact that climate change will create more havoc in the future, so effective mechanisms must go into effect now as recommended.

Javaid Jabbar, Islamabad

I think climate change requires far more work from our authorities as we are literally reacting to these impacts. They happen and we respond – how sad is that! Instead of planning ahead and making sure that we do something to adapt is increasingly becoming unavoidable. How long till our authorities wait for the next big crisis and pretend its all the fault of other developing countries? The damage is there and they have to improve their responses, period.

Zafar Shah, Karachi



Chief Editor's Message

The rising impacts of climate change require action on multiple fronts, including addressing the needs of climate migrants or those displaced by these disasters.

In our featured cover story this month, we delve into climate migration and the harrowing aftermath of the 2022 floods—a stark manifestation of the escalating climate crisis. The devastation wrought by these floods has been staggering indeed. Around 33 million people were directly affected, plunging 20.6 million people into dire need of lifesaving assistance. Alarmingly, half of those in need were children, underscoring the disproportionate impact of climate disasters on the most vulnerable segments of society. In total, the crisis displaced 7.9 million people, with at least 664,000 individuals seeking refuge in relief camps and informal sites. This catastrophe not only highlights the immediate humanitarian needs but also underscores the urgent necessity for comprehensive action to address the root causes of climate change and bolster resilience among communities at the forefront of this global challenge.

Through our cover story, we aim to shed light on the broader implications of such climate-induced displacements, drawing connections to global migration trends and emphasizing the critical need for concerted efforts both globally and within nations like Pakistan, which bear the brunt of climate change's impacts.

Shahida Kauser Farooq
Chief Editor

Cover Story

Rising Impacts, Moving Lives: Addressing Climate Migration in Pakistan and Beyond

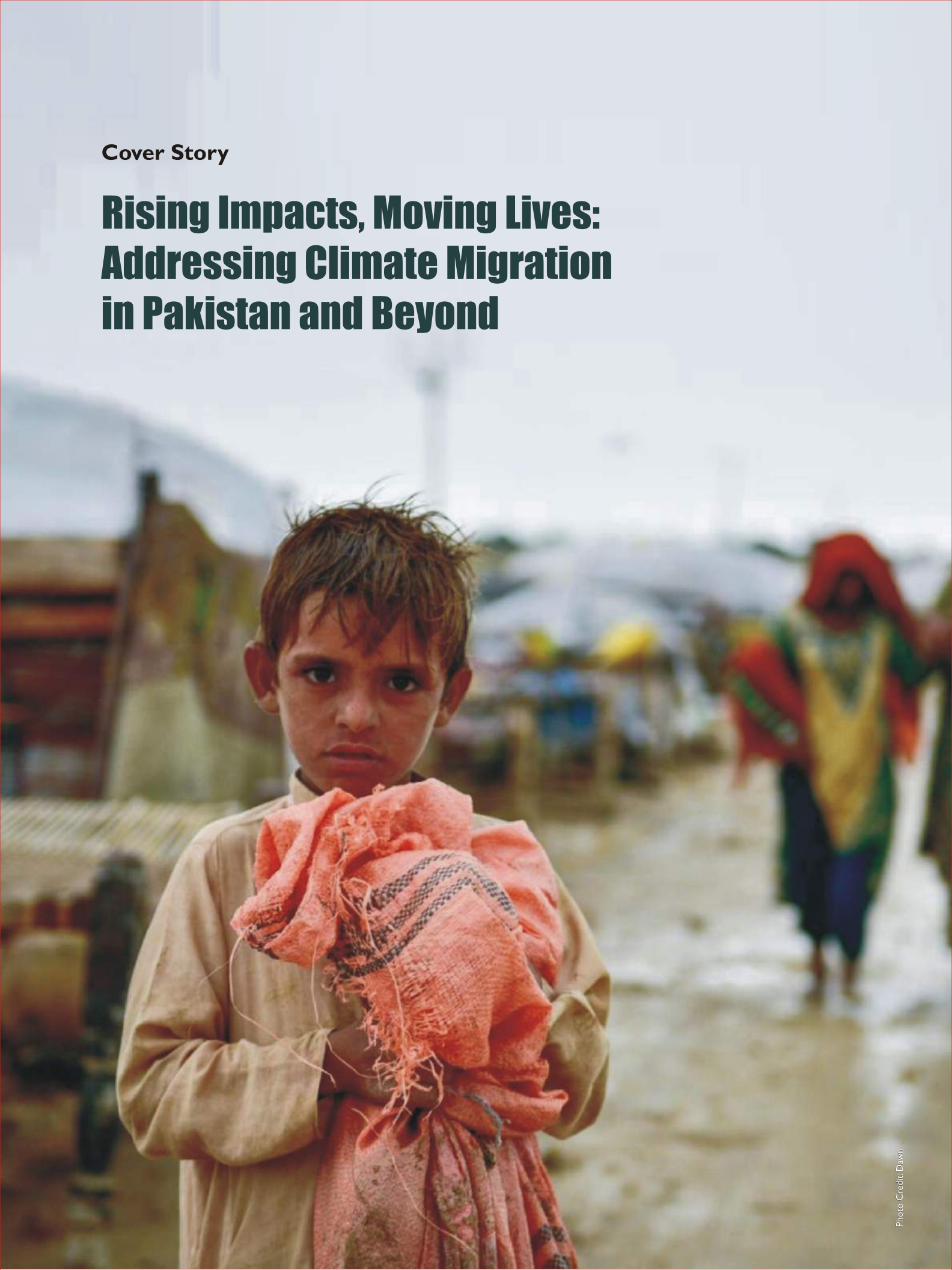


Photo Credit: Dawn

Dr. Farrukh Chishtie

As the 2022 floods submerged a third of Pakistan, displacing millions and revealing the acute vulnerabilities of its people to climate change, this cover story delves into the escalating crisis of climate migration—a phenomenon pushing humanity to the brink, demanding urgent global and local actions to forge pathways to resilience and sustainability.

The devastating floods of 2022 in Pakistan mark a dire chapter in the country's ongoing struggle against the impacts of climate change. With one-third of the nation submerged, over 33 million people were affected, half of whom were children, highlighting the vulnerability and scale of displacement faced by the population.

This catastrophic event led to around 20.6 million people requiring life-saving assistance, with 7.9 million displaced and at least 664,000 moving into relief camps and informal sites. These figures not only underscore the immediate humanitarian crisis but also signal the growing challenge of climate migration.

As climate change exacerbates weather extremes, the phenomenon of climate migration is expected to intensify, necessitating global and local responses. The situation in Pakistan, reflective of broader global trends, demands urgent

Photo Credit: REUTERS/Akram Shahid

> “This catastrophic event led to around 20.6 million people requiring life-saving assistance, with 7.9 million displaced and at least 664,000 moving into relief camps and informal sites. These figures not only underscore the immediate humanitarian crisis but also signal the growing challenge of climate migration”

action on several fronts.

Globally, there is a critical need for enhanced climate mitigation efforts to reduce greenhouse gas emissions and slow the pace of climate change. Alongside, adaptation strategies must be prioritized, particularly in vulnerable countries like Pakistan, to bolster community resilience against future climate-induced disasters. This includes investing in infrastructure, improving disaster preparedness and response mechanisms, and ensuring that displaced populations have pathways to recovery and stability.

Moreover, addressing the root causes and impacts of climate migration requires a multifaceted approach that encompasses legal frameworks to protect climate migrants, financial resources to support adaptation

and mitigation strategies, and international cooperation to share the burden of climate impacts equitably.

The tragedy witnessed in Pakistan serves as a stark reminder of the urgent need for concerted global action to tackle climate change and its implications for migration and displacement. By recognizing the interconnectedness of these issues, the international community, together with nations like Pakistan, can work towards a more resilient and sustainable future for all affected populations.

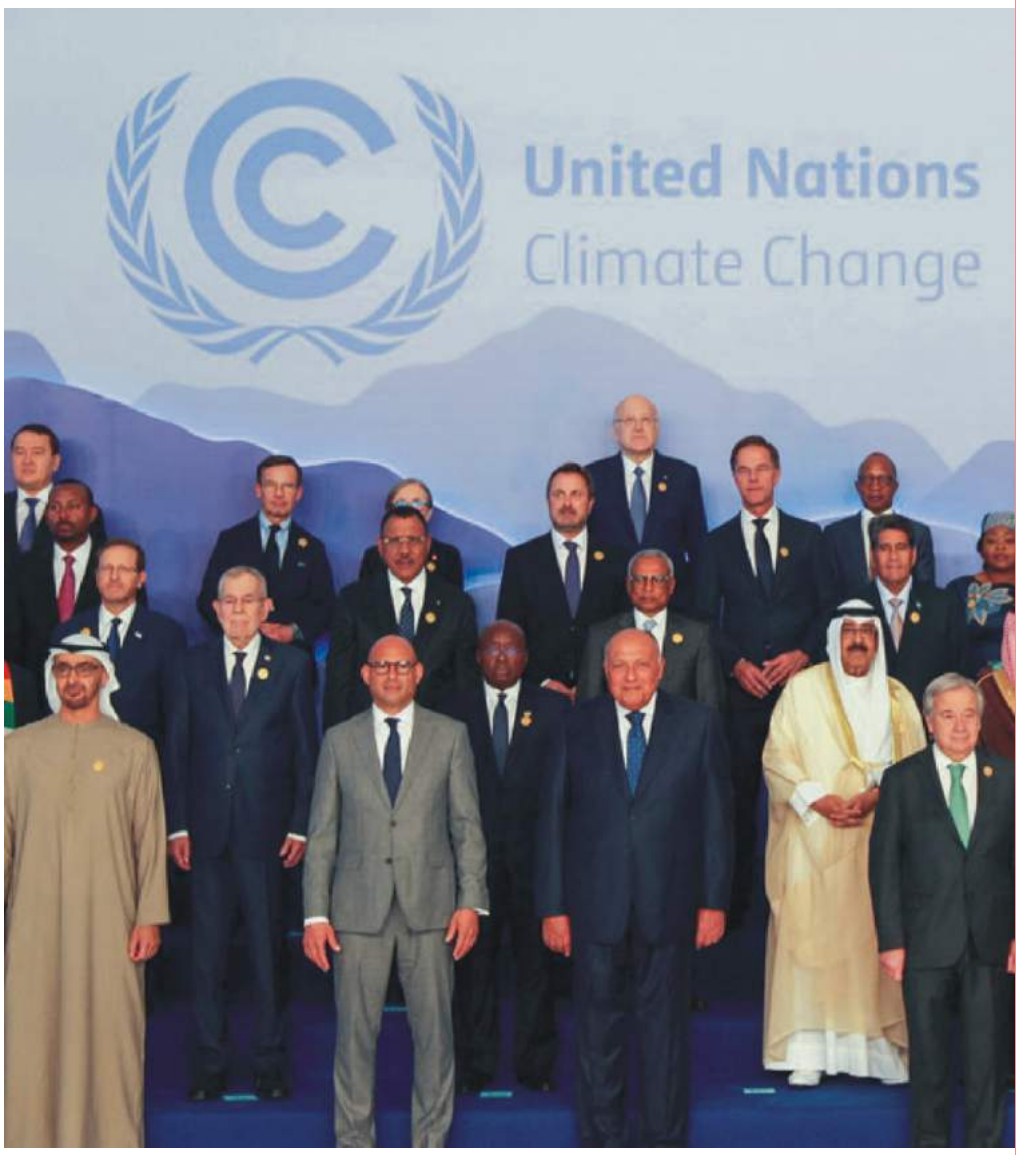
Climate Migration: A global concern

The ongoing crisis of climate migration in Pakistan, exemplified by the tragic consequences of the 2022 floods, is a stark reminder of the broader challenges faced globally due to climate change. With over 33 million people affected and one-third of the country inundated, Pakistan's ordeal is not isolated. It reflects an increasing global trend where climate-induced migration is becoming a defining challenge of our time. This crisis is being fueled by extreme weather events, such as heavy rainfall, droughts, and rising sea levels, driving millions from their homes annually.

“Globally, forced displacement is reaching unprecedented levels, with over 108.4 million people displaced by the end of 2022 due to various factors including climate change (UNHCR). Rising sea levels alone could affect the land that 150 million people live on by 2050, with numbers potentially escalating to 480 million by 2100 if the melting of Antarctic ice sheets accelerates”

Globally, forced displacement is reaching unprecedented levels, with over 108.4 million people displaced by the end of 2022 due to various factors including climate change? (UNHCR)?. Rising sea levels alone could affect the land that 150 million people live on by 2050, with numbers potentially escalating to 480 million by 2100 if the melting of Antarctic ice sheets accelerates. This scenario predominantly threatens Asian

> “One primary gap lies in the follow-up and rehabilitation phase for IDPs. While immediate relief efforts are often effective in providing short-term assistance, there is a notable lack of sustained support to ensure IDPs can return to a semblance of normalcy. This includes rebuilding homes, restoring livelihoods, and providing continued healthcare and education services”



countries, alongside parts of the U.S. facing droughts, floods, hurricanes, wildfires, and sea level rise?.

The recent COP27 summit highlighted both progress and challenges in addressing climate change. An important deal was struck for wealthy countries to compensate poorer nations for climate-induced damages. However, the summit fell short of securing a formal commitment to reduce fossil fuel usage, critical for averting climate disasters?.

Pakistan's plight underscores the urgent need for global and local action against climate change. This entails not only providing immediate humanitarian relief but also addressing the root causes through significant reductions in greenhouse gas emissions, particularly by the Global North. The call to action extends beyond the political realm, emphasizing

Photo Credit: Mohammed Salem/Reuters

António Guterres, the United Nations secretary general, urged world leaders at the COP27 climate summit to accelerate their countries' efforts to address climate change or face "climate hell."

the importance of collective responsibility towards sustainable practices and disaster preparedness to mitigate the effects of climate change and prevent further displacement?.

The situation in Pakistan and worldwide is a clarion call for more decisive action in combating climate change and managing climate-induced migration. It stresses the necessity for global solidarity and a unified approach to ensure a sustainable and equitable future for all.

Rehabilitating IDPs and migrants in Pakistan

The gaps in Pakistan's disaster response, particularly concerning internally displaced people (IDPs) from climate disasters, highlight significant areas for improvement. Despite efforts like the Responding to Pakistan's Internally Displaced (RAPID) program, which aims to deliver aid quickly and efficiently to those displaced by conflict or natural disasters, challenges remain in sustaining long-term support and recovery for IDPs?.

One primary gap lies in the follow-up and rehabilitation phase for IDPs. While immediate relief efforts are often effective in providing short-term assistance, there is a notable lack of sustained support to ensure IDPs can return to a semblance of normalcy. This includes rebuilding homes, restoring livelihoods, and providing continued healthcare and education services. The RAPID program, despite its successes, underscores the need for extended support beyond initial disaster response to address these long-term needs.

Improving disaster response for IDPs requires several key actions:

Enhanced Coordination: Better coordination between government bodies, local NGOs, and international donors is crucial. This would ensure a more unified and effective response, minimizing overlaps and gaps in aid

distribution.

Capacity Building: Strengthening the capacity of local organizations and communities to manage disaster response and recovery efforts. This includes training in emergency response, disaster risk reduction, and management skills to ensure communities are better prepared and more resilient.

Sustainable Development Focus: Integrating disaster response with sustainable development goals to ensure that recovery efforts contribute to long-term resilience and development. This could involve nature-based solutions for flood management and efforts to address climate change impacts more broadly.

Community Involvement: Involving affected communities in the planning and implementation of disaster response and recovery efforts. This ensures that the solutions are tailored to the specific needs and contexts of the IDPs, enhancing the effectiveness and sustainability of the interventions.

Policy and Legislative Support: Strengthening policy and legislative frameworks to support disaster risk reduction, climate change adaptation, and the protection of IDPs. This includes ensuring that policies are in place to support the long-term recovery and rehabilitation of displaced populations.

Addressing these gaps and implementing these recommendations requires a concerted effort from all stakeholders, including the government, non-governmental organizations, communities, and international partners. By focusing on long-term recovery and resilience-building, Pakistan can improve its response to internal displacement caused by climate

disasters and other emergencies.

Implementing Nature Based Solutions

To mitigate the impacts of climate change and lessen internal migration due to natural disasters like floods, local authorities in Pakistan can adopt a range of nature-based solutions. These strategies not only reduce the risk of disasters but also contribute to the resilience of ecosystems and communities.

Reforestation and Afforestation: Planting indigenous trees and restoring forests can help manage floodwaters, stabilize soil, and increase water infiltration. Forests act as natural barriers against floods and restore natural water cycles?. The Billion Tree tsunami project started under Imran Khan and greening initiatives by present PM Shahbaz Sharif must continue and aim to do better as Pakistan's deforestation rate is one of the highest in Asia.

Wetland Restoration: Restoring wetlands is crucial for flood management. Wetlands act like sponges, absorbing and storing excess floodwater, which can reduce the severity of floods downstream. Additionally, they contribute to biodiversity and help purify water?.

Sustainable Land Management: Practices such as terracing, contour farming, and maintaining vegetation cover can significantly

reduce soil erosion and water runoff, making landscapes more resilient to flooding. These practices also improve agricultural productivity, which can reduce the need for migration due to livelihood loss?.

Green Infrastructure: Implementing green roofs, permeable pavements, and urban trees can help manage stormwater, reduce urban heat islands, and increase urban biodiversity. Green infrastructure helps cities to absorb rainwater, reducing the risk of urban flooding and making cities more livable for their inhabitants?.

Recharge Pakistan Program: A collaborative initiative involving the Ministry of Climate Change,

> “By implementing these nature-based solutions, Pakistan can significantly reduce the vulnerability of its population to climate-induced hazards, thereby lessening the need for internal migration. These solutions not only provide immediate benefits in terms of disaster risk reduction but also offer long-term advantages for ecological restoration, economic stability, and the well-being of the population”

Federal Flood Commission, and WWF-Pakistan, focuses on increasing water storage and groundwater recharge through the management of wetlands, floodplains, and hill torrents. It also aims to build the resilience of vulnerable communities through climate-adapted, community-based natural resource management. This program represents a significant shift towards ecosystem-based adaptation strategies for flood risk management and climate change adaptation in Pakistan?.

By implementing these nature-based solutions, Pakistan can significantly reduce the vulnerability of its population to climate-induced hazards, thereby lessening the need for internal migration. These solutions not only provide immediate benefits in terms of disaster risk reduction but also offer long-term advantages for ecological restoration, economic stability, and the well-being of the population.

Future impacts and required actions

The future impacts of climate change are projected to be profound and far-reaching, affecting every aspect of our environment, economies, and societies. With increasing temperatures, rising sea levels, and more frequent and severe weather events, the implications for human migration are particularly concerning.

Climate change is expected to become a major driver of migration, as more people are forced to leave their homes due to environmental factors such as floods, droughts, and hurricanes. This phenomenon, often referred to as climate migration, will likely exacerbate existing challenges related to displacement, resource scarcity, and social inequality.

> With the upcoming monsoon season in 2024 and other climate impacts, authorities in Pakistan must work collaboratively to minimize the plight of existing and potentially displaced affected populations by making these interventions which are geared towards both the short-term relief and long-term rehabilitation of those displaced, which includes proper resettlement and recovery

Globally, the future impacts of climate change on migration are expected to be significant. The World Bank estimates that by 2050, there could be as many as 143 million climate migrants within Sub-Saharan Africa, South Asia, and Latin America alone, due to factors such as water scarcity, crop failure, sea-level rise, and storm surges. These migrations could lead to increased urbanization pressures, social tensions, and challenges in humanitarian assistance.

To address climate migration both globally and in Pakistan, comprehensive policy interventions are needed. These interventions should encompass creating legal frameworks that recognize and protect climate migrants, enhancing international cooperation to share responsibilities, and ensuring financial mechanisms are in place to support adaptation and mitigation strategies. At the national level, Pakistan needs to focus on building resilient infrastructure, implementing nature-based solutions for disaster risk reduction, and improving community preparedness and response mechanisms. It is crucial to recognize the forced nature of climate migration, understand the diverse patterns of movement, and address the underlying vulnerabilities that drive migration. Strengthening the social, economic, and environmental resilience of communities can mitigate the impacts of climate change and reduce the necessity for migration as a survival strategy?.

With the upcoming monsoon season in 2024 and other climate impacts, authorities in Pakistan must work collaboratively to minimize the plight of existing and potentially displaced affected populations by making these interventions which are geared towards both the short-term relief and long-term rehabilitation of those displaced, which includes proper resettlement and recovery.

The Situation in Pakistan

Pakistan, particularly vulnerable to climate change due to its geographical location and socio-economic fragility, has already experienced significant climate-induced migration. The country has faced devastating floods, including the catastrophic flood event of 2010 and more recently in 2022, leading to large-scale displacement. With the Indus River system being critically important for Pakistan's agriculture and water resources, the country's dependency on climate-sensitive sectors further heightens its vulnerability.

What Needs to Be Done

Global Actions:

Mitigation: To reduce the severity of future climate impacts, there is an urgent need for global efforts to reduce greenhouse gas emissions. This involves transitioning to

renewable energy sources, enhancing energy efficiency, and promoting sustainable land-use practices.

Adaptation: Investments in climate adaptation measures are crucial to enhance the resilience of vulnerable communities. This includes infrastructure improvements, disaster risk reduction, and the development of early warning systems.

Support for Climate Migrants: Establishing legal frameworks and support systems for climate migrants can help manage the challenges associated with displacement. This includes recognizing climate migration in international law and providing pathways for legal migration.

Actions in Pakistan:

Ecosystem-Based Adaptation: Implementing nature-based solutions, such as reforestation and wetland restoration, can reduce vulnerability to climate impacts and benefit biodiversity.

Infrastructure Resilience: Building resilient infrastructure that can withstand extreme weather events is critical to reducing the impact of disasters on communities.

Community Preparedness: Strengthening local capacities through education, training, and resources is essential for enhancing community resilience to climate impacts.

Policy and Planning: Developing and implementing comprehensive policies that integrate climate change adaptation and disaster risk reduction strategies at all levels of governance will be key to managing the impacts effectively.

In conclusion, the future impacts of climate change on migration necessitate immediate and concerted efforts globally and particularly in countries like Pakistan. By addressing the root causes of climate change, enhancing adaptive capacities, and providing support for those affected by climate-induced displacement, the global community can work towards a more resilient and sustainable future for all.■

Dr. A. A. Quraishy

Manghopir's Crocodile Cult

Manghopir, a stone's throw from Karachi, is the only mausoleum in Asia where the cult of crocodile worship has been practiced through centuries

Although the arrival of a saint somewhere in the Middle East was only some centuries old, the abode of the marsh crocodiles, in the well known "Mugger pit" could well be forty to fifty million years old. In the Mesozoic era, while the earth was young and geological changes were in the process, Hub River flowed in the region with its load of freshwater flora and fauna with the crocodiles.

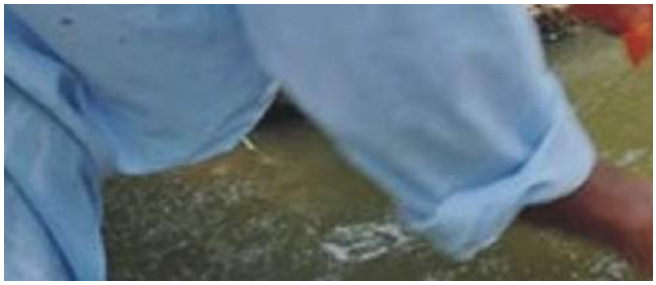
With constant geologic upheavals and the topographical rise and fall, which still goes on, the river changed its course. The spot being the deepest in the recent earth structure, retained the reptiles that subsisted on the aquatic fauna with wild grasses and bush that kept the pond tolerably cool for the cold-blooded crocodiles.

In the neighboring spring, the subterrarian strata kept the rise of temperature slow, because it emerged from the deep layer of the earth in this volcanic stratum. A slightly cold spring still flows from the earth that refills the pit, fit for the crocodiles to live. That gave rise to the "Garam Chashma" (lit. hot spring) and "Thanda Chashma" (lit. cold spring) lore where sick still bath seeking cure from the spring water that has the added solace of the Pir Baba resting nearby.










The saint later known as Hazaat Khwaja Hasan Maroof Sakhi Sultan Baba lived around this tranquil, calm spot to preach Islam. When the Arabs came with Mohammad Bin Qasim along with their soldiers

they scattered date palm seeds along the Baluchistan coast, which sprouted and covered the belt with date palm trees that are still the mainstay of the residents. They settled down in the coastal belt and their progeny still reside in the area.

One of the reasons of devotion to crocodiles was the belief of the Africans that they were special from the days of Pharaohs. As the word of the saint spread, some of them shifted in this fertile valley for pastoral life and used to pay their respect to this blessed soul, who laid a pious life and preached the faith of the prophets.

> “Legend holds that eventually, Mangha left his nefarious profession and became the disciple of the holy man. He turned into a Muslim and served the saint faithfully and practiced what the holy man preached”

In this wilderness, dacoits and pirates also lived; one of them was a well-known dangerous one by the name of Mangha. Mangha ruled with sword and spear as his means of livelihood. He threatened the saint several times to move away and to stop his preaching, but his persistent refusal convinced him of his being harmless. So he left him alone but as the legend goes, he also listened to his preaching which convinced him that he was preaching peace and human welfare. Legend holds that eventually, Mangha left his nefarious profession and became the disciple of the holy man. He turned into a Muslim and served the saint faithfully and practiced what the holy man preached.

Before he died, he advised that the dacoit turned into a dove need not to be expelled but be allowed to continue the noble mission. When he was buried in this locality, Mangha was buried beside his

hermit mentor.

The people built a mausoleum around them, where both lie under the dome. Since the saint fed the crocodiles, the followers considered them sacred, and the trend continues.

Devotees commemorate an annual festival lasting for four days in which they sing, dance, and perform "dhamal." The dance is accompanied with the beating of drums, playing jingles. They don colorful attire and recite hymns – all marching slowly for hours in trance to reach the crocodiles where they offer sweets, shower rose petals and when the "Mor Sahib"—the largest of the crocodiles accepts their offering, they consider it a great honor and think good fortune will bring prosperity.

Zikries is an offshoot of this tribe that are Muslims but a different class: they do not perform prayer in the Muslim way but congregate to sing hymns and other devotional chanting.

The crocodiles have had hard times in the last fifty years, when the silt turned the depth of water unlivable for the reptiles. Consequently, they started dying; their number was reduced to three when the scribe intervened through the SPCA—the society that took care of animals in distress. The chairman of the society, the commissioner for Karachi came to the rescue of the sacred animals. The pit was made deeper, and the scribe arranged better breeding facilities of the remaining three and supervised

“The crocodiles have had hard times in the last fifty years, when the silt turned the depth of water unlivable for the reptiles”

> “Four hatchlings were fed nourishing food, kept in comfortable temperature until they were three years old. At this age they were returned to the main pool. The present population is over a hundred. The faithful has enlarged the resting arena where they sum themselves. Years of nonviolent behavior of the keepers has calmed them down; they have never attacked any human so far”

the nesting technique. He advised the keeper to look after the hatchlings when they emerged from the nest.

Four hatchlings were fed nourishing food, kept in comfortable temperature until they were three years old. At this age they were returned to the main pool. The present population is over a hundred. The faithful has enlarged the resting arena where they sum themselves. Years of nonviolent behavior of the keepers has calmed them down; they have never attacked any human so far.

The festivity songs still carry their ancestral African color: the drumbeat, the dance style and communal singing in soulful chorus is captivating. Film makers arrive from outside the country to show this strange cult of crocodile worship that still has the stamp of ancient African touch, a unique flavor that has no parallel in Asia or in any other community. ■

Dr. Farrukh Chishtie

Rethinking Green Initiatives: The Case for Indigenous Over Exotic in Pakistan's Plantation Drives

In a recent drive led by Maryam Nawaz, Chief Minister of Punjab, Pakistan embarked on an ambitious tree-planting initiative planting some exotic species, sparking a crucial dialogue on the ecological impact of using exotic versus indigenous species for reforestation.

In recent times, Pakistan has witnessed a significant push towards environmental conservation, notably through plantation drives aimed at increasing the country's forest cover. While these efforts are commendable for their intention, the recent drive led by Maryam Nawaz, the Chief Minister of Punjab, has sparked a conversation about the sustainability and ecological impact of planting non-native species, such as Araucaria, in local ecosystems. This initiative, part of a broader environmental campaign, requires a strategic revision to align more closely with eco-friendly and sustainable practices by focusing on indigenous species.

The Importance of Indigenous Species

Planting native species offers a myriad of benefits, from ensuring the stability and health of ecosystems to providing habitats for local wildlife. Indigenous trees are naturally adapted to the local climate and soil conditions, making them more resilient to diseases, pests, and environmental stresses. This adaptability not only contributes to the longevity and success of reforestation efforts but also minimizes the need for maintenance and intervention.

Moreover, native species play a crucial role in maintaining biodiversity. They provide essential food and habitat for local fauna, contributing to a balanced and functioning ecosystem. In contrast, exotic species, while sometimes aesthetically pleasing, may not offer the same ecological benefits and can even become invasive, threatening local biodiversity.The plantation of Eucalyptus and Paper Mulberry, particularly in urban areas like Karachi and Islamabad, has been disasters due to several reasons:

- **Eucalyptus:** While fast-growing and used for quick afforestation, Eucalyptus trees are known to be water-intensive, potentially lowering groundwater levels. They also release substances that can inhibit the growth of underbrush and nearby plant species, impacting biodiversity.
- **Paper Mulberry:** Introduced for its rapid growth and ornamental value, Paper Mulberry has become invasive in many parts of Islamabad, causing allergic reactions among the population during the pollen season. It outcompetes native species and alters local ecosystems.

Focusing on indigenous species ensures the sustainability of plantation efforts, supports local ecosystems, and reduces the risk of invasive species proliferation. It's crucial for future plantation drives to prioritize these native species to ensure the ecological and environmental health of the region.

To address ecological balance and biodiversity in Pakistan, particularly in Karachi, Baluchistan, and Islamabad, it's crucial to focus on planting indigenous species. These species not only adapt better to the local environment but also support local

> The advice given by Subh-e-Nau to a previous Prime Minister, Shaukat Aziz, serves as a valuable lesson. Instead of opting for an exotic plant, and based on this expert advice, Aziz chose to plant a Kachnar sapling, an indigenous species known for its ecological benefits and aesthetic value

ecosystems. Here's a list of recommended species based on the provided text:

Karachi and Baluchistan:

1. **Acacia Senegal** *(Local Name: Khor)* - Known for its drought resistance and ability to improve soil quality.
2. **Acacia Nilotica** *(Local Name: Kikar or Bhabar)* - Provides valuable shade and is important for soil conservation.
3. **Prosopis Cineraria** *(Local Name: Kandi or Jandi)* - Plays a crucial role in the desert ecosystem, providing food and shelter for wildlife.

Islamabad and Northern Forests:

1. **Pine** *(Local Name: Cheer)* - Essential for soil conservation and water regulation.
2. **Fir** - Contributes to the biodiversity of mountainous regions and provides habitat for numerous species.
3. **Deodar** - Valuable for its timber and aesthetic beauty, it plays a key role in sustaining the Himalayan forest ecosystems.
4. **Kail** *(Blue Pine)* - Important for its wood and as a source of turpentine.
5. **Shirin** - Adds to the landscape's

aesthetic and supports local biodiversity.
6. **Sumbul** - Its seeds have economic value, and it contributes to the local flora.
7. **Banyan Tree** *(Local Name: Bur)* - A historic and cultural symbol, providing extensive shade and supporting a wide range of wildlife.
8. **Peepal** - Holds cultural significance and is known for its environmental benefits, including air purification.
9. **Sukh Chain** - Known for its beautiful flowers and shade-giving properties.
10. **Kachnar** - Offers both ecological benefits and is used locally for its edible flowers.
11. **Local Mulberry** - Its fruits have medicinal properties, and the tree supports local wildlife.

Learning from the Past: The Example of Shaukat Aziz

The advice given by Subh-e-Nau to a previous Prime Minister, Shaukat Aziz, serves as a valuable lesson. Instead of opting for an exotic plant, and based on this expert advice, Aziz chose to plant a Kachnar sapling, an indigenous species known for its ecological benefits and aesthetic value. This decision underscored the importance of selecting native flora for plantation drives, showcasing a commitment to environmental sustainability and the promotion of local ecosystems.

Advocating for a National Day of Plantation

The proposal to institutionalize a National Day for Plantation is both timely and necessary. Already approved, designating a specific day for nationwide tree-planting activities not only fosters a sense of unity and purpose among the populace but also highlights the importance of environmental stewardship as a national priority. Such an initiative, coupled with a focus on planting indigenous species, can significantly contribute to Pakistan's reforestation goals, enhancing both the environment and the well-being of its communities.

Subh-e-Nau's advocacy for this cause and its emphasis on year-round planting activities are commendable steps towards making Pakistan a cleaner and greener nation. By integrating this approach with existing government efforts like the present plantation campaign, Pakistan can make substantial progress towards achieving its forest cover targets.

Recommendations for Future Plantation Drives

To maximize the impact of future plantation drives, it is essential to prioritize the planting of indigenous species. This strategy not only supports local ecosystems but also aligns with global best practices for environmental conservation. Key recommendations include:

- **Incorporating Indigenous Species into National Policies:** Legislation should explicitly advocate for the prioritization of native species in all plantation activities. This would ensure a unified approach to reforestation efforts across the country.
- **Public Awareness Campaigns:** Educating the public about the benefits of indigenous trees can foster a greater appreciation for local ecosystems and encourage community involvement in plantation drives.
- **Infrastructure for Sustainability:** Ensuring the availability of open spaces for planting and the provision of necessary resources, such as water for saplings, can enhance the success of plantation activities.
- **Engagement and Collaboration:** Involving various stakeholders, including government departments, local communities, and educational institutions, can amplify the impact of plantation drives and promote a culture of environmental responsibility.

While the recent plantation drive by Maryam Nawaz represents a commendable effort towards environmental conservation, it also presents an opportunity for reflection and strategic adjustment. By shifting the focus towards indigenous species, Pakistan can not only enhance its ecological sustainability but also foster a deeper connection between its people and the natural world. Through collective action and a commitment to eco-friendly practices, the country can make significant strides towards a greener future.■

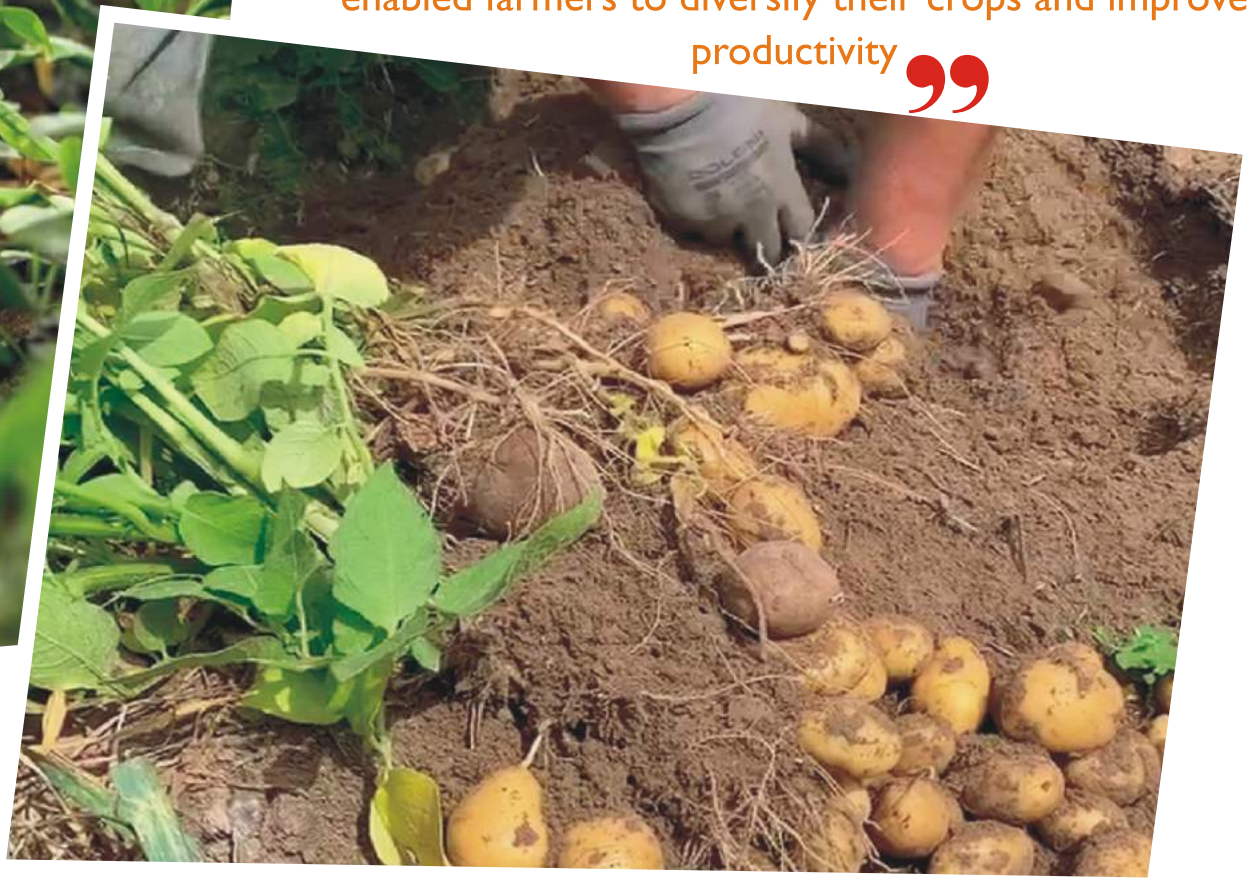
Abdul Aleem Ch

Shifting Agricultural Landscape: Changes in Crop Patterns in Pakistan's Central Punjab

Recent shifts in crop patterns in Pakistan's Central Punjab, driven by climate change, technology, market demands, and government policies, are impacting its agricultural sector and broader economic, environmental, and social dynamics.

Pakistan's Central Punjab region has long been the agricultural heartland of the country, known for its fertile lands and diverse crop production. However, in recent years, this region has witnessed significant shifts in its crop patterns due to various factors such as climate change, technological advancements, market demands and government policies. These changes have not only impacted the agricultural sector but also have broader implications for the economy, environment and livelihoods of the people in the region.

> The adoption of modern agricultural technologies, such as high-yielding crop varieties, mechanized farming equipment and efficient irrigation systems, has Sinfluenced farmers' decisions regarding crop selection. These technologies have enabled farmers to diversify their crops and improve productivity



Factors which caused the change

1.Climate Change:

Central Punjab, like many other regions of Pakistan, is experiencing the effects of climate change, including unpredictable weather patterns, erratic rainfall and rising temperatures. These changes have forced farmers to adapt their crop choices to withstand new environmental challenges.

2. Technological Advancements:

The adoption of modern agricultural technologies, such as high-yielding crop varieties, mechanized farming equipment and efficient irrigation systems, has Sinfluenced farmers' decisions regarding crop selection. These technologies have enabled farmers to diversify their crops and improve productivity. For example, just a decade ago, human efforts were hhe main force in the agriculture like sowing and harvesting the crops of wheat, rice, maize and potato. But today it has changed drastically and major workload has been shifted to the modern machinery.

3.Market Demands:

Shifts in consumer preferences, both domestically and internationally, have influenced crop patterns in Central Punjab. As demand for certain crops rises, farmers adjust their production accordingly to capitalize on market

opportunities and maximize profits. Once central Punjab was considered to be the home of the best cotton in the world, however, today it has shifted more towards potato and maize crops.

Changes in Crop Patterns:

1.Shift from Traditional to Cash Crops:

Traditionally, Central Punjab has been dominated by the cultivation of wheat, rice, and sugarcane. However, there has been a noticeable shift towards cultivating cash crops such as rice, maize and vegetables. This transition is driven by higher profitability and less water-intensive cultivation methods for cash crops.

2.Adoption of Climate-Resilient Crops:

In response to changing climatic conditions, farmers are turning to crops that are more resilient to droughts, floods and pests. For instance, the cultivation of drought-tolerant varieties of maize and cotton has increased in areas prone to water scarcity.

3.Off season crops:

The cultivation of crops outside the regular cropping calendar when supply is low and prices are high is also in trend in this region and people spend more money on building the large-scale greenhouses to grow such crops. Ladyfinger, watermelon, melon and tomato are a few examples of this trend.

Shift in crops has associated challenges as well like economic Impacts. The changing crop patterns have implications for the economic dynamics of the region, affecting income levels, employment opportunities and rural livelihoods. The shift towards cash crops has the potential to increase farmers' incomes but also exposes them to market risks. For example, in the year 2021, farmers earned record profits from maize crop and they switched their trend from wheat maize to gain more profits. However, in the year 2023, maize farmers witnessed big upsets when maize crop prices suddenly dropped due to demand and supply issues. While diversification and adoption of climate-resilient crops can mitigate

environmental risks, intensive cultivation practices associated with cash crops may lead to soil degradation, water scarcity, and loss of biodiversity if not managed sustainably.

Changes in crop patterns can influence social dynamics within rural communities, affecting land tenure systems, access to resources and gender roles in agriculture. Moreover, smallholder farmers face challenges in accessing markets and adopting new technologies.

> “The changes in crop patterns in Pakistan's Central Punjab reflect the complex interplay of various factors shaping the agricultural landscape. While these changes present opportunities for increased productivity and resilience, they also pose challenges related to sustainability, equity, and food security”

Policymakers need to formulate agricultural policies that promote sustainable intensification, support smallholder farmers, and incentivize climate-smart agriculture. Additionally, investments in infrastructure, research, and extension services are essential to facilitate the transition to new crop patterns.

The changes in crop patterns in Pakistan's Central Punjab reflect the complex interplay of various factors shaping the agricultural landscape. While these changes present opportunities for increased productivity and resilience, they also pose challenges related to sustainability, equity, and food security. Addressing these challenges requires concerted efforts from farmers, policymakers, researchers, and other stakeholders to ensure a more resilient and inclusive agricultural sector in the region. ■

Mrs. Shahida Kausar Farooq

Pakistan needs realistic austerity measures

As the dust settles following the February 8 general elections in Pakistan, with a familiar federal setup resuming power amidst severe economic critiques and a staggering inflation peak of 38% in May 2024, the pressing need for stringent austerity measures, as pledged with a 15% expense cut in February 2023, becomes undeniably crucial to alleviate the national exchequer's burden and stabilize the economy.

In the aftermath of the February 8 general elections in Pakistan, and with new governments having taken charge in respective provinces and at the federal level,almost the same setup has taken charge of the country at the federal level, which came into power after the no-confidence motion in April 2022. This setup has been criticized for its infamous decisions in economic sectors, resulting in all-time high inflation in the country, which peaked at 38% in May 2024.

In February 2023, the Pakistan government announced that it would cut its expenses by 15% to help reduce the burden on the national exchequer.Then Prime Minister Shehbaz Sharif asked his ministers and advisers to fly economy class and forgo luxury cars and their salaries as part of an austerity drive that will save the government $766 million a year."These austerity measures will save us 200 billion rupees annually," Sharif told a news conference in Islamabad. He said all federal ministries and government offices had been directed to reduce expenditure by 15% and that he had asked his ministers and advisers to forgo salaries, allowances, luxury cars, foreign trips, and business class travel. Though these decisions looked lucrative in a country not famous for cutting its government expenses, unfortunately, they did not bring any positive change to its economy.

Since Shehbaz Sharif has again taken charge as the Prime Minister of Pakistan with a much better mandate and support, it is high time that he turned to austerity and simplicity to showcase the government's resolve to solve the country's economic woes. Austerity measures are often adopted to stabilize the economy and restore investor confidence. Austerity usually involves cuts to public sector wages and employment.

Here, we suggest some realistic small steps for austerity and simplicity that may bear significant results in overcoming our economic crisis.

1-Ban on luxury dinners and lunches.

The government should discourage hosting luxury dinners and lunches, which have become a norm in the

> Pakistan's prime ministers and presidents are known for touring other countries with big delegations, which burdens the national exchequer. Mian Shehbaz Sharif should not only have a cut on the number of such tours but also should shrink the size of the delegations to show some seriousness in solving the economic problems of the country

public sector. These are only showpiece networking events that cost hundreds of thousands of rupees for nothing. We need to change the culture to help reduce the burden on a commoner's pocket.

2-Reducing the number of government vehicles

A federal minister in Pakistan keeps a convoy of at least 3 to 4 luxury cars to roam around during and even after office hours. Similarly, people in the administration are used to having dozens of vehicles for official and personal use. This trend should be discouraged, and the number of vehicles assigned to the ministers, administrators, and other sectors should be curtailed. This will help save fuel costs for the national exchequer and reduce air pollution, another big issue in the country.

3-International tours

Pakistan's prime ministers and presidents are known for touring other countries with big delegations, which burdens the national exchequer. Mian Shehbaz Sharif should not only have a cut on the number of such tours but also should shrink the size of the delegations to show some seriousness in solving the economic problems of the country.

4-Saving the energy

Energy costs are peaking in the country with every coming day and have reached the highest level in the region. The government sector is famous for using energy resources in abundance. Buildings like the President's house, Prime Minister's, Chief Minister's houses, governors' houses, and assemblies' buildings use electricity resources indiscriminately. The Prime Minister should have an exclusive check on this trend.

Pakistan's adoption of austerity measures will reflect a commitment to addressing economic challenges and achieving fiscal sustainability. While these measures may be necessary for long-term stability, careful planning and consideration of their impact on various sectors are crucial.■

Sultan Kiani

CDA is bringing Sustainable Public Transportation to Islamabad

Islamabad undoubtedly is one of the world's most beautiful capitals. Well-known for its natural beauty, the city has modern buildings, world class road network and elegant public parks. Nevertheless, the city has also been ranked as the 9th most polluted federal capitals in the world!

According to IQAir, New Delhi (India) is ranked world's no.1 capital with the worst air quality. The PM2.5 concentration in Indian Capital is found to be 92.7µg/m3 which is extremely unhealthy. Ranked at no.9, PM2.5 concentration in Islamabad is 42.4 µg/m3; still considered unacceptably injurious to public health.

How did this happen?

Islamabad is a well-planned city with adequate trees and greenbelts. Unlike other cities, there are fewer industries, and its population is just 1.2 million as compared to Lahore with 14 million people. Then how has it become so polluted? The answer lies within poor urban planning. The Capital Development Authority (CDA) has heavily invested in extensive road infrastructure development. However, public transportation remains neglected, forcing citizens to use private vehicles. The concept of sustainable transportation has never been applied in the past. Now we have good news for the citizens of Islamabad; CDA is all set to launch 2 new projects aiming to promote public transport usage. These include Islamabad Bus Service (IBS) and Bicycle Lane Project (BLP). Let us review and see how these green initiatives may improve Islamabad's air quality:

Severe traffic congestion observed at Islamabad urban highways

Islamabad Bus Service:

There was no mass transit system in the Capital before 2015 when the twin cities' first Bus Rapid Transit was developed. This red line BRT is called 'Pakistan Metro Bus System' which is a joint venture of Punjab Government and CDA as it plies between Rawalpindi (Punjab) and Islamabad (ICT). Expanding the mass transit network in both (twin) cities was part of the plan. Unfortunately, the projects got delayed and we didn't see any further development in urban mass transit after that. It is until 2022 when the twin cities second and Islamabad's first BRT began its operation was followed by 2 new feeder routes. Long awaited Islamabad Bus Service project was reviewed and approved the same year.

After extensive delays, the Islamabad Bus Service project is near completion. National Radio & Telecommunication Corporation

Islamabad Bicycle Lane Project is a network of 374 kilometers long dedicated tracks for paddle and e-bikes

(NRTC) on behalf of CDA was asked to procure 160 Plug-in Electric Buses. The first batch of 30 buses is ready to be shipped and expected to reach Islamabad by April 2024. After that, 130 more buses will be shipped in 2 batches. These are clean energy zero emission buses. CDA has already planned 14 urban and suburban routes. The bus service will not only facilitate the existing metro bus commuters but will also encourage more citizens to opt for affordable eco-friendly transportation.

Bicycle Lane Project:

Facilitating bicycle riders is part of Islamabad's Mast Plan. This lingering project is also getting back on track! Bicycle Lane Project (BLP) is a network of 374 kilometers long dedicated tracks for paddle and e-bikes. The construction work on BLP has recently begun from Blue Area. Islamabad will have safe bicycle lanes all over the city in the next 18 months. A total number of 150 parking stations with bike rental facilities are included in the project. A CDA official ensured that the administration will strictly enforce laws to prevent misuse of the proposed bike lanes. Other than providing a safe track for local cyclists, BLP will also complement Islamabad Bus Service network. The idea is to let you take BRT on a long and busy route, followed by taking a feeder bus, and then ride a rental bicycle to the closest point of your destination. This system will encourage eco-friendly public transportation usage to make Islamabad a clean and green city again!

“Other than providing a safe track for local cyclists, BLP will also complement Islamabad Bus Service network. The idea is to let you take BRT on a long and busy route, followed by taking a feeder bus, and then ride a rental bicycle to the closest point of your destination”

Room for improvements:

It sounds like a remarkable public transport revolution is on the horizon. Nevertheless, it's far from being perfect and needs further measures to develop a practical mass transit system in the capital city. We have identified some problems with recommended solutions:

- **Public Transport for Rawalpindi:** Islamabad and Rawalpindi are known as 'twin cities as both are closely connected. There's just one BRT line (Pakistan Metro Bus System) for the city of 2.4 million people. Thousands of commuters move between twin cities, majority of them would use private cars and motorbikes due to non-availability of city bus service in Rawalpindi. Punjab Mass Transit was supposed to launch Speedo Bus service in Rawalpindi 8 years ago but no progress has yet been made. It's important for both cities' administrations to coordinate, plan and integrate Islamabad Bus Service with Rawalpindi Metro and Speedo Bus services to boost public transport ridership. Other than plying mini buses on feeder routes, Punjab government should also launch standard size city buses on major routes between Rawalpindi and Islamabad including Peshawar Road, Jehlum Road and old Airport Road to facilitate thousands of commuters. A pilot project of bicycle track similar to Islamabad's BLP may also be implemented in Rawalpindi.
- **Park & Ride Facilities:** This facility is built for commuters from remote areas where plying the feeder bus service is unfeasible and the distance is too far to be covered by pedal bicycle. They can park their private car or motorbike at the dedicated parking area near a practical walking distance from a bus stop and then ride public transport to reach their destination. The idea was conceived but never implemented. Now it is the need of the hour to provide safe, secure and affordable parking facilities at different points to promote green transportation in twin cities.
- **Smart Ride-Sharing:** Online taxi services should be encouraged to offer pooled rides between metro stations to different areas during the peak hours. This model could particularly be successful in remote towns and housing societies to provide metro stations to doorstep transport service.
- **Stringent Law Enforcement:** The Police should also focus on implementing traffic laws. CDA Bus stops are usually occupied by illegally parked cars and taxis on Islamabad Expressway causing inconvenience for commuters and the bus drivers. Traffic police should make sure to keep all the bus stops clear. Similarly, they need to formulate a protocol to block unauthorized vehicles from entering the proposed BLP tracks. ■

Rt. No.	Route
1	Police Foundation - Margalla Railway Station - Potohar
2	IIU - Shifa Hospital - I-8 Potohar
3-A	PIMS - F-6 - F-7 - Secretariat
3-B	PIMS - Faisal Mosque - Margalla Road - Secretariat
4	PIMS - G-7 - Aabpara - Nadra Chowk
5	D-12 - G-10 Metro Sation
6	PIMS - Golra Sharif
7	PIMS - G-9 - G-10 - G-11 Markaz
8-A	Taramari - Park Road - Aabpara
8-B	Khanna - Taramari - Nilore
9	Pirwadhai - IJP - Faizabad
10	N-5 Station - B-17
11	N-5 Station - I-16
12	PIMS - Zafar Chowk - NDU - E-9

Dr. Farrukh A. Chishtie
Prof. M.V. Ramana

Tripling nuclear energy by 2050 will take a miracle, and Miracles don't happen

It is time to abandon the idea that further expanding nuclear technology can help with mitigating climate change.

The recent COP28 climate conference held in Dubai saw a concerted effort by a few governments to promote expanding nuclear energy as a solution to the climate crisis. Led by the US Department of Energy, a pledge to triple nuclear energy capacity by 2050 attracted a mere 22 countries. The contrast in ambition and global support with an agreement on tripling renewable energy and doubling energy efficiency by 2030—signed by 123 countries, and enshrined in the final outcome document—couldn't be greater. But even this level of ambition, i.e., tripling capacity by 2050, is inappropriate when it comes to nuclear energy.

Between 1996 and 2022, the proportion of global electricity generated by nuclear reactors has dropped. This decline stands in sharp contrast to the remarkable upward trajectory observed in renewable energy sources, particularly solar and wind power. Over the same period, the share of global electricity produced by modern forms of renewable energy has gone from a mere 1.2 per cent to 14.4 per cent.

An iStock representative photo of a nuclear power plant with a radioactivity sign

The difference is only set to grow. Investment in renewable energy sources is growing rapidly, reaching a record of , constituting 74 per cent of all power generation investments in 2022, while nuclear and coal accounted for only 8 per cent each. Solar photovoltaics, especially when built at large (utility) scale, has become the least costly option for new electricity capacity in recent years; in 2020, the International Energy Agency pronounced that solar is "the new king of the world's electricity markets".

As of mid-2023, there were just 407 operable nuclear reactors worldwide, which is 31 below the peak of 438 reactors in 2002, with a combined capacity of 365 gigawatts. These reactors are mostly old ones, built decades ago; the average age of the fleet has grown from 11.3 years in 1990 to 31.4 years in 2023. For nuclear energy to even maintain its current level of electricity production, most of these reactors will have to replaced. As detailed below, any attempt to replace nuclear capacity will be exorbitant. Because of these high costs,

and rapid pace of building renewables, nuclear energy can simply not maintain its share of electricity production.

The decline in nuclear capacity is not due to lack of interest from governments. Between 2002 and 2023, there was a so-called nuclear renaissance. In the United States, the Bush administration's 2005 Energy Policy Act offered numerous incentives, such as loan guarantees, to promote nuclear power. Spurred by these incentives, US electricity companies proposed building more than 30 reactors, many of them expected to start operating by 2021. Only four of these reactors proceeded to actual construction but two of these reactors in the state of South Carolina were abandoned after $9 billion was spent because of massive cost increases and time delays. That led the Westinghouse Electric Company, a subsidiary of Japanese company Toshiba and the largest historic builder of nuclear power plants in the world, to file for Chapter 11 bankruptcy protection.

The remaining two reactors were built at the Vogtle site in Georgia. The first of these units began operating in 2023, taking over 10 years from when construction started—well above the "36 months" that the reactor's designer, the Westinghouse company, had promised. Costs rose from an estimate of $14 billion when construction started to over $35 billion. This is in the United States, the country with historically the largest nuclear fleet.

In France, the country with the most reliance on nuclear energy, the Flamanville-3 nuclear reactor is now estimated to cost around $15 billion—four times what was forecasted when Électricité de France began building it. Historically, both in the United States and France, costs have risen as more reactors were built, and so we might expect future nuclear plants to be more expensive.

The other reason to expect future costs to go up is because of the push for small modular reactors (SMRs) to revive the nuclear industry. Small reactors lose out on economies of scale, and therefore start off with an economic disadvantage. Even if their absolute cost is lower than that of a large nuclear reactor, they are more expensive when compared on the basis of how much electricity they can provide (i.e., on a per megawatt basis).

A project involving six NuScale small modular reactors that was proposed to be built in Idaho was estimated to cost $9.3 billion for just 462 megawatts of power capacity. In comparison to the Vogtle project in Georgia, when that project was at a comparable stage—that is, when it was still on paper—the estimate for the UAMPS project is around 250 per cent more than the initial per megawatt cost of the Vogtle project.

SMRs have also suffered construction delays. In Russia, the first SMR that has been deployed is the KLT-40S, based on the design of reactors used in the small fleet of nuclear-powered icebreakers that Russia has operated for decades. Yet, the KLT-40S, which was expected to take three years to build actually took 13 years. That is even more than the large reactors mentioned above.

These delays also underscore what energy analyst Amory Lovins pointed out: "To protect the climate, we must abate the most carbon at the least cost—and in the least time—so we must pay attention to carbon, cost, and time, not to carbon alone." Nuclear power fails both the tests of cost and time. Investing further into nuclear technology with its concomitant loss of time will accentuate the unjust and unequal impacts on countries in the Global South, who are already dealing with severe climate impacts because developed countries like the United States have not reduced their carbon emissions in accord with their financial capacities.

Given these hard economic realities, what explains the pledge put out by the US government? Looking at who signed it and who didn't suggest that the pledge is out there for geopolitical reasons. Note, for example, that Russia and China are missing from the list of signatories to the declaration: China is the country building the most nuclear reactors domestically and Russia is the country exporting the most reactors. No country from South Asia joined this pledge either.

In his essay about miracles, the 18th century British philosopher David Hume wrote "A wise man…proportions his belief to the evidence". (Today, we might say, a wise person proportions their belief to the evidence.) The evidence that nuclear energy cannot be scaled up quickly is overwhelming. It is time to abandon the idea that further expanding nuclear technology can help with mitigating climate change. Rather, we need to focus on expanding renewables and associated technologies while implementing stringent efficiency measures to rapidly effect an energy transition. ■

(Courtesy: Down to Earth)

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Germany's Ambassador to Pakistan **Mr. Bernhard Schlagheck**
CEO Siemens Pakistan, **Mr. Markus Strohmeier**
Consul General of Germany **Mr. Holger Ziegeler**
Administrator Karachi and Minister of Law Govt. of Sindh, **Mr. Murtaza Wahab**
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A Glimpse of Electric Car Charging
at the time of Inauguration.

Scientists fear planetary shift as record ocean heat enters second year

At this time last year, scientists watched in disbelief as the world's oceans surged to record levels of warmth and wondered what could have triggered it. The jump in sea surface temperatures was more dramatic than anything seen before. The scientists explored a link to El Niño, the climate pattern known for warming up the Pacific Ocean, and potential warming influences from diminished shipping liner pollution and a major volcanic eruption. But nothing explained the influx of warmth as it held up for months on end and spread heat waves across nearly all of the oceans' surfaces. Now, the unprecedented streak of ocean heat is entering a second year. Scientists say it could represent a major change to Earth systems that cannot be reversed on any human time scale. That's because what they have seen in the oceans so far "doesn't add up," Gavin Schmidt, director of the NASA Goddard Institute for Space Studies, told The Washington Post. "It could imply that a warming planet is already fundamentally altering how the climate system operates, much sooner than scientists had anticipated," he wrote in a column in the journal Nature. The warming has extended far from an El Niño-influenced swath of the Pacific. Across much of the Atlantic basin, for example, surface temperatures have been running 1 to 2 degrees Celsius (1.8 to 3.6 degrees Fahrenheit) above a 1971-2000 baseline. The anomaly is 3 degrees Celsius (5.4 degrees Fahrenheit) or more in some waters off South Africa, Japan and the Netherlands, according to National Oceanic and Atmospheric Administration satellite data. The ocean heat waves coincide with the warmest conditions ever observed in the atmosphere, too. Last year, average global air temperatures rose higher than humans have ever known, perhaps bringing the planet to its hottest in more than 100,000 years. Climate scientists predict 2024 could be even warmer. But to see such dramatic warming throughout Earth's oceans is even more alarming, given that it takes far more energy to warm water than it does the air, said Celeste Saulo, secretary general of the World Meteorological Organization. "The time scale of the oceans is not as fast as the atmosphere," Saulo said at a news conference. "Once a change is established, I would say it's almost irreversible in time scales that go from centennial to millennial." In its annual State of the Climate report issued on March 19, the organization said many climate indicators last year "gave ominous new significance to the phrase 'off the charts.'" That included unprecedented glacier melt, Antarctic sea ice loss and sea level rise as marine heat waves spread across more than 90 percent of the oceans' surfaces at some point during 2023. The most exceptional warmth hit the eastern North Atlantic, the Gulf of Mexico and the Caribbean, the North Pacific and large areas of the Southern Ocean, the WMO said. Since April, global average sea surface temperatures have hit records every month, with records in July, August and September "by a particularly wide margin," the organization said. The warming of the world's oceans is already having devastating consequences for coral reefs. Fatal levels of heat hit a largely unspoiled section of Australia's Great Barrier Reef this month, a repeat of the bleaching and mortality of corals around Florida last year. There are worries the warming and melting

is pushing a key Atlantic Ocean current system to collapse, though the tipping point at which that might occur is unknown. It would have massive impacts on underwater ecosystems and weather patterns. And there are likely to be cascading impacts on marine life.
(Courtesy: The Washington Post)

Punjab CM Maryam Nawaz to oversee record-breaking tree planting drive

Punjab Chief Minister Maryam Nawaz is set to lead a massive tree planting campaign in Changa Manga, aiming to set a unique record, reported 24NewsHD TV channel Wednesday.
The ambitious plan involves planting one lakh (100,000) saplings in just one minute. This initiative not only represents a significant step towards ecological conservation but also serves as an inspiring example of leadership in climate action.
Maryam Nawaz will personally oversee the event tomorrow, marking a significant moment for the region's reforestation efforts.
The involvement of a large number of students from schools and colleges highlights the educational and community aspect of the campaign, fostering a sense of responsibility and teamwork among the youth.
The Changa Manga forest will witness this historic moment where, under the guidance of Chief Minister Maryam Nawaz, it will transform into a symbol of hope and renewal. The program is organized to not only break records but also to instill a culture of environmental stewardship for future generations.
(Courtesy: 24 News)

At least 35 killed as Pakistan rains collapse buildings, trigger landslides

At least 35 people have been killed and 50 others injured due to heavy rains that have swept Pakistan since February 29, causing several houses to collapse and landslides to block roads, particularly in the northwest, authorities said.
At least 30 rain-related deaths were reported in various areas in the Khyber Pakhtunkhwa province bordering Afghanistan since Thursday night. Many of the fatalities were women and children, the provincial disaster management authority said in a statement on Sunday.
Five people died in the southwestern Balochistan province after the coastal town of Gwadar got flooded, forcing authorities to use boats to evacuate some 10,000 people. Sarfraz Bugti, the chief minister in Balochistan, said on Sunday that 700 homes had been damaged.
Casualties and extensive damage were also reported in Pakistan-administered Kashmir, the National Disaster Management Authority said in a separate statement. Emergency relief was being provided to people in affected areas and heavy machinery was being used to remove debris blocking highways, the agency added.
The Pakistan army has distributed 28 tonnes of food rations to more than 1,300 households and set up medical camps to treat the wounded, Pakistan's Samaa TV reported. The country's Karakoram Highway, which links Pakistan with China, is still blocked in some places due to landslides, according to the spokesperson for the northern Gilgit Baltistan region, Faizullah Faraq. Authorities advised tourists against travelling to the scenic north due to weather conditions. Last week, several visitors were stranded there because of the heavy rains, which came as Pakistan also witnessed severe snowfall. Pakistan is among the 10 most vulnerable countries to climate change despite the South Asian nation's almost zero contribution to global carbon emissions, according to the United Nations. This year, Pakistan is witnessing an unusual delay in winter rains, starting in February instead of November. Monsoon and winter rains cause damage in Pakistan every year. In 2022, climate-induced unusual monsoon rains and flooding in Pakistan killed nearly 1,800 people, affecting about 33 million people and displacing nearly eight million. The rains and floods in 2022 also caused billions of dollars of damage to the country's economy, and in some affected areas, people who lost their homes are still living in makeshift shelters.▪
(Courtesy: Al-Jazeera News)

Creature of the Month

Hummingbird

Hummingbirds are small, colorful birds with iridescent feathers. Their name comes from the fact that they flap their wings so fast (about 80 times per second) that they make a humming noise. Hummingbirds can fly right, left, up, down, backwards, and even upside down. They are also able to hover by flapping their wings in a figure-8 pattern. They have a specialized long and tapered bill that is used to obtain nectar from the center of long, tubular flowers. The hummingbird's feet are used for perching only, and are not used for hopping or walking. Hummingbirds primarily eat flower nectar, tree sap, insects and pollen. The hummingbird's fast breathing rate, a fast heartbeat and high body temperature require that they eat often. They also require an enormous amount of food each day. Hummingbirds have a long tongue which they use to lick their food at a rate of up to 13 licks per second.

Hummingbirds are found only in the Western Hemisphere, from southeastern Alaska to southern Chile, although most live in the tropics. There are more than 300 species of hummingbirds, 12 of which summer in North America and winter in tropical areas. Like other birds, hummingbirds communicate via visual displays. Hummingbirds are very territorial and have been observed chasing each other and even larger birds such as hawks away from their territories. Habitat loss and destruction are the hummingbird's main threats. As hummingbirds are often specially adapted to each unique habitat, each species of hummingbird currently listed as vulnerable or endangered on the IUCN red list are all threatened due to habitat destruction and loss.The earth's changing temperatures due to climate change are affecting hummingbird migratory patterns, causing different species to be spotted in locations well outside their normal range, where it may be harder for them to find food.

Source: http://www.defenders.org/hummingbirds/basic-facts

Flower of the Month

The Rafflesia Arnoldii

The largest and the smelliest flower in the world is the Rafflesia Arnoldii. Also known as the "corpse flower." It is recognized for producing a very strong and horrible odor of decaying flesh and can grow up to 3 feet (1 meter) and weigh up to 11 kilograms (24 lb). Rafflesia Arnoldii is a member of the genus Rafflesia. It is an endemic plant that occurs only in the rainforest of Borneo, Sumatra Island, Thailand, Malaysia, Indonesia and the Philippines. When in bloom, the Rafflesia Arnoldii releases a repulsive odor that attracts insects to pollinate the plant. Rafflesia Arnoldii is a parasitic plant, with no visible leaves, roots, or stem and does not have chlorophyll. It can only be seen when it is ready to reproduce. It attaches itself to a host plant to obtain water and nutrients. Rafflesia Arnoldii is rare and quite difficult to find. It is particularly tricky to locate the flower in forests, as the buds take many months to develop and the flower lasts for just a few days. The flowers are unisexual and therefore proximity of male and female flowers is crucial for successful pollination. These factors make successful pollination an extraordinary event. When Rafflesia Arnoldii is ready to reproduce, a tiny bud forms outside the root or stem of its host and grows over a period of a year. The cabbage-like head that develops eventually opens to expose the flower. The stigma or stamens are attached to a spiked disk inside the flower. A stinking smell of rotting meat attracts flies and beetles to pollinate. To pollinate effectively, the flies and/or beetles must visit both the male and female plants, in that order.

The fruit produced are round lots filled with smooth flesh, including many thousands of hard-coated seeds that are eaten and spread by tree-shrews. The flower of Rafflesia Arnoldii is an iconic symbol of the Southeast Asian rainforest, and is often used in tourist brochures to symbolize the rich biodiversity of the region's forests. The flower has also been represented on Indonesian postage stamps on several occasions.

Source: http://amazinginfos.com

Poem

Mockingbird

Mockingbird, in the tree,
will you spread your wings for me?
Will you sing and call and fly,
through the trees and to the sky,
soaring where none dare to go,
but the mockingbird happens to know,
the secrets to freedom,
the knowledge of life, cutting the air,
sharp as a knife.
He closes his wings, with their felt white tips,
as I put a finger to my lips.
The secrets and knowledge of life itself, are better
sought out by yourself,
but I will find out happily,
if you raise your wings for me.

http://hellopoetry.com/words/26391/mockingbird/poems/

Interesting website

Energy Kids:
www.eia.gov/kids

It is a student-friendly website hosted by the U.S. Department of Energy, Energy Information Administration (EIA). The site includes a variety of information and activities about energy organized in several main categories: What is Energy?, Sources of Energy, Using & Saving Energy, History of Energy, Games and Activities, for Teachers, Related Links, Energy Calculators, and a Glossary. Using Energy Kids provides students with the opportunity to learn about energy while improving research and reading skills.

Quote

Nature's laws affirm instead of prohibit. If you violate her laws, you are your own prosecuting attorney, judge, jury, and hangman.

~ Luther Burbank

International days

April 04 — Vitamin C Day

Load up on citrus fruit, berries and green vegetable for Vitamin C Day; boost your immune system, fight off that cold and feel great!

April 07 — World Health Day

World Health Day is celebrated every year on the founding day of the World Health Organization. Established in 1950 this event has a theme each year to draw attention to a current world health issue.

April 22 — Earth Day

Celebrate and protect our natural environment by taking part in Earth Day. Join with community groups to explore environmental and ecological issues on local and international scales, and work towards making a difference to our habitat.■

Mahvish Chishtie

The Sweet and Sour Superfood

Tamarind, known as "*Imli*" in Urdu, is a popular ingredient in the culinary landscapes of Pakistan and has great health benefits.

Imli, a tropical fruit, encased in a brown, pod-like shell, is not only cherished for its tangy flavor but also for its myriad health benefits. Rich in vitamins, minerals, and plant compounds, tamarind is a versatile ingredient used in a variety of Pakistani dishes, from savory curries to sweet chutneys. Let's delve into the health benefits of this delightful fruit and discover why it's a must-have in every Pakistani kitchen.

Nutritional Profile

Tamarind is a powerhouse of nutrition. It is loaded with essential nutrients including vitamin C, potassium, magnesium, and iron. Additionally, it contains dietary fiber, which aids in digestion, and antioxidants, which protect the body against free radicals.

Digestive Health

Tamarind has been traditionally used in Pakistani households as a digestive aid. Its high dietary fiber content helps in preventing constipation and promotes a healthy gut. Furthermore, the fruit's tartaric acid assists in bile stimulation, which aids in the digestion of fats.

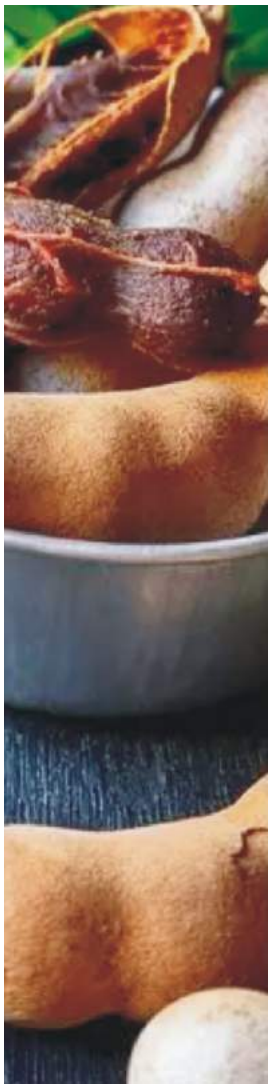
Heart Health

Incorporating tamarind into your diet can have positive effects on heart health. Its potassium content helps in controlling high blood pressure, while the fiber aids in reducing LDL (bad) cholesterol

levels. Studies suggest that tamarind can improve heart health by reducing blood pressure and cholesterol levels, contributing to overall cardiovascular wellness.

Weight Management

Tamarind can be a great addition to weight loss diets. Its high fiber content promotes feelings of fullness, reducing overall calorie intake. Additionally, tamarind contains hydroxycitric acid (HCA), which has been linked to reduced body weight gain by limiting fat storage in the body.



Antioxidant and Anti-inflammatory Properties

Tamarind is rich in antioxidants such as vitamin C, flavonoids, and polyphenols. These compounds fight against oxidative stress and reduce inflammation in the body. Regular consumption of tamarind can help protect against diseases caused by inflammation and oxidative stress, such as heart disease and cancer.

Skin and Hair Health

The vitamins and minerals in tamarind also contribute to healthy skin and hair. Vitamin C, a powerful antioxidant, helps in the production of collagen, improving skin elasticity and reducing signs of aging. Tamarind's antifungal and antibacterial properties can also combat skin conditions such as acne.

How to Incorporate Tamarind in Your Diet

Tamarind's versatility makes it easy to incorporate into your daily diet. It can be used to prepare tangy sauces, marinades, and dressings for salads. Tamarind juice is a refreshing drink, especially during the hot summer months. Moreover, it can add a sour note to soups, curries, and even desserts.

“Tamarind is rich in antioxidants such as vitamin C, flavonoids, and polyphenols. These compounds fight against oxidative stress and reduce inflammation in the body. Regular consumption of tamarind can help protect against diseases caused by inflammation and oxidative stress, such as heart disease and cancer”

Conclusion

Tamarind is more than just a flavor enhancer in Pakistani cuisine; it's a nutrient-dense fruit that offers numerous health benefits. From aiding digestion to promoting heart health and even supporting weight management, tamarind is a true superfood. By incorporating this delicious fruit into your diet, you can enjoy its tangy taste while reaping its health benefits. So, the next time you relish a tamarind-based dish, remember you're not just satisfying your taste buds but also contributing to your overall well-being. ■

Mahvish Chishtie

Tamarind, with its tangy sweetness, is more than just a staple in Pakistani cuisine; it's a treasure trove of health benefits. Here are two recipes for you to enjoy!

Imli aur Khajoor Ki Chutney

Ingredients

1 cup tamarind pulp
½ cup dates, deseeded
¼ cup sugar (adjust to taste)
1 teaspoon salt
1 teaspoon red chili powder
1 teaspoon roasted cumin powder
½ cup water (adjust as needed)

Instructions

Soak the tamarind and dates in water for a few hours until they soften. Blend the tamarind and dates mixture until smooth, adding water as needed to achieve the desired consistency. Pour the mixture into a saucepan, add sugar, salt, chili powder, and cumin powder, and cook over medium heat. Stir continuously until the mixture thickens to a chutney-like consistency. Let it cool down before serving. Store in an airtight container in the refrigerator.

Imli Chicken

Ingredients

500g chicken pieces
1 cup tamarind pulp
1 tablespoon ginger-garlic paste
1 teaspoon red chili powder
½ teaspoon turmeric powder
1 teaspoon coriander powder
Salt to taste
2 tbsp cooking oil
1 medium onion, finely chopped
Fresh coriander and green chilies for garnish

Instructions

Marinate the chicken with tamarind pulp, ginger-garlic paste, chili powder, turmeric, coriander powder, and salt. Let it sit for at least 30 minutes. Heat oil in a pan and sauté the onions until golden brown. Add the marinated chicken to the pan and cook over high heat for a few minutes. Reduce the heat, cover, and let the chicken cook until tender and the sauce thickens. Garnish with fresh coriander and sliced green chilies before serving.■

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