

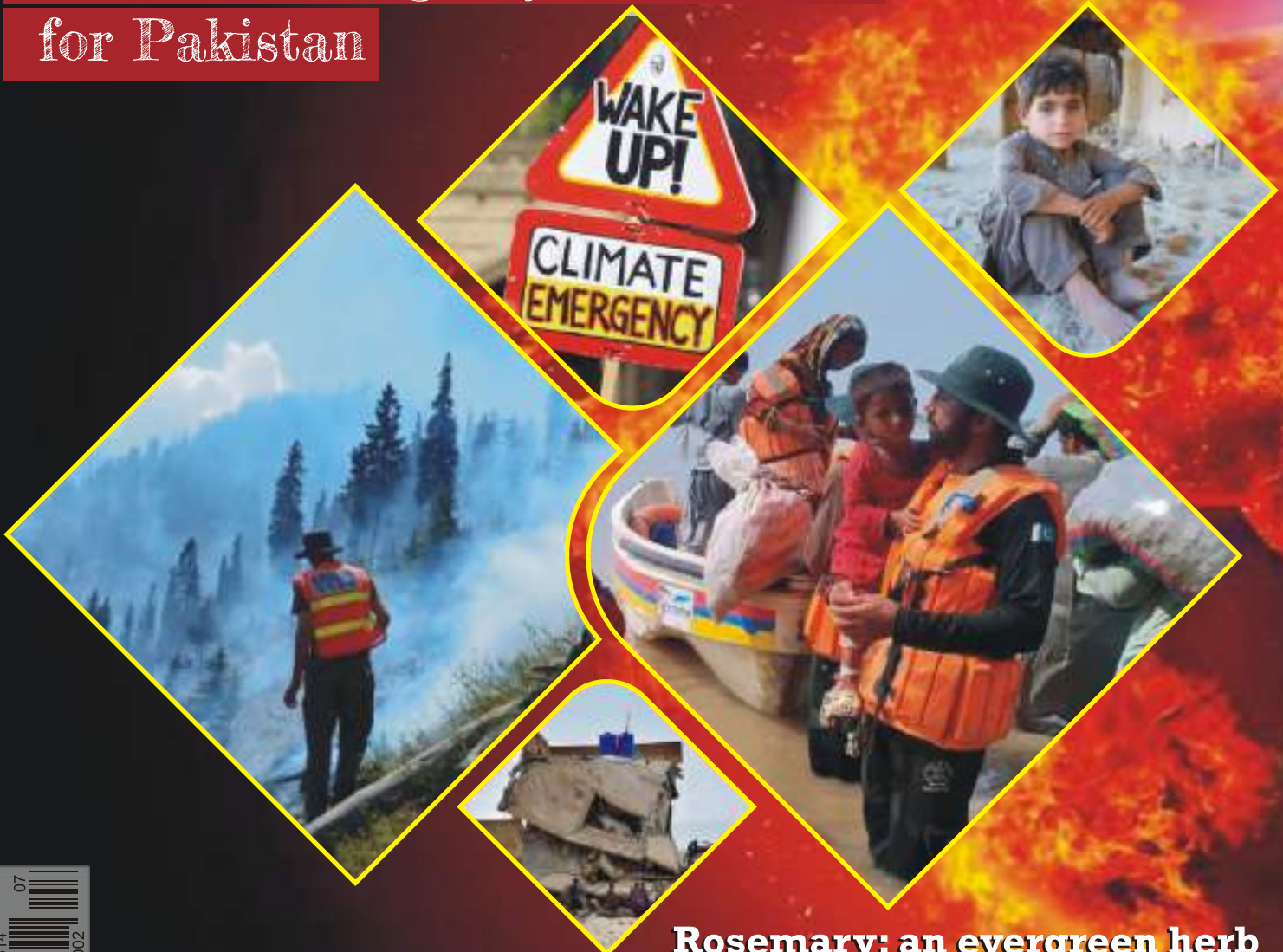
Vol.19 No.07

January 2024

subh mau

a greener vision

Establishing a National Climate Emergency Task Force for Pakistan



Rosemary: an evergreen herb

Gardening

Dragonflies face survival threats

Biodiversity

Dried Apricots

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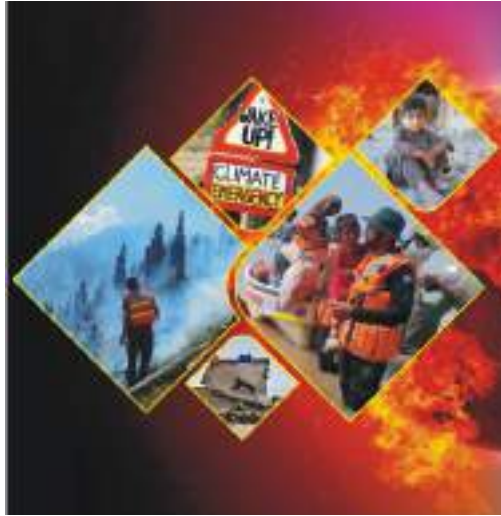
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AND BELONG FOREVER**



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Letters to the Editor

Cover Story October 2023

The issue of agriculture in the context of climate change is becoming increasingly problematic as the changing seasonal patterns and impacts lead to loss in productivity. The cover story proposes an interesting approach, which can potentially help address many issues at once. With agroforestry, we can create a win-win situation, so I hope people take notice and implement this sustainable approach sooner than later.

Naila Khan, Islamabad

Pakistan's dependence on agriculture is key, and we must adapt in order to address the issue of climate change as droughts and floods affect us adversely. The cover story, besides offering agroforestry, uncovers many systemic issues facing our farmers as well, which can be reformed to help support them in equitable manner such that they are sustained as well.

Junaid Aslam, Karachi

What is Subh-e-Nau

This journalistic endeavor primarily focuses on the environment and public health sector, and is published every month. The dismal state of affairs in this sector demands public awareness and community involvement for the protection of our natural environment. The magazine cuts across a diverse range of environmental issues, which require thought and conveys action-oriented messages for the general public and decision makers.

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Chief Editor's Message

The existential issue of climate change is not going away anytime soon. With continued lack of substantial action, we can expect the frequency and intensity of disasters to increase leading to further catastrophes. Pakistan stands in the direct line of fire when it comes of climate impacts and must do whatever it can to prepare and adapt to this challenge, rather than react to its disastrous manifestations.

In this month's cover story, Dr. Farrukh Chishtie proposes a National climate emergency task force as a way forward for us to adapt to climate change impacts and become resilient in the face of this escalating crisis. We feature this issue at the start of 2024, which we hope and pray is safe and healthy for all. The 2022 floods are a reminder of how more than 33 million were affected with about a third of Pakistan inundated with both social, biodiversity, and economic losses. We can expect the impacts to only worsen unless we act accordingly. The 2022 floods indicate this worsening trend as in 2010 we had a superflood which affected more than 20 million people. Besides this, Pakistan faces rise in heat waves, droughts and extreme weather events such as storms. With little to no investment in preparation or climate adaptation, our focus has been largely reactive in nature. Rather than repeat the same reactions, the proposed National climate emergency task force is aimed to foster collaboration and planning, using the best available solutions, including those brought about by international collaboration. Moreover, it will address systemic issues in order to provided long-term and just support those afflicted by climate impacts and other disasters. It goes without saying that major greenhouse gas emitters in developed countries must curb harmful emission at the same time to fully resolve the climate crisis.

The climate change crisis will make us pay in more ways than one If we do not organize better, and act now, rather than later for sake of our present and future generations.

Shahida Kauser Jaroq
Chief Editor

Cover Story

Establishing a National Climate Emergency Task Force for Pakistan



Pakistan, a country rich in natural beauty and cultural heritage, is now confronting an escalating climate crisis. To address this existential crisis, this article proposes a National Climate Emergency Task Force, which can be also considered for other nations.

Pakistan, a country repeatedly battered by climate catastrophes, is at a pivotal moment in its battle against climate change. The devastating 2022 floods, along with previous disasters like the 2010 super floods, heatwaves, and droughts, have highlighted the urgent need for a comprehensive approach to climate emergency management. This cover story proposes the establishment of a National Climate Emergency Task Force for Pakistan as a means to address this existential crisis, learning from global best practices and adapting them to the unique challenges faced by the country. I initially proposed this framework in the context of Canada from the Green Party of Canada platform and have adapted this proposal for Pakistan, given its increasingly vulnerable situation, especially to climate change impacts.

Speaking of which, Pakistan's vulnerability to climate disasters is no longer a speculative discussion. The 2022 floods alone submerged vast areas, displacing 33 million, inundating a third of the country, and causing extensive damage to infrastructure and agriculture. The 2010 super

“ The 2022 floods alone submerged vast areas, displacing 33 million, inundating a third of the country, and causing extensive damage to infrastructure and agriculture. The 2010 super floods were a grim precursor, impacting over 20 million people and causing damages exceeding \$9 billion ”

floods were a grim precursor, impacting over 20 million people and causing damages exceeding \$9 billion. Frequent coastal storms, heatwaves and droughts further exacerbate the situation, stressing the country's water resources and agricultural productivity.

Disaster management practices: A collaborative and holistic approach needed

Pakistan's approach to disaster management is decentralized, with responsibilities distributed among its provinces. This structure often leads to fragmented and uncoordinated responses to climate emergencies. Unlike many developed nations, such as the USA where disaster management is more centralized and uniform, Pakistan's provincial approach results in varying levels of preparedness and response capabilities across the country.

Moreover, the concept of insurance as a safety net in times of disasters is almost non-existent for the public in Pakistan. Unlike in developed countries, where private insurance plays a significant role in post-disaster recovery, in Pakistan, such facilities are either inaccessible or unaffordable for the majority. This lack of financial support systems exacerbates the hardships faced by affected communities, leaving them to rely primarily on government aid, which is often limited and delayed.



Photo Credit: Media.cnn



“In Pakistan, the prevailing disaster management practices are largely centered on responding to crises as they unfold. This means that the majority of resources, both human and financial, are mobilized after a disaster has already struck”

The Reactive Nature of Current Practices

In Pakistan, the prevailing disaster management practices are largely centered on responding to crises as they unfold. This means that the majority of resources, both human and financial, are mobilized after a disaster has already struck. For instance, during the 2022 floods and the 2010 super floods, the response mechanisms were activated post-event, focusing on rescue operations, relief distribution, and temporary rehabilitation.

While these efforts are vital in providing immediate aid and relief to affected populations, they often lack the foresight and infrastructure to mitigate the impacts of such disasters before they occur. This reactive approach results in higher costs, both in terms of human life and economic losses, and prolongs the recovery process.

Limited Focus on Preparedness and Mitigation

The current disaster management system in Pakistan also reveals a limited focus on preparedness and mitigation. Measures such as early warning systems, community education on disaster risk reduction, and infrastructural resilience are not as developed or emphasized as they should be. Consequently, communities often find themselves unprepared for the severity and frequency of climate-



Photo Credit: DAWN

Students, children, and civil society members marching to raise awareness for action against climate change

related disasters, exacerbating the impact on vulnerable populations.

Filling the Gaps: The Role of the National Climate Emergency Task Force

The introduction of a National Climate Emergency Task Force in Pakistan is poised to address these critical gaps in the existing disaster management framework. The task force, with its comprehensive approach, aims to shift the focus from a solely reactive model to one that equally emphasizes preparedness, mitigation, and response.

1. **Proactive Planning and Risk Reduction:** One of the primary objectives of the task force is to develop proactive planning strategies. This includes identifying high-risk areas, conducting climate vulnerability assessments, and implementing measures to reduce risk, such as improving infrastructure and promoting sustainable land use practices.
2. **Building Early Warning Systems:** The task force would prioritize the development and implementation of advanced early warning systems. These systems are crucial for providing timely alerts to communities, allowing for early evacuations and reducing casualties and damage.
3. **Community-Based Preparedness Programs:** By focusing on community engagement and education, the task force would empower local populations with the knowledge and skills to prepare for and respond to climate disasters. This grassroots approach ensures that communities are not just recipients of aid but active participants in managing their risk.
4. **Integrating Mitigation Strategies:** The task force would

“The current disaster management system in Pakistan also reveals a limited focus on preparedness and mitigation. Measures such as early warning systems, community education on disaster risk reduction, and infrastructural resilience are not as developed or emphasized as they should be”



also integrate climate change mitigation strategies into its disaster management plans. This includes promoting renewable energy, encouraging carbon sequestration practices, and advocating for policies that reduce greenhouse gas emissions.

Overall, disaster management in Pakistan is complicated by the devolution of responsibilities to the provinces. This structure, while allowing for localized solutions, often leads to disjointed efforts and resource disparities across provinces. A national task force can streamline efforts, ensuring uniformity in response and preparedness across the country.

The Imperative for a Centralized and Collaborative Task Force

Pakistan's current disaster management system, fragmented across provinces, has proven insufficient in the face of these escalating climate emergencies. This decentralized approach results in inconsistent responses and often delays critical aid and resources to affected areas. A National Climate Emergency Task Force would centralize efforts, ensuring a more effective and unified approach across the country. Here are some of the key functions in this framework:

Key Functions of the Task Force

1. **Strategic Planning and Coordination:** The task force would be instrumental in developing a national strategy for climate disaster preparedness and response, coordinating efforts across provincial and local governments. The task force would be responsible for collecting and analyzing climate data, aiding in the planning, prediction and early warning of potential climate disasters.
2. **Resource Allocation and Management:** It would oversee the efficient allocation and management of resources, ensuring timely and adequate response to affected areas.

Devolution: Recent history and

Devolution Plan of 2001

- **Local Government Ordinance 2001:** Introduced under General Pervez Musharraf's regime, this plan was a significant step towards devolution, intending to empower local governments.
- **Impact on Disaster Management:** The plan had mixed results. While it aimed to bring governance closer to the grassroots level, issues of coordination and resource allocation continued to hamper effective disaster management.

National Disaster Management Authority (NDMA)

- **Establishment:** The NDMA was established in 2007, post the 2005 Kashmir earthquake, marking a significant step in institutionalizing disaster management.
- **Challenges:** Despite its creation, the NDMA faced challenges due to overlapping responsibilities and unclear lines of authority between national, provincial, and local levels.

18th Amendment to the Constitution (2010)

- **Decentralization Efforts:** The amendment was a landmark in Pakistan's devolution, transferring several powers to the provinces.



Impacts on Disaster Management

- ▶ **Disaster Management:** This decentralization included disaster management, but the transition of authority and resources was not seamless, leading to coordination and planning issues.

Recent Years and Continuing Challenges

- ▶ **Efforts at Integration:** There have been efforts to better integrate disaster management across different levels of government.
- ▶ **Persistent Issues:** Problems with long-term planning, resource allocation, and inter-agency coordination continue to challenge Pakistan's disaster management efforts.

Pakistan's journey of devolution has been uneven, with significant impacts on its disaster management capabilities. While there have been institutional developments like the creation of NDMA and legislative changes like the 18th Amendment, challenges in coordination, resource allocation, and long-term planning persist. Effective disaster management in Pakistan remains a work in progress, requiring continuous efforts to improve local governance structures and coordination mechanisms at all levels of government.

“Pakistan's current disaster management system, fragmented across provinces, has proven insufficient in the face of these escalating climate emergencies. This decentralized approach results in inconsistent responses and often delays critical aid and resources to affected areas. A National Climate Emergency Task Force would centralize efforts, ensuring a more effective and unified approach across the country”

3. **Inter-Agency Collaboration:** Bridging various agencies like the Pakistan Meteorological Department, National Disaster Management Authority, respective Provincial Disaster Management Authorities and the Ministry of Climate Change would ensure a coordinated response to climate crises. The task force would play a pivotal role in facilitating this collaboration.

4. **Emergency Warning Systems:** Learning from Canada's call for a universal emergency warning system, Pakistan too needs an independent public alarm system. This would ensure timely warnings to even the most remote and vulnerable populations.

5. **Community Engagement and Education:** Raising awareness and educating communities, especially in vulnerable areas,

about climate risks and preparedness measures would be a crucial role of the task force.

6. **International Collaboration:** The task force would also facilitate international cooperation, learning from global best practices and integrating them into Pakistan's unique context.

7. **Building Resilience and Adaptation Strategies:** The National Climate Emergency Task Force would not only focus on immediate disaster response but also on long-term resilience and adaptation strategies. This includes developing infrastructure resilient to climate impacts, promoting sustainable agricultural practices, and investing in renewable energy sources. Such measures are critical to reducing Pakistan's climate vulnerability and fostering sustainable development.

In summary, the establishment of a National Climate Emergency Task Force in Pakistan is a critical step towards addressing the multifaceted challenges posed by climate change. By centralizing efforts and adopting a strategic approach, Pakistan can better prepare for, respond to, and recover from climate disasters. This initiative, which can further be emulated by other countries, represents a commitment to safeguarding the nation's future against the backdrop of an ever-worsening global climate crisis. ■



Photo Credit: CNFA

Promoting sustainable agricultural practices in Pakistan

Dr. Farrukh Chishtie



The crucial role of developed nations in mitigating climate change

The escalating climate crisis, particularly in countries like Pakistan in the global south, has highlighted a crucial issue at the forefront of international discussions, especially following the developments at COP28. It is increasingly evident that developed nations must assume a greater role in mitigating climate change and supporting vulnerable nations in their adaptation and resilience efforts.

The recent environmental disasters in Pakistan, including devastating floods and other extreme weather events, have underscored the disproportionate impact of climate change on

the global south. These regions are facing severe consequences, including loss of lives, livelihoods, and biodiversity, due to the climate crisis. This situation necessitates a global response, with

developed countries playing a key role in addressing these challenges.

Most countries among developed nations, have seen a significant increase in greenhouse gas (GHG) emissions over recent years. With some of the highest per capita emissions globally, these countries contribute substantially to the climate crisis. Despite their

The global climate crisis calls for an urgent shift in policies and actions by developed nations. Moving beyond mere humanitarian aid there is a pressing need to tackle the root causes of climate change. This includes drastically reducing GHG emissions and phasing out fossil fuels in favor of renewable energy sources. The goal should not just be to achieve net-zero emissions but to aim for net-

“Most countries among developed nations, have seen a significant increase in greenhouse gas (GHG) emissions over recent years. With some of the highest per capita emissions globally, these countries contribute substantially to the climate crisis. Despite their economic advancements, the policies and actions of these nations have often fallen short in effectively combating climate change”

economic advancements, the policies and actions of these nations have often fallen short in effectively combating climate change.

negative impacts, with ambitious targets such as a 60 percent reduction in emissions by 2030.

For a successful transition to sustainable practices, developed nations must adopt comprehensive strategies that encompass several



Photo Credit: REUTERS/Dan Riedhuber

“The recent COP28 conference has brought to light the importance of international cooperation in addressing climate change. Developed countries must lead the way in this collaborative effort, not only by transforming their domestic policies but also by providing support to those nations most affected by climate change. This support can take various forms, including financial assistance, technology transfer, and capacity-building initiatives”

key areas:

- ▶ Ending subsidies for fossil fuel industries and redirecting investments towards renewable energy.
- ▶ Supporting the workforce in transitioning from fossil fuel-dependent jobs to sustainable industry roles.
- ▶ Halting the development of new fossil fuel projects.
- ▶ Preparing for the increasing number of climate refugees through appropriate immigration strategies.

The Importance of International Cooperation

The recent COP28 conference has brought to light the importance of international cooperation in addressing climate change. Developed countries must lead the way in this collaborative effort, not only by transforming their domestic policies but also by providing support to those nations most affected by climate change. This support can take various forms, including financial



assistance, technology transfer, and capacity-building initiatives.

Gaps in International Cooperation

While there is much talk about international cooperation, there is little to no implementation. The

gaps seen in present approaches are:

- ▶ Financing for Adaptation and Mitigation: Despite progress in some areas, COP28 highlighted persistent gaps in financing for

climate adaptation and mitigation. Developing countries have long advocated for increased adaptation financing, which is crucial for countries like Pakistan that are highly vulnerable to climate impacts. At COP28, more than \$700 million was initially pledged to the Loss and Damage

“To address climate change in a meaningful manner, a concerted global effort is needed. This includes honoring financial commitments, closing gaps in climate finance, and moving towards a more sustainable and resilient future”

Fund, and over \$85 billion was committed during the conference, including funding for adaptation, climate and health initiatives, nature conservation, and climate-resilient food and agriculture projects. However, the funding remains insufficient when

compared to the estimated loss and damage financing needs, which run into several hundred billion dollars a year.

- **Lack of Clear Commitments to Phase Out Fossil Fuels:** The final agreement at COP28 included a recognition of the need for a transition away from fossil fuels. However, many countries expressed frustration at the lack of a clear call for a fossil-fuel phase-out this decade, along with loopholes in the text that might allow the continued production and consumption of fossil fuels. This is particularly concerning for countries like Pakistan, where the effects of climate change are already being felt acutely.
- **Disparity in Contributions to the Loss and Damage Fund:** The establishment of the Loss and Damage Fund at COP28 was a significant step. However, the contributions to the fund have been inadequate, with the total pledges falling well below the annual damages estimated in developing countries. For example, the U.S. and Canada’s contributions were considered paltry in comparison to their status as major contributors to cumulative greenhouse gas emissions.

The Role of Developed Nations

Developed countries have a crucial role in bridging these gaps. Their responsibilities include:

- **Enhancing Climate Finance:**

There is a need for increased financial commitments from developed countries to support adaptation and mitigation efforts in vulnerable countries. This involves not only fulfilling existing pledges but also significantly scaling up contributions to meet the vast needs of developing countries.

- **Committing to Fossil Fuel Phase-Out:** Developed nations must lead by example in transitioning away from fossil fuels. This involves setting ambitious targets for reducing reliance on fossil fuels and increasing investments in renewable energy.
- **Supporting Technology Transfer and Capacity Building:** Apart from financial aid, developed countries can support vulnerable nations through technology transfer and capacity building, helping them to develop more resilient and sustainable systems.

Moving Forward

To address climate change in a meaningful manner, a concerted global effort is needed. This includes honoring financial commitments, closing gaps in climate finance, and moving towards a more sustainable and resilient future. While incremental steps are being made, as seen in COP28, there is a pressing need for more ambitious actions and commitments, particularly from developed nations, to support countries like Pakistan in their fight against climate change.



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DRAGONFLIES FACE SURVIVAL THREATS

Key to ecosystem balance and health, dragonflies provide various ecological services. However, their survival is at stake due to various threats which include rampant water and air pollution in the country.



Every being on this planet serves an ecological purpose, including the tiniest of organisms to largest of species. The dragonfly is one such species, and it serves

key roles in wetland ecosystem health and balance. Pakistan has more than 225 natural and manmade wetlands, and dragonflies have played prominent

roles there.

They have sharp teeth and are hence classified under the “Odonata” order of insect species. Purely carnivorous, a key service



provided by dragonflies is keeping populations of various insects in check by actively consuming them. This includes disease carrying mosquitoes and biting flies. While they do not attack humans, they are observed as ferocious predators which actively monitor wetlands and get rid of insects whose numbers can easily bypass critical levels, had Nature not kept these



unique creatures in place.

Agility and speed are hallmarks of the dragonfly, which is presented by the facts that not only can they fly up to 18 miles per hour in a forward direction, but they can also fly sideways and backward! Not only are these qualities incredible, but they have species which holds the record for the largest miles logged for migration by an insect. The dragonfly species, “*Pantala flavescens*” crosses the ocean and travels 11,000 miles in the process. No wonder this amazing species of endurance is also known as the “global skimmer” holding the world record of the longest insect migration.

Another amazing quality of these remarkable species is that they have near 360-degree vision, with the head featuring 30,000 units which provide the insect with near absolute visual information from its surroundings. As such, its only blind spot happens to be the visual field directly behind its back. With this marvelous

equipment, it is no wonder that they prey has but a bare chance to survive. Scientists have observed that typically dragonflies attack the legs of their victims, and have one of the highest rates of success, which is quantified at about 95%.

While the global count of species is 500, there are about 120 species that are classified for Pakistan by dedicated researchers. However, there are rising threats



dragonflies.

It was found in the study that the neighboring marble industries in the region were releasing harmful pollutants, including those in the air and water which have led to a drastic decrease in the numbers of the species. While this is no surprise as environmental degradation is rife across Pakistan, it is indeed an avoidable tragedy, especially for the biodiversity of our country. Dragonflies provide a defense against all the dangerous insects such as mosquitoes and pests, while



and rapid decreases in their populations are being observed.

Recently, in a study conducted by Jehangir Khan, Saifullah and Ahmed Zia, expert scientist, have trends for dragonflies explicated for wetland regions in the Khyber Pakhtun province. Titled, “Biodiversity of Dragonflies and their Life Threatening Factors in Tehsil Chamla and Daggarr of District Buner, Khyber Pakhtunkhwa, Pakistan”, this research work not only identifies the species in the regions of the study, but also reveals the various threats to

also taking care of the ecosystem health overall.

The threats to our dragonfly populations require proper attention, and as the study points out, our authorities can begin by actively monitoring and if required, implement the relevant environmental laws, even if it may mean fines and shutting down against violators. They can begin by looking into the marble industries in the Tehsil Chamla and Daggarr of District Buner, and extend their efforts across Pakistan towards minimizing dragonfly and biodiversity losses. ■



Rosemary

an evergreen herb for your garden

Rosemary is a great choice for your garden. Here are the advantages of this wonderful evergreen shrub.

Gardening is a healthy hobby that has incredible benefits. We can grow plants at home even within limited available space and resources. However, it is very important to

carefully choose the right kind of plant species which should be good for our health and the environment. Some 'ornamental flowers' may do more harm than good and

hence should be avoided.

Rosemary is an evergreen shrub that thrives well in warm climates requiring very little maintenance, having numerous benefits. It is also a suitable plant for pollen-allergic individuals. The herb belongs to the Mint Family '*Lamiaceae*'. In this article, we will learn how to grow rosemary, its uses and benefits.

Growing Conditions: Rosemary is a sun-lover plant. Although it can flourish in harsh environments, the plant must be exposed to sunlight, and recommended to be grown in well-drained soil. Don't try growing rosemary in shady and waterlogged patches of your garden. Early spring is the best season to

“Rosemary is a sun-lover plant. Although it can flourish in harsh environments, the plant must be exposed to sunlight, and recommended to be grown in well-drained soil”





grow this evergreen plant.

Rosemary Uses:

The plant may be used in multiple ways such as food herb, oil for body massage or to prepare pesticide solution.

To Spice up the Food: Its leaves are mostly used as a culinary herb to give cuisines a distinct flavor. It is used in a variety of food; rice, fish, pasta, steak, sauces, and many more. Scientific studies have found that rosemary suppresses harmful bacteria including *B. cereus*, *Listeria monocytogenes* and *S. aureus* that may be present in food.

Essential Oil Massage: Regular scalp massage of rosemary essential oil can control hair loss. A 2022 research study published in *Scientific African Journal* discovered that the use of rosemary essential oil could reduce hair loss and help remove dandruff.

Apart from fixing hair problems, rosemary oil may be used for joint pain relief as well. It has anti-inflammatory properties and is generally considered safer than conventional topical creams and lotions.

Immunity Booster Supplements: Rosemary is loaded with antioxidants, iron, calcium, and vitamin B-6. For that reason, it is commonly used in herbal dietary supplements. It helps lower the risk of asthma, enhances memory, improves digestion, and is generally beneficial for our immune system.

“ Rosemary is loaded with antioxidants, iron, calcium, and vitamin B-6. For that reason, it is commonly used in herbal dietary supplements. It helps lower the risk of asthma, enhances memory, improves digestion, and is generally beneficial for our immune system ”

Eco-Friendly Pesticides: Rosemary oil in its concentrated form can also be used as an effective pesticide. It is hard on pests like aphids, ticks and whiteflies, and gentle on the environment. This organic pesticide is considered to be more effective than Neem oil. Spraying Rosemary oil killed 100% Silver Leaf Whiteflies during an experiment conducted by Earth's Ally, a US-based business providing eco-friendly agriculture solutions. It is worth mentioning that Silver Leaf Whiteflies' infestation has also become a serious threat to non-cotton farming in Pakistan. So it's time to experiment with eco-friendly alternatives to traditional toxic pesticides for sustainable agriculture.

Caution!

Taking rosemary in recommended doses is generally considered safe. Nevertheless, consuming too much herb extract in any form could be injurious to health. There are many side effects of rosemary overdose; vomiting, nausea, spasms, and pulmonary edema, to name a few.

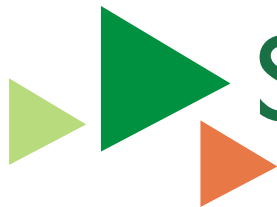
Aged and sensitive individuals, particularly those with preexisting medical conditions, and/or taking medications, should seek their physician's advice on whether they can safely use rosemary. It is known to interact with certain medicines including blood-thinners and Angiotensin-Converting Enzyme (ACE) inhibitors. ■



OR



GOING GREEN
IS THE BEST



Sachal Traders

Pitcher (Matka) Irrigation: A Simple & Smart Solution to Address Water Scarcity

Pitcher Irrigation, also known as “Matka Irrigation” in South Asia, is a classic yet smart and eco-friendly method of watering plants. Here are ways to save water using this approach.

Matka (pitcher) is a clay pot that has been used for centuries for water storage. The clay pot used in pitcher irrigation may have a small hole at the bottom which is closed by a cotton thread to slowly release the water into the roots. This is an older version of the modern Drip Irrigation System but still be very useful. This relatively cheap and simple irrigation method is a lifesaver technique for farming in dry areas facing severe water shortages.

Subh-e-Nau was one of the pioneers to initiate a pilot project of Matka Irrigation at Karachi University many years ago.

Why adopt Matka Irrigation?

Firstly, water scarcity has become a serious global issue that requires everyone to conserve as much water as possible. The Matka/Pitcher Irrigation method uses a relatively smaller amount of water by reducing wastage as compared to conventional methods i.e. using a garden hose. You may also recycle water by filling the pitcher with water that has been used to wash fruits and vegetables and/or rain-harvested water etc. Secondly, this method optimizes the plant's



water needs. As a result, you don't need to water plants every day or sometimes even twice a day in the hottest months of dry summer when the evaporation rate is too high. So this ancient irrigation system is not only good for conserving water but it also saves your time and energy.

Remember! Every single drop of clean water you conserve may eventually help others facing severe water shortages.

How to do it?

Traditional clay pots (Matkas) are affordable and quite easy to obtain from any local clay pot shop. Always buy the unglazed ones as they are porous. A 10-liter capacity Matka should be sufficient to irrigate an average domestic garden.

You would need to fix the pitcher irrigation system before preparing your garden for plantation as doing it after that could damage the plants' roots. Fixing the Matka Irrigator is very simple; just dig the same size hole as of pitcher's diameter and bury it up to the neck in the soil. An unglazed pot is porous, which means it keeps seeping out water into garden soil. So you may bury it as it is without making a small hole at the bottom. Now fill it with water, put a lid on it and your pitcher-irrigated garden is ready. The saplings or seeds should be planted around the pitcher. One Matka (pitcher) is usually enough for 4-6 square feet area, depending on climate and soil. If it is too hot and dry, you may need to add more Matkas, but fewer if the climate is moderate with relatively moist soil. These

“Subh-e-Nau was one of the pioneers to initiate a pilot project of Matka Irrigation at Karachi University many years ago”



SN Library

pots need to be refilled as they run out of water. You can use harvested rainwater in Matka irrigation. You may also mix liquid fertilizer or organic pesticides in these pitchers as needed.

Precautions:

- Always put a lid on Matka to reduce water loss by evaporation when temperatures are too high
- Covering up pots also prevents them from becoming mosquito

breeding sites.

- Watch out for snakes which may be hiding in a pitcher in the hot summer months.
- Do not fill water with chemical contaminants e.g. bleach, laundry detergent, and/or any kind of acidic or alkaline solution.
- It is good to drain these pots during heavy monsoon rains to avoid waterlogging.■

Managing common health & safety hazards in winters

Unlike long intense summers, we experience milder and shorter winters in Pakistan except for the northern region and mountainous Balochistan. Nevertheless, changing seasons demands a change in daily life routine. Here are some tips to deal with these issues.



Aftermath of 2022 Snowstorm of Murree which left 23 dead

Winter comes with different kinds of safety and health hazards. Here we have listed some of the most common ones and preventive measures to stay safe and healthy in cold weather:

Dehydration:

You may not feel thirsty when it is cold but still be dehydrated. Insufficient fluid intake could make you more susceptible to illness. Always make sure to drink plenty of water in cold weather. It is okay to have a cup of tea or two every day, however, too much caffeine is also bad for your health.

Respiratory Health Problems:

These health issues become common public nuisance as temperature drops below 15°C. The cold and dry atmosphere provides perfect conditions for spreading upper and lower respiratory infections including flu and pneumonia etc. Dry winters are also infamously known for exacerbating chronic conditions like asthma, dust and dander allergies. Here is what you should do to reduce your chances of getting sick:

- ➔ Wear a dustproof face mask when outdoors; particularly when you are walking or riding a bike etc.
- ➔ Use a humidifier when the indoor humidity level drops
- ➔ Wash hands often with soap and water; your hands play a

“ Dry winters are also infamously known for exacerbating chronic conditions like asthma, and dust & dander allergies ”



Wear face and eye protection in heavily polluted zones



Drinking honey garlic tea is good to boost immune system in winters

very important role in spreading viral respiratory infections. Keep them clean!

- ➔ Eat a balanced and healthy diet; avoid fatty and sugary food.
- ➔ When feel sick, do not self-medicate. Particularly antibiotics may only be prescribed by a qualified physician. Mild to moderate colds and flu usually go away within a week with proper rest and the use of minimal over-the-counter medicines. However, a patient may seek medical help if they do not feel well, or their condition gets worse.

SMOG Related Issues:

Luckily, we do not get heavy snowfall in major cities like Karachi, Lahore and Islamabad,

but unfortunately, we get smog instead! The mixture of fog, dust particles and smoke is known as smog; a toxic fog that has recently emerged as a newer winter hazard. Smog is seriously threatening public health and safety in South Asia and Lahore has officially become the “Smog Capital”. One of the severe health hazards of this toxic fog formation is respiratory problems which we have just discussed. Other smog-related hazards include itchy eyes, worsening health of heart patients and traffic accidents. Although it is almost impossible to eliminate smog without taking strict large-scale measures, here are some things we can do to minimize these risks:

- ➔ Wear face and eye protection while riding a bike or walking in heavily polluted zones.
- ➔ Wash your hands and face with

water right after you get home.

- ➔ Gargling with lukewarm saline water can soothe sore throat.
- ➔ Sensitive and allergic individuals may take antihistamines as per the physician's prescription.
- ➔ Avoid long travels on highways in poor visibility.
- ➔ Keep your car's lights, indicators, and horn in perfect condition. Use FOG Lights whenever required and always remember to switch them off when visibility improves.
- ➔ Drink warm beverages like herbal and honey garlic tea but avoid strong caffeinated drinks.

Visiting a Hill Station:

Winters in some regions of Pakistan could still be quite harsh. While the natives have no choice but to survive in intense cold, some thrill-seekers travel to these areas for the sake of adventure!

Taking a perilous journey without precautions could prove deadly. The 2022 Snowstorm of Murree claimed 23 lives, all of them were tourists. This shows how dangerous a snowstorm can be. Following these basic safety tips could help reduce the risk:

- ➔ If you are driving, make sure your vehicle is roadworthy and capable of going uphill with the engine, transmission, brakes, tires, and wipers in perfect working condition. And do not forget to bring a set of tire chains. You would need those chains to safely drive on snowy roads.
- ➔ It could still be dangerous if the

vehicle is perfect but the person behind the wheel is not a good driver.

Remember! Driving in hilly areas, particularly during snowfall, is much different than driving on motorways in plain areas. If you are not familiar with mountainous road driving, seek the help of an experienced driver.

- ➔ Hypothermia and frostbite are some serious hazards of being in extremely low temperatures. Wear appropriate clothes; always bring jackets, raincoats and pants.
- ➔ Slips and falls are also common, so it is advisable to wear slip-resistant footwear, preferably snow boots.
- ➔ Bring all necessary medicines, flashlights and food with you. You also need to have multiple sources of communication; at least 2 mobile phones with working SIM cards of all networks and preferably an FM radio.
- ➔ Hill stations are overcrowded during holidays and finding accommodation could become hectic. Make sure to reserve a suitable hotel room to stay in the night.

What NOT to do if get stranded in snow:

- ➔ it is notable to mention that all those 23 people who died in Murree 2 years ago were due to carbon monoxide poisoning rather than hypothermia! So, it is important to keep yourself warm but sitting or sleeping in a car during snowfall with all windows rolled up and engine running could kill you. What

“Hill stations are overcrowded during holidays and finding accommodation could become hectic. Make sure to reserve a suitable hotel room to stay at night”

happens is that, as falling snow builds up around the car, it blocks the exhaust pipe. And then carbon monoxide gas could enter the passenger cabin killing the occupants in a matter of minutes! So do not roll up all the windows if you are stuck in a snowstorm and the car's engine is running. Also, keep clearing snow around the car to prevent the exhaust pipe from getting blocked. We do not advise visiting hill stations just to have a snowball fight with buddies. But if you must visit, always come fully prepared!

CO Poisoning & Gas Leaks and Fires at Home:

We have use space and water heaters in winter. These gas-operated devices can cause deadly accidents in many ways including carbon monoxide poisoning as well as gas explosions. A complete Gas Safety guide had been published in a previous edition of the monthly Subh-e-Nau. Here are some basic tips to avoid gas-related mishaps in winter:

- ➔ Never install any Gas Water Heater, even a small one, inside a bathroom.
- ➔ Do not use the gas space heaters in closed rooms with no or poor ventilation.
- ➔ Always turn off your heater by the main valve before you sleep
- ➔ Install a gas leak and CO detector in your house
- ➔ If you suspect a gas leakage, open all doors and windows, shut the gas by the main valve, do not light a matchstick to check a gas leak and do not touch any electric switch.
- ➔ Hot water taps should be used with care; keep them out of the reach of children. Do not leave your young kids unattended in the bathroom with hot water taps running to prevent scald injuries while bathing.

Seasonal Affective Disorder:

Last but not least, a winter-related hazard is known as **Seasonal Affective Disorder** a.k.a **SAD**. It may sound weird but very little or no exposure to sunlight can indeed aggravate depression, anxiety and mood disorders in certain individuals. Other than feeling down, insomnia or poor sleep quality is a very common symptom of Seasonal Affective Disorder. Spending good time in sunlight is advised to overcome SAD. You may need to consult a psychiatrist if your mental health condition does not improve or gets worse.

We hope that you will manage these common winter hazards by following the basic safety tips. Stay safe during this winter time and beyond! ■

Fossil fuel related air pollution ‘kills 5 million people a year’



Of more than 8 million deaths worldwide from outdoor air pollution, 61% linked to fossil fuels, finds study.



A global phase-out of fossil fuels would have health benefits much larger than those indicated by previous studies, an international team of researchers say

Air pollution from fossil fuel use is killing 5 million people worldwide every year, a death toll much higher than previously estimated, according to the largest study of its kind.

The stark figures, published on the eve of the Cop28 climate summit in Dubai, will increase pressure on

world leaders to take action. Among the decisions they must make at the UN conference will be whether to agree, for the first time, to gradually “phase out” fossil fuels.

Research has shown that switching from fossil fuels to clean, renewable energy sources would

save many lives from air pollution and help combat global heating. However, until now, mortality estimates have varied widely.

A new modelling study suggests air pollution, from the use of fossil fuels in industry, power generation, and transportation, accounts for 5.1 million avoidable



deaths a year globally. These findings were published in *The British Medical Journal* (BMJ).

The contribution of fossil fuels equates to 61% of a total estimated 8.3 million deaths worldwide due to outdoor air pollution from all sources in 2019.

The new estimates of fossil fuel-related deaths are larger than most previously reported values, suggesting that phasing out fossil fuels might have a greater impact on attributable mortality than previously thought.

“Our results suggest that a global phase-out of fossil fuels will have

large health benefits, much larger than indicated by most previous studies,” the global team of researchers wrote in the *BMJ*. “These data support increasing the share of clean, renewable energy, advocated by the UN through the sustainable development goals for 2030 and the ambition of climate neutrality for 2050.”

Ambient air pollution is the leading environmental health risk factor for illness and death, but few global studies have attributed deaths to specific air pollution sources and their results widely differ.

To address this, an international team of researchers from the UK, US, Germany, Spain and Cyprus,

used a new model to estimate deaths due to air pollution related to fossil fuels, and to assess potential health benefits from policies that replace fossil fuels with clean, renewable energy sources.

They assessed excess deaths using data from the *Global Burden of Disease 2019* study, as well as Nasa satellite-based fine particulate matter and population data, and atmospheric chemistry, aerosol, and relative risk modelling for 2019.

The results show that in 2019, 8.3 million deaths worldwide were attributable to fine particles (PM_{2.5}) and ozone (O₃) in ambient air, of which 61% (5.1 million) were linked to fossil fuels.

“Major reductions in air pollution emissions, notably through a phase-out of fossil fuels, could have large, positive health outcomes. Results show that the mortality burden attributable to air pollution from fossil fuel use is higher than most previous estimates,” the researchers wrote.

They said one reason for their model producing larger estimates than most previous studies was its being based solely on studies of outdoor air pollution. Uncertainty remained but given the Paris climate agreement’s goal of climate neutrality by 2050, “the replacement of fossil fuels by clean, renewable energy sources would have tremendous public health and climate co-benefits”. ■

Courtesy: Guardian UK

Beyond artificial rain: Addressing Lahore's smog crisis and air pollution across South Asia

In December 2023, Pakistani authorities employed artificial rain to combat the severe smog crisis in Lahore, one of the world's most polluted cities. This initiative involved cloud seeding, a process where substances like silver iodide are dispersed into clouds to induce rain.

This artificial rain method was successful in producing drizzles in at least ten areas of Lahore. Despite this, the underlying causes of the smog such as pollution from industrial emissions, vehicles, brick kilns, and crop residue burning remain unaddressed. The worsening air pollution in Pakistan, particularly in Lahore, is partly due to a combination of low-grade diesel fumes, seasonal crop burning, and colder winter temperatures, which result in stagnant clouds of smog. This has catastrophic health consequences, including increased risks of strokes, heart disease, lung cancer, and respiratory diseases.

The use of artificial rain, though innovative, highlights a broader issue of reliance on short-term solutions rather than addressing the root causes of environmental degradation. The lack of implementation of environmental laws and policies in Pakistan exacerbates the situation. The smog problem is further intensified by growing industrialization in South Asia, leading to increased pollutants from factories, construction activities, and vehicles, especially in densely populated areas. Moreover, during cooler autumn and winter months, temperature inversion traps pollutants closer to the ground, worsening air quality.

“ Air pollution is identified as a major environmental threat and one of the leading causes of death among all risk factors, ranking just below hypertension, tobacco smoking, and high glucose. Globally, air pollution accounts for approximately 7 million premature deaths annually, attributable to diseases such as ischemic heart disease, stroke, chronic obstructive pulmonary disease, lung cancer, and acute respiratory infections like pneumonia ”

While artificial rain can temporarily alleviate pollution levels, comprehensive strategies focusing on sustainable urban planning, strict enforcement of environmental regulations, and promotion of cleaner technologies are essential for long-term improvement of air quality and public health in regions like Lahore.

The smog problem in Lahore, Pakistan, is part of a broader air pollution crisis affecting South Asia. This region, which includes nine of the world's ten cities with the worst air pollution, faces significant challenges due to its air quality. The pollution in South Asia is not only a consequence of large industries and vehicles, common sources globally, but also includes contributions from other sources such as the combustion of solid fuels for cooking and heating, emissions from small industries like brick kilns, and the burning of municipal waste. These factors combine to create severe air quality issues, leading to an estimated 2 million premature deaths annually across the region.

Air Pollution: A catastrophic local and global issue

Air pollution remains a critical global health issue, with significant impacts on human health. According to the World Health Organization (WHO), nearly all of the global population breathe air that exceeds the recommended limits set by the organization, and this exposure is linked to a range of serious health conditions. Air pollution is identified as a major environmental threat and one of the leading causes of death among all risk factors, ranking just below hypertension, tobacco smoking, and high glucose. Globally, air pollution accounts for approximately 7 million premature deaths annually, attributable to diseases such as ischemic heart disease, stroke, chronic obstructive



pulmonary disease, lung cancer, and acute respiratory infections like pneumonia. These infections primarily affect children in low- and middle-income countries.

The health effects of air pollution are extensive, impacting not only respiratory health but also contributing to preterm and low birth weight, asthma, and cognitive and neurological impairment. This situation represents a significant economic burden as well, imposing global health costs that amounted to more than US\$ 8 trillion in 2019, or 6.1% of the global gross domestic product.

In the context of South Asia, the air pollution crisis is particularly severe. South Asia is home to nine of the world's ten cities with the worst air pollution. This pollution causes an estimated 2 million premature deaths across the region each year and incurs significant economic costs. In addition to the global sources of air pollution like large industries, power plants, and

vehicles, South Asia faces additional challenges from the combustion of solid fuels for cooking and heating, emissions from small industries such as brick kilns, and the burning of municipal waste. These regional specifics further exacerbate the health impacts of air pollution in South Asia. Here are recommendations for Pakistan and the broader South Asia region to address air pollution:

For Pakistan:

1. Strengthen and enforce environmental regulations.
2. Promote cleaner technologies in industry and transportation.
3. Implement sustainable urban planning strategies.
4. Increase green spaces and reforestation efforts.
5. Raise public awareness about air pollution and health impacts.
6. Invest in renewable energy sources.

For South Asia:

1. Coordinate regional policies to

address transboundary air pollution.

2. Address unique regional contributors like brick kilns and solid fuel combustion.
3. Increase investment in public transportation systems.
4. Develop regional air quality standards and monitoring systems.
5. Enhance regional cooperation for technology transfer and knowledge sharing.
6. Encourage community participation in air quality improvement initiatives.

So, in Lahore, the use of artificial rain to combat smog indicates a response to the immediate crisis. However, this approach does not address the fundamental causes of air pollution, such as deforestation, industrial emissions, and pollution from cars. The situation is exacerbated by the lack of effective implementation of environmental laws. In the broader context of South Asia, tackling air pollution requires a multifaceted approach that includes not only immediate measures like artificial rain but also long-term strategies. These strategies should focus on sustainable urban planning, enforcing environmental regulations, promoting cleaner technologies, and addressing the unique contributing factors in each region. Therefore, while artificial rain can provide temporary relief, comprehensive and sustainable solutions are needed to address the root causes of air pollution in South Asia. This includes a coordinated approach across the region to address both common and unique pollution sources effectively.■

A sequel to a classic climate change documentary

"An Inconvenient Sequel: Truth to Power," Al Gore's follow-up to his groundbreaking environmental documentary "An Inconvenient Truth," presents a portrait of Gore's continued efforts in the battle against climate change.

However, the film's reception and impact are nuanced, particularly when compared to its predecessor. The film showcases Gore's tireless advocacy and the struggles he faces, including political setbacks and the broader challenge of communicating the urgency of climate change. Scenes such as Gore navigating flooded streets and engaging with various stakeholders, including business leaders and politicians, depict his relentless commitment to the cause. The documentary also highlights the physical manifestations of climate change, with striking visuals of melting glaciers, serving as a powerful reminder of the planet's vulnerability.

However, the film has been critiqued for its focus on Gore himself, sometimes veering towards a portrayal that can appear self-aggrandizing. While Gore's dedication is evident, the film is said to sometimes prioritize the elevation of his persona over a deeper exploration of the complex issues and potential solutions to climate change. This approach has raised questions about the balance between championing a leader in the environmental movement and providing a clear, actionable path towards addressing the climate crisis.

"An Inconvenient Sequel" arrives in a context where climate change discourse has evolved significantly since the release of "An Inconvenient Truth." The urgency and visibility of environmental issues have increased, partly due to Gore's efforts. However, the sequel's impact is seen as limited in terms of reaching beyond those already convinced of the climate crisis, especially in a world where skepticism and misinformation about climate change persist.

In the backdrop of the ongoing COP28, "An Inconvenient Sequel" stands as a testament to the ongoing struggle and the need for persistent advocacy in combating climate change. The film, while inspiring in its depiction of Gore's unwavering spirit, also serves as a reflection of the broader challenges in mobilizing global action against environmental degradation and highlights the complexity of balancing personal narratives with the pressing need for collective action. ■



NEWS MAKER



COP28 pledges so far not enough to limit warming to 1.5C, warns IEA

A raft of new pledges announced at the COP28 climate summit will not be enough on their own to limit global warming to 1.5 degrees Celsius (2.7 degrees Fahrenheit), according to the International Energy Agency (IEA), as the talks headed into the final phase on December 17, 2023. So far, 130 countries have agreed to triple renewables and double the rate of energy efficiency improvements, while 50 oil and gas companies have agreed to cut out methane emissions and eliminate routine flaring by 2030 under the Oil and Gas Decarbonisation Charter. If everyone delivered on their commitments, it would lower global energy-related greenhouse

gas emissions by 4 billion metric tonnes of carbon dioxide equivalent in 2030, the IEA said in an analysis. That is about a third of the emissions gap that needs to be closed in the next six years to limit warming to 1.5C above pre-industrial levels, as agreed to in the 2015 Paris Agreement. "They would not be nearly enough to move the world onto a path to reaching international climate targets," the IEA said on Sunday. "The IEA will continue to monitor the ongoing developments at COP28 and update its assessment as needed," it added. "Failure is not an option. What we are after is the common good. What we're after is what is in the best interest of everyone, everywhere," al-Jaber, the CEO of the Abu Dhabi National Oil Co, said on December 17, 2023. "We need to find consensus and common ground on fossil fuel, including coal," he added. The IEA has previously said countries would need to deliver in five key areas at COP28 to keep 1.5C a possibility. In addition to adding renewables, boosting energy efficiency and cutting methane, it said a large-scale financing mechanism is

needed to triple clean energy investment in poorer nations. The IEA also said the world would need to commit to a decline in the use of fossil fuels and end new approvals of unabated coal-fired power plants. Saudi Arabia, a major oil producer, and India, which is heavily reliant on coal, are said to be the main obstacles to an agreement on phasing out fossil fuels at COP28.

(Courtesy: Al-Jazeera News)



Pakistan calls on developed nations to fulfill \$100B yearly climate finance pledges

Pakistan's caretaker prime minister on December 16, 2023, called on industrialized countries to fulfill a commitment to provide an annual \$100 billion in climate finance to developing nations. "The provision of sufficient, additional,

predictable, ground-based climate finance by developed countries is imperative," Anwaarul Haq Kakar said in Dubai as he addressed the ongoing UN climate summit, commonly known as COP28. Underlining that the provision of climate finance should not diminish development finance or add to the "already-high debt burden" of developing nations, Kakar said: "Developed countries must take the lead in raising global mitigation ambition commensurate with their economic standing and historical responsibility and then help developing countries do the same." Dubai is hosting the two-week UN climate summit, attended by around 70,000 delegates from around the world. The Pakistani caretaker premier warned of the existential threat that climate change poses for humanity, pointing to the "super-floods" that inundated much of his country last year and forecasts that this year will be the world's hottest in recorded history. Kakar stressed the need for COP28 to activate the means of implementing climate action through "climate finance, technology transfer, and capacity building for developing countries based on the established principle of equity and common but differentiated responsibilities."

(Courtesy: Anadolu News Agency)

Global South Decries 'Weak' Progress on Climate Adaptation at COP28

With just two days left until the conclusion of the 28th United

Nations Climate Change Conference in Dubai, climate justice advocates from the Global South on Sunday expressed alarm over the latest draft of the Global Goal on Adaptation, a document being negotiated at the summit as policymakers finalize an agreement on further progress that must be made to limit planetary heating. African countries proposed a Global Goal on Adaptation (GGA) a decade ago, and a number of advocates warned December 12, 2023 that the document so far appears "vague," with insufficient financial pledges from fossil fuel-producing nations to help the Global South to adapt various sectors—including agriculture, water, and transportation—to the climate emergency. "Across the world millions of people, most of whom are least responsible for carbon emissions, are attempting to adapt their lives and livelihoods to a distorted climate," wrote Mohamed Adow, founder and director of Power Shift Africa, at Climate Change News. "Although it isn't just about money, funding is important and severely lacking. The goal for 2023 was to raise \$300 million for the Adaptation Fund, but at COP28 we've only seen \$169 million in pledges, a mere 56% of the intended amount." The draft reiterates an earlier call for wealthy nations to double adaptation finance by 2025, but only "urges" and "invites" governments to provide resources for developing countries that are disproportionately affected by climate-linked sea level rise, drought, and flooding—despite the fact that the entire continent of

Africa is behind just 4% of planet-heating global greenhouse gas emissions. The call to "urge" powerful countries to contribute meaningfully to a climate adaptation fund "is code for 'only if you feel like it, but no worries if you don't'," said Teresa Anderson, global climate justice lead for ActionAid. "Overall, the text is weak and doesn't sufficiently address the aspiration for setting the required adaptation measures and indicators and mobilizing adaptation financing," said Adow. The U.N. Environment Program said in November that between \$215 billion and \$387 billion is needed annually to help the Global South adapt their infrastructure to the climate crisis. In 2021, just \$21 billion was provided. While developed countries "have committed to at least double adaptation finance by 2025," said Obed Koringo of CARE Denmark, "a detailed roadmap is the only way to achieve this. This must set out what individual developed countries plan to provide by 2025 and how this adds up to \$40 billion annually." "It is disappointing to see that negotiations on adaptation are hurtling towards a damaging global failure," said Koringo. "We are afraid that it will have catastrophic consequences for communities on the frontlines of the climate crisis, especially in Africa... Failure to invest in adaptation, including early warning systems, flood defenses, and drought-resistant crops, will only increase the costs of loss and damage in the long run." ■

(Courtesy: Common Dreams)

Creature of the Month

Bullethead Parrotfish

(Chlorurus sordidus)

This colourful parrotfish lives on coral reefs and lagoons to over 75 feet. It is one of the most common parrotfish seen in the Indo-Pacific from the Red Sea to Hawaii and Australia. Parrotfish are unusual because they sleep wedged in the coral in a mucous cocoon. Until recently this was thought to mask the scent of the parrotfish from predators. But research published this month shows that the cocoon actually works as a "mosquito net". The parrotfish are targets for external parasites which feed on their blood, much as mosquitos feast off humans. During the day the fish visit "cleaner stations" where cleaner wrasse remove the parasites (gnathiids). During the night the fish spend their time building the cocoons before tucking into bed, protected from the biting gnathiids. The Bullethead parrotfish changes colour as it gets older. Initially both male and female are a drab grey, brown or reddish colour. Some of the males, though, will change into a bright blue or green primary male. Females can also turn into males, but they will not be quite as brightly coloured. These are called secondary males. Like other parrotfish, Bulletheads have fused teeth and need to continually graze dead coral rock otherwise their teeth will grow too long. They often appear to be eating corals, but more often they're really eating algae growing on an exposed section of the coral skeleton. This benefits the coral as the algae growing on shallow reefs would otherwise smother them. Parrotfish create a phenomenal amount of sand - the remains of the rock they crunch. This is one reason why the visibility on reefs is generally higher in the early mornings, before parrotfish have begun their rock munching.

Source: <http://www.divingrebels.org/index.php/creaturefeature/creaturemonth>



Flower of the Month

Protea Pinwheel

(Leucospermum catherinae)



This fun flower looks more like a carnival toy than a creation of nature. Also known as the Catherine-wheel Pincushion, this is the most exquisite of the "firework pincushion" flowers. Not many flowers can compare to a bed of blooming Protea Pinwheels. The coolest fact about this flower is that it's interconnected with fire. In the wild, Protea Pinwheels are perfectly suited to adapt to harsh climates. The best time for Protea Pinwheels to bloom is after a fire, when the adult plants, rodents, and other insects that would impede their growth have been destroyed. Protea Pinwheels insure their continued existence by producing little fruit that is collected and eaten by ants. The ants do not eat the seeds, which remain dormant underground until there is a fire at which time the seeds are cued to begin germination.

Source: <http://boingboing.net/2015/02/26/40-of-the-worlds-weirdest-fl.html>

Poem

A Minor Bird



I have wished a bird would fly away,
And not sing by my house all day;

Have clapped my hands at him from the door
When it seemed as if I could bear no more.

The fault must partly have been in me.
The bird was not to blame for his key.

And of course there must be something wrong
In wanting to silence any song.

Robert Frost

Interesting website

Types and How Mountains Are Formed: For Kids:
<https://owlcation.com/>



This is an informative site which teaches you about how the mountains are formed and what types are out there. Check it out!

Quote

A nation that destroys its soils destroys itself.
Forests are the lungs of our land, purifying the
air and giving fresh strength to our people.

~ *Franklin D. Roosevelt*

International days



Bird Day

The health of the global bird population is a reflection of and early warning system for our wider ecological health and current research indicates that up to 12% of all species of birds may be at risk of becoming extinct in the next century. Bird Day aims to raise awareness of the plights faced by common and rare birds, from disease and environmental factors to illegal trade and welfare in captivity.



Cut Your Energy Costs Day

A great New Year's resolution might be to reduce your energy consumption, and to save money in the process. Cut Your Energy Costs Day is all about using less electricity (and hopefully paying less money as a result).



Squirrel Appreciation Day

Red, grey or even black, what's your favorite color of squirrel? Squirrel Appreciation Day reminds us to enjoy these nut-burying, scampering animals respectfully and with consideration. ■

Dried Apricots: Unveiling the Golden Gems of Pakistani Cuisine

In the heart of Pakistan's diverse culinary landscape lies a sweet treasure that has been cherished for centuries - dried apricots.

These golden gems are not only a delight to the taste buds but also a testament to the country's rich agricultural heritage.

The journey of Pakistani dried apricots begins in the lush orchards, predominantly located in the northern regions such as Gilgit-Baltistan. Here, the unique climate provides the perfect conditions for apricot trees to flourish. Once ripe, these apricots are handpicked with care, ensuring that only the best quality fruits make it to the drying process. Traditionally, the apricots are halved and dried under the sun, a method that preserves their natural sweetness and nutrients.

Dried apricots are a powerhouse of nutrition. They are rich in vitamins A and C, fiber, and potassium. The drying process concentrates these nutrients, making them an excellent snack for health-conscious individuals. They are also known for their role in traditional medicine, often used to aid digestion and improve skin health.



In Pakistani cuisine, dried apricots are a versatile ingredient. They find their way into a variety of dishes, from savory to sweet. One can find them adding a unique flavor to biryanis, stews, and even in desserts like apricot halwa. Their ability to absorb and enhance flavors makes them a favorite among Pakistani chefs.

For many Pakistani farmers, apricot cultivation is not just an agricultural activity but a way of life. The sale of dried apricots provides a vital source of income. Moreover, apricots hold cultural significance, often being served at various festivals and celebrations, symbolizing prosperity and health.

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Despite their popularity, the dried apricot industry in Pakistan faces challenges. These include lack of modern drying and storage facilities, which can affect the quality and shelf life of the product. However, there is a growing interest in organic and sustainable farming practices, presenting an opportunity for the industry to evolve and cater to international markets.

Dried apricots, with their sweet taste and nutritional value, are not just a fruit but a symbol of Pakistan's rich agricultural tradition. As the world becomes increasingly interested in healthy eating, Pakistani dried apricots stand out as a natural, nutritious snack choice, promising a taste of Pakistan's heritage in every bite. ■



Dried apricots are mighty delicious and nutritious. Here are two recipes for you to try. Enjoy!

Dried Apricot Jam

Ingredients

1 lb dried apricots
3 cups water
2 cups granulated sugar
Juice of 1 lemon



Instructions

Begin by finely chopping the dried apricots. Place the chopped apricots in a large pot and add water. Bring to a simmer over medium heat. Once the apricots are simmering, add the sugar and lemon juice. Stir well to combine. Continue to cook the mixture, stirring frequently, until it thickens. This may take about 30 minutes. Remove from heat and allow to cool. Once cool, transfer the jam to sterilized jars and store in the refrigerator.



Apricot and Almond Energy Bars

Ingredients

1 cup dried apricots
1 cup raw almonds
½ cup shredded coconut
¼ cup honey
1 tsp vanilla extract
A pinch of salt

Instructions

Soak the dried apricots in warm water for about 10 minutes to soften them. Then drain and pat dry. In a food processor, combine the apricots, almonds, shredded coconut, honey, vanilla extract, and salt. Pulse until the mixture is well combined and sticks together. Line a baking tray with parchment paper. Transfer the mixture to the tray and press it down firmly into an even layer. Refrigerate the mixture for at least an hour, then cut into bars or squares. Keep the bars in an airtight container in the refrigerator. ■



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