Vol.20 No. 11

January 2026

subh-e-nau

a greener vision

Pakistan's first international award winning magazine on environment and health

Indigenous knowledge and practices: A needed balance to recover ourselves and our ecosystems

Arabian sea
Biodiversity

Hanging Baskets
Gardening

Singhara in Winter
Health Page

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Letters to the Editor

Cover Story December 2025

Lost among the shadows: Homeless and alone in Pakistan

As a family physician in Lahore, I want to thank you for treating loneliness and homelessness as public health issues, not as personal failures. In clinics, we see how chronic stress, poor sleep, malnutrition, addiction, and untreated depression feed into each other. When someone is living in the open or moving from place to place, even simple medical advice becomes impossible to follow. I hope policymakers read your cover story and understand that prevention is cheaper and more humane than emergency care. We need shelters linked with basic health services, mental health support, and referrals that do not shame people.

Dr. Samina Yaqoob, Lahore

Your article captured something many of us feel but do not name: the breakdown of community spaces where people used to be seen. When I was growing up, neighbours checked on each other. People had informal work, shared courtyards, and relationships that created dignity. Now, many people are surrounded by crowds yet feel invisible. Your discussion of how modern economic pressures weaken social bonds should be part of every public debate on development. We cannot build a strong Pakistan by measuring progress only in money while relationships collapse.

Sajid Mehmood, Karachi

I work with a small welfare group that distributes food and blankets in winter. What stays with me is not only hunger, but the loneliness. Many people tell us they feel "erased." They are not asked their names. They are treated as a nuisance, not as human beings. Thank you for reminding readers that homelessness is not just a lack of a roof. It is also the loss of belonging, safety, and meaningful occupation. Please continue to highlight community-based efforts that restore dignity, not just charity.

Nazia Riaz, Social Worker, Rawalpindi

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

As a New Year begins, many of us in Pakistan greet it with prayers for ease, health, and stability. Yet we also enter 2026 with a sobering awareness: climate impacts are no longer distant forecasts. They are shaping daily life through heat, water stress, floods, smog, and the quiet erosion of biodiversity. In this New Year edition of Subh-e-Nau, we invite readers to begin the year with a different kind of resolution: to restore balance within our communities, and within the ecosystems that sustain us.

Our cover story, "Indigenous knowledge and practices: A needed balance to recover ourselves and our ecosystems," explores how Indigenous and local wisdom across South Asia, including Pakistan, can guide ecosystem recovery and climate resilience. It reminds us that Indigenous knowledge is not merely tradition. It is living ecological intelligence, rooted in respect, reciprocity, and careful observation of land, water, seasons, and species relationships. In a time when quick fixes and fashionable solutions often fail, this knowledge offers something deeper: ways of living that protect life.

Importantly, the story is grounded in the Occupational Security framework, an approach that expands the meaning of safety beyond humans alone. It asks us to protect the shared conditions of dignified life for people and the living world around us. In practical terms, it means valuing conservation practices that already exist in Pakistan. These include water wise traditions like matka (clay pot) irrigation, community managed water systems such as karez, and local floodwater farming approaches like rod kohi (spate irrigation), alongside a renewed commitment to indigenous planting and biodiversity.

As we turn the page into a New Year, we hope this issue encourages hopeful seriousness. Recovery is possible when we act with compassion, justice, and truth, and when we remember that our well being is tied to the well being of our rivers, soils, trees, birds, and future generations. Let this New Year be the beginning of a more rooted, responsible, and resilient Pakistan.

Shahida Kauser Farooq
Chief Editor

Cover Story

Indigenous knowledge and practices: A needed balance to recover ourselves and our ecosystems

Dr. Farrukh A. Chishtie

In an era of intensifying climate crisis and impacts, we must return to and recover through our indigenous knowledge and practices.

In Islamabad, spring can feel like a betrayal.

The air looks gentle, even fresh, and the hills in the distance appear washed clean after winter. Yet for many families, this is the season of tight chests, burning eyes, relentless sneezing, and hospital visits that arrive like clockwork. People learn the routines of survival. Windows stay shut. Children are kept indoors. Inhalers become a constant companion. Some households plan errands the way others plan around monsoon rain.

For years, this suffering has had a quiet, uncomfortable twist: it was not simply "nature doing its thing." It was, in part, the result of human choices about what belongs in an ecosystem and what does not.

Paper mulberry, planted widely decades ago, spread aggressively and displaced local vegetation. As it took over, it became linked to severe public-health harms during pollination season, including serious allergies and asthma, with reports of deaths and a near-impossible struggle to eradicate it because of its invasive nature. Even the city's bird life changed in ways people could see. Where Islamabad was known as a sanctuary, birds other than crows became rare, while crows helped propagate the tree's fruit.

This is not just a story about one invasive tree. It is a warning about imbalance, and a lesson about recovery.

“Across Pakistan and South Asia, climate impacts are already amplifying stresses that ecosystems have been carrying for decades: heat extremes, shifting rains, floods, drought, food insecurity, polluted air, and biodiversity loss. But climate change is not the only force destabilizing our living systems. The quieter force is how we build cities, how we farm, how we plant, how we consume, and what we consider “development.” Sometimes, we chase fast solutions that look green but weaken the very relationships that keep land and people resilient”

Across Pakistan and South Asia, climate impacts are already amplifying stresses that ecosystems have been carrying for decades: heat extremes, shifting rains, floods, drought, food insecurity, polluted air, and biodiversity loss. But climate change is not the only force destabilizing our living systems. The quieter force is how we build cities, how we farm, how we plant, how we consume, and what we consider “development.” Sometimes, we chase fast solutions that look green but weaken the very relationships that keep land and people resilient.

Eucalyptus is a sharp example. It survives easily and was favored because it needed little post-plantation care, but it “guzzles” water, invades local vegetation, and offers little to birds, insects, or animals. More recently, the mass plantation of Conocarpus has repeated the same pattern, showing how quickly we can forget ecological history. The tragedy is not only ecological. It is social and bodily. When an ecosystem is pushed out of balance, our daily lives, health, livelihoods, and sense of safety shift with it.

So where do we begin to recover?

One powerful beginning is to stop treating Indigenous knowledge and practices as folklore or nostalgia and start recognizing them as living systems of ecological intelligence and ethical responsibility. Across South Asia, communities have long held place-based ways of reading weather, soil, water, forests, rivers, and species interactions, then shaping livelihoods around those realities. This knowledge is not separate from survival. It is survival, refined across generations.

But we also need a language that helps modern policy, planning, science, and public health take this wisdom seriously without reducing it to a “toolbox.” That is where the occupational security framework becomes useful.

Occupational security is defined as the interrelated, sustainable, just, and compassionate protection of humans’ and non-humans’ right to a safe, peaceful, and dignified life, including engagement in occupation, with measures and solutions that are authentic and accurate. It expands the idea of occupation beyond humans, insisting that non-humans also have agency and life patterns that matter in their own right. The framework is explicitly values-based, grounded in sustainability, justice, peace, compassion, and authenticity with accuracy.

That may sound academic, but the implications are deeply practical.

When we plant an invasive species because it grows fast and “looks tidy,” we are not only making a landscaping decision. We are interfering with non-human occupations: pollinators seeking nectar, birds nesting and feeding, native trees exchanging nutrients, soils breathing, waterways moving, and seasonal cycles that regulate heat. When those occupations are

disrupted, human occupations also unravel: children miss school due to asthma, families spend more on health care, outdoor workers face higher risk, and communities lose shade, food sources, and biodiversity that buffers climate stress.

When ecosystems change, daily life changes. Climate resilience begins with the relationships we protect. In other words, ecosystem recovery is also self-recovery.

This cover story will explore Indigenous knowledge and practices across South Asia, including Pakistan, through the occupational security lens. We will ask a simple, urgent question: what would it look like to rebuild balance in a warming world by protecting the intertwined "daily lives" of humans and the living world around us?

We will visit mountain, desert, river, coastal, and urban contexts. We will look at stewardship traditions and the practical science embedded within them. We will also confront uncomfortable truths: how plantation drives can become ecological mistakes when they ignore native relationships; how "green" can become a performance; and how climate resilience cannot be imported as a slogan. It must be grown from the ground up, rooted in local ecology, ethics, and community leadership.

The paper mulberry lesson is a doorway. It tells us what happens when we treat ecosystems as blank canvases for quick fixes. It also hints at the path forward: learning to plant and live in ways that honor the life that already belongs here.

Because in the end, recovery is not a single project. It is a relationship restored.

Not "old stories": living instructions for survival

Indigenous knowledge is often described casually as "traditional wisdom," as if it belongs to museums and memory. But across South Asia — including Pakistan — it has always been something far more practical: a living, place-based way of understanding how land, water, seasons, plants, animals, and people co-exist, and what happens when that balance is disturbed.

In many communities, knowledge is not stored in textbooks. It is stored in timing (when the winds

change, when a river becomes dangerous), in observation (what flowering means for rainfall), in restraint (what must not be harvested, cut, or hunted), and in reciprocity (what is taken must be honored, and what is used must be protected). Occupational science research on Indigenous knowledge emphasizes exactly this: respectful, reciprocal human–non-human relationships, including protocols that prevent overuse and exploitation of plants and animals.

This is why Indigenous knowledge matters so intensely in an era of climate disruption. Climate change does not only bring new extremes; it also scrambles old patterns—the seasonal cues that communities have relied on for agriculture, water safety, grazing, fishing, and health. When patterns break, people naturally search for guidance. And often, the best guidance is not found in imported "one-size-fits-all" solutions, but in local ecological intelligence — updated, supported, and respected.

A South Asian reality: many ecologies, many ways of knowing

South Asia is not one ecosystem; it is many. From the Himalayas to the Indus plains, from deserts to deltas, from coasts to cities—each place has its own logic. Knowledge that works in a riverine floodplain may not apply in an arid rangeland, and what works in high-altitude forests may not work in a coastal mangrove system. Indigenous practices emerge from these specific conditions, and that specificity is their strength.

What often gets missed is that Indigenous knowledge is not only about "using nature." It is also about ethics: how to live without breaking the cycles that sustain life. Many Indigenous cultures hold restrictions — taboos, seasonal limits, and community rules — designed to keep use within a threshold that ecosystems can regenerate. These practices are not anti-development; they are pro-future.

Why we need a new lens: from "human security" to shared security

In mainstream climate talk, nature is frequently treated like a backdrop — something we manage so that humans can be safe. But the crises we face now are telling us something uncomfortable: if we

> “South Asia is not one ecosystem; it is many. From the Himalayas to the Indus plains, from deserts to deltas, from coasts to cities — each place has its own logic. Knowledge that works in a riverine floodplain may not apply in an arid rangeland, and what works in high-altitude forests may not work in a coastal mangrove system. Indigenous practices emerge from these specific conditions, and that specificity is their strength”

only protect humans while degrading the living world, we create a false safety that collapses later.

This is where the occupational security framework becomes a powerful lens for readers — because it makes the hidden connections visible. If we want to recover ourselves, we must also recover the occupations of the living world — because our safety is relational.

Occupational security is defined as the interrelated, sustainable, just, and compassionate protection of humans’ and non-humans’ right to a safe, peaceful, and dignified life, including engagement in occupation, through measures and solutions that are authentic and accurate. It also expands the very notion of “occupation” beyond being human-only, by including non-humans and their agency.

This matters because climate impacts are not only meteorological events; they are disruptions of daily life. And daily life is not just human. Pollinators have daily work. Rivers have seasonal rhythms. Birds migrate and nest. Trees exchange nutrients and anchor soil. When those non-human occupations are disrupted — through invasive plantations, habitat loss, pollution, heat stress — human occupations unravel too: farming fails, disease rises, floods hit harder, heat becomes deadly, livelihoods fracture.

Occupational security helps us speak honestly about this interdependence, without slipping into either romanticism (“Indigenous people are always perfect guardians”) or extraction (“Let’s take the technique but ignore the worldview”). It asks: Which lives are being protected, which are being sacrificed, and what values are guiding our decisions?

Indigenous knowledge includes spirituality — and that changes everything

A crucial difference between many Indigenous knowledge systems and modern technocratic policy is that Indigenous knowledge often acknowledges spirituality and relational responsibility—not as decoration, but as a core part of environmental decision-making.

Research discussed in the occupational security paper notes that acknowledging non-human agency and spirituality has major implications for environmental decision-making, including holistic approaches that recognize cultural, spiritual, and ecological factors together. This is not “anti-science.” It is an expanded ethics: a recognition that flourishing human societies are intimately tied to the health of ecosystems and their non-human members.

For Pakistan, where faith and spiritual meaning are woven into everyday life, this point can be transformative. It suggests that ecological care is not only policy — it is character, duty, and belonging.

The lens we will use: Occupational security (a practical field guide, not a slogan)

Climate conversations in Pakistan often reduce “security” to protecting people — homes, jobs, food, health. But what if our safety is inseparable from the daily life of the living world around us?

Occupational security offers a clear way to see that connection. It is defined as the interrelated,

sustainable, just, and compassionate protection of humans' and non-humans' right to a safe, peaceful, and dignified life, including engagement in occupation, through measures that are authentic and accurate. It also insists that "occupation" is not human-only: non-humans have their own agency and life activities that matter in their own right.

This matters because many climate "solutions" look impressive on posters but quietly damage ecosystems. When we replace native vegetation, drain wetlands, harden riverbanks, or plant invasive exotics for fast greening, we interrupt non-human occupations—pollination, seed dispersal, soil renewal, water filtration, migration, nesting. And when those break, human occupations break too: farming becomes riskier, heat grows deadlier, disease increases, and public health costs rise.

Occupational security helps us ask the missing question: Is this action protecting life — or just looking modern?

Why this connects naturally to Indigenous knowledge

Indigenous knowledge systems often begin with reciprocity and respect in human–non-human relationships. Many traditions include rules and restraints — what not to take, when not to harvest, how to give thanks — so ecosystems are not overused or exploited. They also recognize that spirituality and the voices of non-human beings can be part of ethical environmental decision-making.

So, when we place Indigenous practice inside the occupational security frame, we get a powerful "balance": knowledge + values + accountability.

Occupational security is explicitly values-based, grounded in sustainability, justice, peace, compassion, and authenticity with accuracy.

- Sustainability: Does it sustain life long-term—not just survive this season?
- Justice: Who benefits, and who pays the price (especially marginalized communities and ecosystems)?

- Peace: Does it reduce conflict and harm—between people, and between people and nature?
- Compassion: Does it treat suffering (human and non-human) as morally important, not collateral?
- Authenticity with accuracy: Are claims truthful—based on evidence, ecology, and long-term monitoring, not PR?

What stewardship looks like across South Asia: many places, one principle—reciprocity

Across South Asia, Indigenous and local communities have long acted as stewards—not through a single "model," but through a shared principle: life is sustained through relationship. In the occupational security framework, this relationality is explicit: security is not only about humans; it is about the interdependence of humans and non-humans within daily life and occupation. And Indigenous knowledge repeatedly returns to reciprocity and respect in human–non-human relationships.

To make this real, picture four South Asian landscapes, each with its own climate stresses and recovery pathways.

1) Mountains: "Hold the soil; hold the future"

In highland environments, the land teaches quickly: when soils slide, livelihoods slide with them. Many mountain communities have historically relied on practices that reduce erosion, protect water pathways, and spread risk across seasons. The "knowledge" here is not a slogan; it is generational reading of slope, snowmelt, vegetation cover, and timing. Occupational security helps us name what is really being protected: not only human farming and shelter, but also non-human occupations—soil organisms, watershed flows, forests regenerating, and species that depend on stable habitats.

2) Drylands and rangelands: "Restraint is an ecological skill"

In arid regions, survival often depends on knowing when not to take. Indigenous approaches commonly include limits, taboos, or community rules that prevent overuse — because ecosystems do not recover on human schedules. The occupational security paper notes that many Indigenous cultures use restrictions around plants and animals specifically, so they are not overused or exploited. In climate terms, that restraint is not "backward"—it is resilience: a way of keeping grasslands, shrubs, and soil moisture from crossing a point of no return.

3) Rivers and deltas: "Let the water breathe"

Floodplains and deltas teach a

Some notable Indigenous trees (a beginning, not a full list)

Sukh Chain provides thick shade, attracts birds and bees, and has potential for biodiesel.

Kachnar attracts birds; its buds are a popular vegetable.

Chanar offers strong canopy shade and changes color with seasons.

Sheesham is valued for timber and is a favorite of birds for its flowers.

Phulah has hard, durable wood with traditional uses.

A quick "acid test" for climate actions in Pakistan

Before we celebrate a project — plantation drives, river works, "beautification," new housing schemes — ask:

- Is it native to this ecology, or imported for speed and appearance?
- What non-human lives does it support or erase? (birds, pollinators, soil life, aquatic systems)
- Who is safer afterward — and who is less safe?
- Can we measure the truth of its benefits over time?

different lesson: water is not merely a hazard; it is a life system. Stewardship traditions often focus on protecting river edges, wetlands, and natural buffers that absorb shocks. When we remove those buffers, climate impacts hit harder. Occupational security's insistence that non-humans have agency and occupations of their own reminds us that a river is not an inert channel—it is an actor in the network of life, shaping and being shaped by human decisions.

4) Cities: "Recovery begins with what we plant and what we stop planting"

Urban ecology is where the story becomes personal for millions. Cities feel "separate" from nature, but they are ecosystems—made fragile by heat islands, pollution, and poor species choices. When exotics replace native vegetation, disharmony can spread across the entire life cycle, affecting humans, animals, birds, and insects. This is why occupational security demands authenticity with accuracy: if an intervention looks green but weakens biodiversity and health, it is not security — it is delayed insecurity.

The hidden engine underneath all four landscapes: spirituality and ethics

A key difference between many Indigenous knowledge systems and modern "management" is that Indigenous stewardship often carries spiritual meaning and moral responsibility. The occupational security paper describes spirituality and reverence for the natural world as intrinsic elements of Indigenous knowledge, guiding environmental stewardship and community well-being. It also emphasizes that many knowledge systems are passed through oral traditions and embed deep understanding of ecosystems and the cultural significance of species.

In Pakistan, where spirituality shapes daily life, this matters: it offers a bridge between climate adaptation and values people already live by — care, restraint, gratitude, and responsibility. This is indeed the values inherent in Islam and other faiths, and stewardship of our ecosystems is a spiritual responsibility, which needs to be implemented with commitment.

Pakistan's simplest climate lesson: what we plant decides what survives

If ecosystem recovery sounds abstract, Pakistan's plantation history makes it painfully concrete. When paper mulberry spread in Islamabad, it invaded local vegetation and became a serious public-health threat during spring pollination. Thousands suffered, with reported deaths linked to allergies and asthma, and eradication efforts struggled because of its invasive nature. The ecological damage was visible too: birds other than crows became rare, while crows fed on and propagated the tree's fruit.

Then there is eucalyptus—chosen for ease and survival yet described as a tree that "guzzles" water, invades local vegetation, and offers little to birds, insects, or animals. And the same pattern repeats: the mass plantation of Conocarpus is presented as evidence that authorities do not learn from past experiences. These are not side stories. They reveal a central climate truth: a fast green solution can create slow harm — to biodiversity, water security, and human health.

Life forms evolve in harmony with local conditions, and local vegetation is interlinked with humans, animals, birds, and insects; disturbing it can cause

imbalance across the entire life cycle. This is why "indigenous plantation" is not a preference — it is an ecological necessity.

Occupational security: turning planting into a values-based climate decision

This is where the occupational security framework becomes more than theory. Occupational security is defined as the sustainable, just, and compassionate protection of humans' and non-humans' right to safe, peaceful, and dignified life, with measures and solutions that are authentic and accurate. It expands "occupation" beyond humans by explicitly including non-humans and their agency.

So, when a city plants an invasive exotic for aesthetics or quick survival, it is not merely changing scenery. It is interfering with non-human occupations (pollination networks, nesting habitats, soil–tree relationships, water cycles), and that disruption eventually returns to human occupations as illness, heat stress, livelihood disruption, and ecological instability.

Occupational security is also values-based. Its five underlying values are sustainability, justice, peace, compassion, and authenticity with accuracy. These values give Pakistan a simple "compass" for climate action that looks green but may not be safe.

Compassion matters especially because it must extend to non-

Indigenous conservation practices in Pakistan (water wisdom you can still use)

Matka / Pitcher irrigation (clay-pot irrigation): A porous clay pot is buried near a seedling; water in the pot seeps slowly into the root zone—reducing evaporation and delivering moisture where it matters most. Research continues to study pitcher irrigation as a viable water-conservation approach under water-scarce conditions.

Karez (Qanat) systems, Baluchistan: Community-managed underground channels that bring water by gravity in arid landscapes—an ancient, still-functional form of water management that avoids pumping and reduces losses.

Rod-Kohi / Sailaba (spate irrigation): Seasonal hill-torrent floods are diverted to fields using bunds and temporary structures; long-standing local rules govern distribution and maintenance, making livelihoods possible in semi-arid zones.

Kunds (Thar region water storage): Covered underground tanks—built with local materials—designed primarily to secure drinking water in desert conditions. These are not "primitive" techniques. They are climate adaptation practices—refined through lived experience, aligned with local ecology, and often more water-wise than many modern habits.

> “Compassion matters especially because it must extend to non-humans through actions like conservation, affirming their right to coexist alongside humans; degrading ecosystems threatens non-human species and human survival together. Authenticity and accuracy matter because occupational security calls for transparency and full disclosure about security solutions—so the public can question motivations, efficacy, and long-term impacts rather than accepting PR narratives”

humans through actions like conservation, affirming their right to coexist alongside humans; degrading ecosystems threatens non-human species and human survival together. Authenticity and accuracy matter because occupational security calls for transparency and full disclosure about security solutions—so the public can question motivations, efficacy, and long-term impacts rather than accepting PR narratives.

Why Indigenous knowledge deserves respect (and why it matters for climate recovery)

In this worldview, non-human beings — animals, plants, and even geographical features — are not background scenery, but vital participants in the ecological web. Crucially, this knowledge is not shallow or vague. It is often carried through oral traditions across generations and contains deep understanding of ecosystems and the spiritual and cultural significance of species. That spiritual dimension is not “unscientific”; it is an ethics of care. The same text notes that spirituality and reverence for the natural world are intrinsic elements of Indigenous knowledge, guiding environmental stewardship and community well-being.

It also describes a profound respect grounded in spiritual beliefs, where ecological principles are often inseparable from what is sacred. This is exactly what climate change demands from us: not only smarter techniques, but better relationships—with truth, with land, and with the living world.

How to honour Indigenous knowledge while acting fast (ethics + action together)

Respect is not symbolic. It shows up in how decisions are made and who leads. Indigenous ecological knowledge recognizes that humans are not superior and that we have a responsibility to take care of each other and our non-human kins, as we are part of a larger ecological community. It is reflected in detailed understanding of interdependent relationships between species and habitats. This knowledge can also shape education and public responsibility: the paper notes call to include Indigenous ecological knowledge in education to foster responsibility and interconnectedness with the living world.

Respect in practice: do not extract, instead partner

Indigenous knowledge emphasizes reciprocity and respect in human–non-human relationships. It often includes protocols and ceremonies to honor animals and harvest sustainably, and taboos/restrictions that prevent overuse of plants and animals. So “using” Indigenous knowledge

while ignoring Indigenous rights, consent, credit, or benefits is not only unjust — it breaks the very logic that makes the practice sustainable.

And in climate decision-making, the paper highlights something powerful: acknowledging non-human agency and spirituality leads to holistic approaches that include cultural, spiritual, and ecological factors—recognizing the "voices" of non-human actors and widening ethics to include non-human welfare.

Pakistan action note: respect also means ecological accuracy

This article is blunt indeed: invasive exotics outcompete native species and can create serious health threats; it explicitly flags paper mulberry and Conocarpus as invasive species.

It also urges: all plantation, big or small, should be done with indigenous species alone — "please do not plant that one small exotic." So, in Pakistan, respect for Indigenous knowledge includes respecting local ecology itself: native trees, local water realities, local biodiversity, and long-term stewardship—not quick "green" aesthetics. If we honour Indigenous knowledge as living ecological intelligence — grounded in reciprocity, spirituality, and interdependence — we don't just "adapt to climate change." We rebuild the balance that allows ecosystems to recover and allows us to recover with them.

Closing call for real recovery

Choose one place, your street, school, park edge, canal bank, village boundary, and make a local pact:

- Plant and protect indigenous biodiversity (and refuse invasive "fast green" fixes).
- Treat water like a living relationship — learn from matka irrigation, kunds, karez, and Rod-Kohi traditions.
- Demand truth in climate projects — authenticity with accuracy is non-negotiable.

Because the real balance we need is not only ecological. It is moral: a way of living where human recovery and ecosystem recovery happen together, as shared security.

A pact with place: recovery as a shared way of living

This story began with a simple truth: when ecosystems are pushed out of balance, our bodies, livelihoods, and communities pay the price. The way forward is not to reject modern science — but to restore balance by treating Indigenous knowledge and practices as living ecological intelligence, worthy of respect, protection, and partnership.

The occupational security lens makes the promise — and the responsibility — clear: *it is the interrelated, sustainable, just, and compassionate protection of humans' and non-humans' right to a safe, peaceful, and dignified life,* through solutions that are authentic and accurate. The framework insists that "occupation" is not human-only; non-humans have agency and daily life patterns that also deserve security. Its guiding values—sustainability, justice, peace, compassion, authenticity with accuracy — are a practical compass for climate action.

And Pakistan already holds powerful examples of conservation in practice — approaches that save water, protect soil, and work with local ecology rather than against it. Occupational security warns us about solutions sold through slogans. It argues that authenticity and accuracy require full disclosure and transparency from authorities — so people can question motivations, efficacy, and long-term impacts. In Pakistan, that means plantation drives, water projects, and "beautification" schemes must be evaluated honestly: survival rates, water demand, biodiversity outcomes, health effects — not PR. And compassion must be extended beyond humans: conservation becomes a direct expression of compassion in an era of ecosystem collapse, because degrading ecosystems threatens non-human species and human survival together.■

Dr. A. A. Quraishy

Arabian sea in shambles

Although the coastal banks in several countries are under threat of pollution and degeneration at various levels, the one on the Arabian sea is one of the worst. It also extends to several ports of India particularly in Gujrat and Maharashtra, but the worst area lies in Pakistan.

It was not as bad up to the late fifties. It was like we see in national geographics. Once right at the level of our feet, on the pier of Keamari where boats put-putted for the passengers to Manora, mud crabs scurried before your very eyes. The minnows and fries of several species of fish swam fearlessly in the crystal-clear water. Children giggles and swam effortlessly, urging the visitors to toss a coin in the clean water. As it went dancing down, they divide in and recovered it before it touched the bottom of four or five feet of water. It fun for everyone and a joy to see the restless sea just as it was a million year ago.

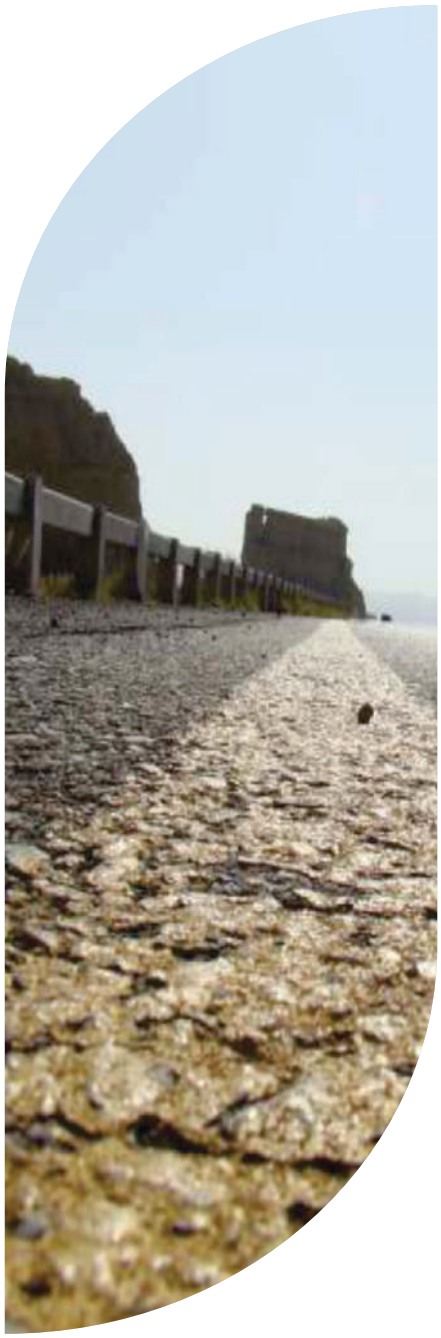
We watched mighty waves in the

open sea from manora island in the forenoon. One could see huge, three to ten pounder tunas leap high in fright from the snapping barracudas, shark and mackerels. Shoals of bait fish as large as twenty to thirty feet across and five feet thick could be spotted frequently.

Anchovies and Clupeiformes forming in groups were plentiful right up to the pillars of netty jetty bridge. The contractors of the fish for Karachi Zoo, the exuberant, hardy and versatile ABU, would just through a net from the shore and haul five, ten to twenty kilos of fish fries for the pelicans, storks and ducks of the zoo. This phase continues right up to the industrial boom of Ayubs regime.

The highly polluted coastline is stinking with heavy metals that is washed down untreated from over three thousand tanneries have been pouring millions of kilos of arsenic, mercury, cadmium, lead, alkaline and pesticides. Oil and sludge, also find its way into the sea from several oil refineries. From Ibrahim Hyderi to Jiwani, tons of plastic bottles and polythene bags are to be seen right up to forty miles or more, across the sindh and mekran coast.

In this very water were whales of different species and the largest of fish, the whale shark, measuring fifteen feet, floating harmlessly just below the sea surface in the clean sea, chasing planktons, fries and small fish. I have seen lobster weighing upto four kilos in the Churna island and light house coastal belt. Now there is total devastation as pollution, illegal



netting and overfishing for the past three decades has taken its toll. The sindh environment protection agency, the coastal development authority, the KPT and other marine conservations and development authorities are totally unstirred.

Islamabad knows not even a drop

Prawn

Parrot fish

of sea science and does not seem to care. They treat the sea as if it were an alien territory.

The bottom line is that in the last 60 years, we do not have any pier, not any jetty for the recreation starved citizens and also no anti Katra campaign. The municipal wastes and the industrial effluents from Lyari and west wharf were just a trickle for the extremely efficient purifying potential of the ocean. It washed away most of it to the mangroves and diluted it with the rising ebb and tide every six hours. Water was just a little murky at places but one could jump and swim in it without feeling the stink and smell. Ram Swami of Hindus which still exist on the KPT pier near tower area was a clean heaven for the bathers.

I have seen transparent water lapping at Clifton where smaller fisherman fixed their nest and hoisted them for fish that they could get for the pot and for the piggy bank. But the best was in the open sea. Once I sailed in the company with Dr. Rahimullah Quraishy, the marine director general of Pakistan. In his newly acquired machhera (fisher) research trawler, to survey what existed in the coastal water. We may have gone for 1 hour about three kilometres from the coast (Manora and other buildings were visible) the crew cast the net which was a very efficient modern fishing kit. The depth was around twenty to thirty feet, the bed was much deeper as the sonar monitor it constantly, and purpose of the expedition was exploratory.

After half an hour, the heavy sea going trawler tilted some 40 degrees with the weight of catch. After which the fishing net was lifted mechanically and when released at the deck, presented a fascinating sight. There were groupers, barracudas, lobster, tunas, pipefish, trevally, sea snake, prawn, crabs of three species, skates, rays, puffer, porcupine fishes, triggers, sergeant major, catfish, two sea horse, a parrot fish, different versions of Pomfret and a lone starfish had been scrapped out of the shallow and sandy bed.

Tunas

Skates

Pomphret

Sea snake

But the best was that every species was clean, healthy and colourful in its original marking. No cast over, plastic cans, on empty coke tins, no bottles, on drums, bucket, no rubbish only few of sea weeds came. The bed was salubrious

Sea horse

Crabs

exactly the same manners in which the eco system was designed by nature three million year ago.

We did not drag the fishing nets on the seabed for more marine life. Down there where oysters, urchin, hydroids, periwinkles, barnacles, whelks, clams, clown, sun fish, jelly fish, mussels, cockles, murex, blue crab, sand dollar, pen shells, angel wings, corals, butterfly fish, octopus, conch, snappers and even barber fish, that love manicuring the large denizens of the sea.

Nor did we go for dolphins, but they were all along the coast from Hawks Bay onwards to the last limit of the open sea on the region of Lasbela, Ormara and Jiwani which was crowned with several species of mantas, hammerhead and saw-nosed sharks. I have seen a sword as long as seven feet dangling sportingly on one of the huts of the fisherman and way to sandspit. Smaller sized sawfish were every where.

An old man hand on the Mubarak village admitted, he has seen some twelve footers and larger saw-nosed sharks, demons of the sea that must have been a frightening sight. I have seen a painting that shows a tiger fish thrown across a camel's back with its tail reaching the belly level of the camel and the head with sharp teeth of the brute opposite to this end on the other side. It must have measured around fifteen feet from tip to tip and in the good old days this sight was not a rarity. Very sadly, the Arabian sea has now been turned into the miles of barren green desert.■

Zahrah Nasir

Hanging Baskets

For those of you desirous of adding either a glorious splash of vibrant color or a cooling concoction of green to your garden, courtyard, veranda or balcony area, opting for some kind of hanging basket is an excellent choice. And all those organic 'foodies' out there: what can be better than increasing your production space by 'growing on high'?

Hanging baskets do not, necessarily, have to be exactly a traditional basket. But since our garden supply sellers have not really got their act together in this regard, finding specially designed hanging baskets can be next to impossible which is where improvisation comes in.

It is, of course, perfectly feasible to utilize most kinds of baskets — be these shopping baskets, storage baskets or otherwise — if they are deep enough to hold the necessary amount of soil/compost to provide enough rooting space for the species of plants chosen to 'hang'. The baskets can be of any shape if they are to be suspended from loggias, strong frames of metal, wood or other suitable material or even from mature tree branches,

> You can create so much beauty around your garden by not just planting in the soil but making use of hanging baskets to grow flowers and herbs

but those to be suspended from wall brackets or fastened directly to the wall, must have flat backs otherwise they are liable to be unbalanced.

Hanging baskets can, with care, be contrived out of a varied selection of items — preferably recycled ones rather than newly bought — with vegetable/fruit baskets, be these plastic or other material such as very strong wire mesh, being ideally suitable as long as there are plenty of drainage holes in place. If, on the other hand, you have something usable which does not have drainage holes and in which drainage holes cannot be made — this is particularly relevant to some, not all, ceramics — then it is a simple matter to use the item as a hanging container in which to place the potted plants of your choice. But please be careful not to overwater as, excess water lying inside the 'pot holder' cannot escape and can be detrimental, even fatal, to plants; it also provides the perfect breeding ground for mosquitoes and creepy-crawlies.

Soil/compost for use in hanging baskets/pots should, preferably, be completely organic. A 50/50 mix of

Asparagus Ferns

“Perennial plants will, naturally, require regular feeding — this amount varying from species to species and the time of year — with liquid plant food, again preferably of a purely organic composition, being used after the bulk of essential nutrients and minerals have been taken up by the plants over the first six months or so of usage”

Lobelias, begonias and trailing petunias are great

sweet earth and homemade, organic compost, is perfect as the compost will, if correctly made, provide enough nourishment for a wide range of purely seasonal plants to sustain them throughout their growing period. Perennial plants will, naturally, require regular feeding — this amount varying from species to species and the time of year — with liquid plant food, again preferably of a purely organic composition, being used after the bulk of essential nutrients and minerals have been taken up by the plants over the first six months or so of usage.

Hanging ‘baskets’ need not be made of any of the aforementioned items but can, with a little imagination, be contrived out of things such as an old pair of strong boots or ‘closed’ shoes, firmly nailed or otherwise securely fastened, directly to walls, on to wooden posts or suspended from some form of support bracket. I have, for many years, utilized free-standing boutique clothes rails to suspend a variety of hanging ‘containers’ which, at one point, included a pair of cut down, strong denim, jeans with the bottom of the legs tied closed with fishing line, the waistband secured to the rail with plaited fishing line, the whole filled up with soil/compost, then trailing tomatoes planted in the top and in carefully angled slits, each one just large enough in which to push in a tomato seedling, cut at eight to 10 inch intervals in the jeans’ legs.

The majority of gardeners will

want to fill their hanging 'baskets' with a striking arrangement of upright and trailing flowering plants, depending on the season. This being September, and on until the end of November, a selection of the following is ideal: petunias, lobelia, pansies, violas, begonias, fuchsias, geraniums, salvia, cineraria, phlox, calendulas and thunbergira/black-eyed Susan, grown in individual 'clumps' or in mixed arrangements, providing color for weeks, sometimes months, on end.

Fuchsias

If, however, you yearn for for cool green or colored leaved perennials, then there is a wide selection of trailing and suitable upright species to be found in the numerous plant nurseries we are now lucky enough to have in most parts of the country. Chlorophytum/ spider plants, asparagus ferns, green or variegated ivy, pelia muscosa/ Artillery plant, tradescantia/ wandering Jew, zebrina/wandering sailor and coleus are all extremely useful in this respect.

Hanging planters of herbs are a wonderful garden addition for adventurous cooks: basil, thyme, sage, oregano, marjoram and mints all enjoy growing on high as long, as with all plant species, their daily needs are adequately catered for in all respects.

Basil

"Hanging planters of herbs are a wonderful garden addition for adventurous cooks: basil, thyme, sage, oregano, marjoram and mints all enjoy growing on high as long, as with all plant species, their daily needs are adequately catered for in all respects"

Remember to take into account the amount of direct sun and shade in the locations chosen in which to hang your purely ornamental or edible baskets.■

Sultan Kiani

Guide to Safe & Responsible Use of Artificial Intelligence

You have probably come across a recent viral incident in which a Pakistani newspaper published an AI-generated article without even removing the ChatGPT prompt. This is not an isolated workplace blunder. Read on to learn more about using AI safely.

The internet is flooded with hilarious memes inspired by real incidents in which people ended up in similar embarrassing situations. Improper use of AI in office work can backfire, sometimes even costing employees their jobs. However, that is the least concerning problem, because AI blunders in critical fields can lead to far deadlier consequences.

This month's Safety article highlights some harrowing stories in which AI has been linked to catastrophic incidents, some of

which proved fatal.

Misleading Healthcare Advice

For years, people have looked up health information on sites like WebMD and Mayo Clinic. Today, AI chatbots can answer health-related questions, making information more accessible and seemingly accurate. Nonetheless, AI-generated health advice, like online health information, should only be used for educational purposes and not as a substitute for professional medical consultation. Yet people frequently ignore this rule and pay the price. Two such documented mishaps are highlighted below.

Horrible Misdiagnosis

Many Reddit users have shared stories about checking their symptoms on WebMD, only to misdiagnose themselves with cancer or worse. Just as WebMD searches can falsely convince people they are seriously ill, AI chatbots can also dangerously rule out cancer in real patients.

The case of Warren Tierney is a recent and tragic example of how trusting AI for health-related decisions can prove costly. This 37-year-old man from Ireland experienced throat pain and difficulty swallowing, so he asked a chatbot for a diagnosis. After assessing the symptoms, ChatGPT provided a list of possible causes. Tierney then asked whether he had cancer, and ChatGPT confidently replied, "highly unlikely," offering reassurance. As he began taking medication, his condition improved for a while, seemingly confirming the AI's assessment.

That relief was short-lived. His symptoms returned and worsened, forcing a hospital visit. It was only then that Tierney discovered he had stage 4 esophageal cancer. Unfortunately, he is not expected to live long due to terminal cancer. A timely diagnosis could have increased his chances of recovery, but now it's too late.

Bromide Salt Poisoning

While it is good to focus on nutrition, wrong dietary advice can do more harm than good. Annals of Internal Medicine documented a case of bromide poisoning linked to AI misuse. It began when a 60-year-old man relied on AI to find a healthier substitute for table salt.

> "Just as WebMD searches can falsely convince people they are seriously ill, AI chatbots can also dangerously rule out cancer in real patients"

ChatGPT offered a list of alternatives, including sodium bromide.

The individual then decided to replace regular salt, sodium chloride (NaCl), with sodium bromide (NaBr) without considering the risks. Soon, his health deteriorated due to bromism, eventually requiring hospitalization. Luckily, he fully recovered after receiving medical treatment.

Lessons Learned: Always consult a qualified physician about your health concerns. Never make major dietary changes without guidance from a medical professional or certified nutritionist. Always

Sodium bromide (NaBr) is highly toxic and not suitable for use as edible salt i.e. sodium chloride (NaCl)

inform them about your medical history, including any pre-existing conditions or allergies.

Autonomous Vehicles Turn Deadly

Artificial intelligence is turning the long-held dream of self-driving vehicles into reality, a major milestone in transportation. However, it is too early to celebrate. The technology is still error-prone, and there have been reports of multiple fatal accidents. The 2018 case of Elaine Herzberg serves as a warning about the risks of AI-powered autonomous vehicles.

It happened on March 18, 2018, in Arizona (USA), when a 49-year-old cyclist was killed by a speeding autonomous vehicle. Although the victim didn't properly check for oncoming traffic, the vehicle's automatic emergency braking also failed, making an avoidable accident fatal. An NHTSA report confirmed that self-driving vehicles have been linked to hundreds of crashes, resulting in multiple fatalities in the United States alone. Additionally, several online videos show how AI-based autonomous vehicles can fail to detect real-life road hazards, exposing critical flaws.

Lessons Learned: Tesla and other carmakers using autopilot technology have warned drivers to stay alert, because these systems are designed to assist with safe driving, not to replace the driver entirely. The technology needs further improvement before it can be used with minimal or no human supervision.

> "An NHTSA report confirmed that self-driving vehicles have been linked to hundreds of crashes resulting in multiple fatalities in the United States alone"

Criminal Use of AI

The internet is flooded with edited images and videos of celebrities. Some of these AI-generated creations look hilarious, while others stand out for their creativity. Deepfake videos are made using advanced AI video generators and voice-cloning software to make them look convincingly realistic.

The fair use of such content for entertainment purposes may be tolerated, but some cybercriminals are now using the same tools as weapons. This is where the technology takes a dark turn. These tools can fuel false allegations, ruin someone's reputation, and cause irreversible damage. They can also jeopardize cybersecurity, enable identity theft, and result in financial losses in a variety of ways.

One shocking example was a 2020 bank heist in the UAE, where cyber fraudsters used an AI-generated voice clone of a company director and got away with $35 million. In 2023, a hoax featuring an edited image of a Pentagon explosion caused panic and contributed to a short-lived stock market drop. These incidents show how criminals armed with AI tools can outsmart even robust security systems.

Lessons Learned: Governments and technology companies need strong alliances to track down those involved in such illicit activities. Regular internet users also need to be vigilant. Avoid falling for deepfakes and strengthen your digital privacy and security practices.

The fake AI image of a Pentagon explosion caused panic in 2023

> “Cyber criminals are now using the same AI tools as weapons. This is where the technology takes a dark turn as such tools can be used to fuel false allegations, ruining someone’s reputation and leading to irreversible damages”

Remember: AI is developed by humans to assist humans in improving work efficiency and making life easier. However, AI cannot fully replace humans and must always be used responsibly.

Fun Fact

I asked ChatGPT for a list of AI-related incidents, and it responded with examples, including the deadly Boeing 737 Max crashes, allegedly caused by MCAS failure. Anyone unfamiliar with the technology might have included this in an article, but my experience as an aviation enthusiast told me it was incorrect. While MCAS is a technology designed to help keep the aircraft safe, it is not considered an adaptive AI tool, because it relies on software-based sensor inputs rather than learning or adapting like modern AI systems.
This is yet another example of why you must not blindly trust artificial intelligence. It can make unimaginable errors.■

Mrs. Shahida Kausar Farooq
Dr. Farrukh A. Chishtie

Pakistan's marine ecosystems in crisis: urgent action needed to combat sea pollution

Pakistan, blessed with a 1,046-kilometer-long coastline along the Arabian Sea, possesses a rich and diverse marine ecosystem that is critical to the country's economy, environment, and food security. This region is facing a critical crisis which must be addressed immediately to curb the incessant environmental and local community damage that they incur daily.

From the bustling commercial hubs of Karachi Port and Port Qasim to the emerging strategic gateway of Gwadar, Pakistan's coastal and marine resources support millions of livelihoods through fisheries, trade, tourism, and maritime industries. Yet, despite this strategic importance, Pakistan's seas are facing an unprecedented crisis: rampant pollution that threatens marine life, public health, and economic sustainability.

As an environmental publication with over two decades of dedicated coverage on climate, public health, and ecological issues, Monthly Subh-e-Nau (SN) has long been advocating for marine conservation. In 2005, SN successfully engaged with the then President of Pakistan, General Pervez Musharraf, presenting the landmark "Save the Sea" Project, a pioneering initiative aimed at addressing sea pollution and protecting marine biodiversity. In 2005, an historic meeting was convened at the Governor House, Karachi, chaired by the then Governor of Sindh, Dr. Ishratul Ibad. The meeting resulted in the formation of a committee tasked with developing strategies to curb pollution and promote sustainable marine management. Unfortunately, the committee's efforts could not produce long-term solutions, and in the years since, the condition of Pakistan's coastal waters has only deteriorated, exacerbated by rapid urbanization, industrial growth, and weak enforcement of environmental regulations.

The growing menace of sea pollution

Pakistan's major ports, Karachi Port, Port Qasim, and Gwadar, now rank among the most polluted coastal zones in South Asia. Untreated industrial effluents, municipal sewage, oil spills, plastic debris, and other hazardous wastes are discharged continuously into the sea. These pollutants accumulate in the water and sediments, adversely affecting marine flora and fauna. Studies indicate elevated levels of heavy metals such as mercury, lead, and cadmium in commercially important fish species. Consumption of contaminated seafood poses serious health risks to coastal populations, including neurological and developmental disorders in children, kidney and liver damage, and other chronic diseases.

The ecological consequences are equally severe. Marine species are experiencing population declines, coral reefs and seagrass beds are under threat, and the overall biodiversity of Pakistan's coastal waters is declining. The pollution not only undermines the natural resilience of the marine ecosystem but also jeopardizes Pakistan's fisheries sector, which contributes significantly to domestic food supply and export revenue. Fisheries employ over a million people directly, while many more depend indirectly on the sector, making marine pollution an urgent socio-economic issue as well.

Mangrove depletion: A silent crisis

Compounding the problem is the rapid degradation of mangroves along the Sindh and Baluchistan coasts. Mangrove forests are natural buffers against climate change, protecting coastal communities from storm surges, tidal flooding, and soil erosion. They also play a crucial role in filtering pollutants, stabilizing sediments, and providing breeding and nursery grounds for a vast array of marine species. Yet, despite their critical ecological function, Pakistan has lost significant portions of its mangrove cover due to deforestation, land reclamation, and unregulated industrial activities. Restoration and protection of mangroves must be treated as a national priority, not just for environmental reasons, but as a key climate adaptation, climate mitigation and public health measure.

Mangrove forest

Economic implications of marine pollution

The economic costs of neglecting Pakistan's seas are profound. Polluted waters reduce fish stocks, threaten aquaculture, and diminish the export potential of seafood products. Tourism and recreational activities along the coast are affected by unsightly and unhealthy beaches, reducing the potential for foreign exchange earnings and local employment. Moreover, industrial pollution and oil spills can lead to costly cleanups and legal liabilities, diverting resources that could otherwise be used for sustainable development. By failing to address marine pollution, Pakistan risks not only environmental degradation but also long-term economic losses and social dislocation.

A call for comprehensive action

Addressing this crisis requires a holistic and multi-pronged approach. In a recent letter addressed to the Honorable Prime Minister of Pakistan, Mian Muhammad Shehbaz Sharif, Monthly Subh-e-Nau outlined a set of actionable recommendations that, if implemented, can reverse the deteriorating condition of Pakistan's seas and safeguard marine biodiversity for future generations.

- First, a nationwide cleanup of all seaports and coastal waters must be initiated immediately. This entails the removal of solid waste, dredging of contaminated sediments, and the safe disposal of hazardous materials. Parallel to this, stringent monitoring and enforcement mechanisms are needed to prevent the discharge of untreated industrial and municipal waste into the sea. Industries must be mandated to treat effluents to internationally accepted standards, and municipal sewerage systems must be upgraded to prevent untreated sewage from entering marine ecosystems.
- Second, Pakistan must undertake a national mangrove restoration and protection campaign. This requires close collaboration between federal and provincial governments, local communities, non-governmental organizations, and the private

sector. Mangrove plantation programs should be prioritized in areas most affected by deforestation, and strict legal protections must be enforced to prevent further degradation. Beyond ecological restoration, this initiative will strengthen coastal resilience against climate change-induced disasters such as cyclones, sea-level rise, and coastal erosion.

- Third, effective inter-institutional coordination is crucial. Climate, maritime, naval, fisheries, and port authorities must work together in a synchronized framework to ensure that regulations are implemented consistently, pollution sources are identified and controlled, and response mechanisms for environmental emergencies are operational.
- Finally, there is an urgent need to revive and empower a national mechanism dedicated to addressing marine pollution. This body should be results-oriented, with clear timelines, defined responsibilities, and accountability measures. Periodic audits and impact assessments must be conducted to evaluate progress and ensure continuous improvement in marine conservation efforts.
- Scientific monitoring, research and development must be systematically conducted for the public and politicians to properly devise evidence-based policies. There is a severe lack of basic understanding of our local ecosystems and without this we cannot develop proper plans for ourselves as well as in the long term, including for our upcoming generations.

Public health and intergenerational responsibility

Protecting Pakistan's seas is not only an environmental imperative but also a public health necessity. Coastal communities are on the frontlines of exposure to contaminated water and seafood, and failure to act endangers the health of millions. Additionally, safeguarding marine biodiversity and ecological balance is a matter of intergenerational justice: Pakistan's children and grandchildren deserve a sustainable, productive, and safe marine environment.

> "Mangrove forests along Pakistan's Sindh and Baluchistan coasts serve as natural shields against storm surges, flooding, and erosion, while providing critical breeding grounds for marine life. Despite their importance, large swathes have been lost to deforestation, land reclamation, and unregulated industrial activity. Protecting and restoring mangroves is not optional — it is essential for climate adaptation, ecological stability, and public health"

Conclusion

Pakistan stands at a critical juncture. The choices made today regarding marine conservation will determine whether the country's coastal resources are preserved or degraded beyond repair. While challenges are significant, they are not insurmountable. With political will, effective governance, and active engagement of civil society and the private sector, Pakistan can restore its seas, protect marine life, and secure the health and prosperity of its coastal populations.

Monthly Subh-e-Nau calls upon the Honorable Prime Minister, federal and provincial authorities, port and naval administrations, and all stakeholders to prioritize marine conservation as a national agenda. Immediate, coordinated, and sustained action is essential to combat sea pollution, restore marine ecosystems, and ensure a safe and productive coastal environment for generations to come.

The time for debate has passed. The time for action is now. Pakistan's seas are calling for attention — failure to respond would be a loss borne not just by the present generation but by the future of the nation. ■

Cat Tilke

The plants that thrive in salt: could halophytes help save coastal farming?

As rising seas salinize the soils of the Venice lagoon, scientists and chefs are turning to long-forgotten wild herbs.

Photo Credit: imageBROKER/Lothar

Once dismissed as weeds, the salt-loving plants are being rediscovered as the lagoon's changing climate forces a radical rethink of what can grow in its soils

On the scrubby banks of the rural swathes of the Venice lagoon, an evening chorus of cicadas underscores the distant whine of farmers' three-wheeled minivans. Dotted along the brackish fringes of the cultivated plots are scatterings of silvery-green bushes – sea fennel.

This plant is a member of a group of remarkable organisms known as halophytes – plant species that thrive in saltwater. Long overlooked and found growing in the in-between spaces – saltmarshes, coastlines, the fringes of lagoons – halophytes straddle boundaries in both ecosystems and cuisines. But with shifting agricultural futures, this may be about to change.

Once known as the breadbasket of Venice, farmers on the island of Sant'Erasmo are facing a challenge that will soon become commonplace in coastal marshes worldwide. A trifecta of rising sea levels increases in average temperature and decreases in rainfall is leading to a rise in the concentration of salts in the soil – a death knell for many traditional crops, which can survive only up to a salt concentration of about 1.2% – about one-third that of seawater.

Sant'Erasmo's soil has long held a trace of salinity, just enough to give its prized violet artichokes their vivid hue and delicate flavour. But the balance is delicate: too much is bad news. Last year, the Food and Agriculture Organization of the United Nations estimated that about 10% of the world's total land is currently affected by salinity, and that this may rise to between 24% and 32% of the total land surface because of the climate crisis.

"I started to become fascinated by these plants more than five years ago. They're a bit of a miracle," says Filippo Grassi, an environmental scientist at the Tidal Garden, a research agency based in the Venice lagoon exploring the edible potential of halophytes for cultural adaptation to climate change.

"And then Venice is the perfect playground because you have a very interesting and nuanced environment that has been lived by humans and changed and transformed by humans for centuries."

From Sant'Erasmo, the spires of Venice, majestic – and unavoidably sinking – are just visible across the water. The Tidal Garden's task is to unite these two worlds.

They work with six or seven species, including marsh samphire, monk's beard and purslane. For a long time, these crops have been foraged by coastal communities in Venice and beyond – a Tudor record lists three accidental deaths in England linked to samphire foraging in the late 1500s – but never taken seriously as a commercial crop.

"Really, a lot of [it] is about telling the story and it's about piecing it together. The farmers say: 'Oh this plant? We know people who are now 89-year-olds who used to pick it'."

> "This plant is a member of a group of remarkable organisms known as halophytes – plant species that thrive in saltwater. Long overlooked and found growing in the in-between spaces – saltmarshes, coastlines, the fringes of lagoons – halophytes straddle boundaries in both ecosystems and cuisines"

Photo Credit: Daniel Lober

Purslane is one of several halophyte species being cultivated

A performance created by the Tidal Garden and Gaia Ginevra Giorgi to help grow public awareness of the project

> “In Tunisia, we’re going to start working in a different way – they don’t really use these plants as food for humans, it’s mostly food for animals. And so we’re going to try and explore local recipes there,” Grassi adds

says Grassi. “Most of these [foraged] plants were eaten at some point and then were forgotten.”

Echoing these concerns, Lodovica Guarnieri, a researcher, explains the more complex barriers to embracing these species: “For farmers it’s still seen as a weed, or even worse, as a warning sign. If marsh samphire starts appearing in someone’s plot, it means they’re in trouble.”

She is not wrong. While samphire’s specialised glands and internal pump-like channels enable it to move salt through its system efficiently in brackish water of 1-1.6% salinity, such concentrations would be disastrous for the humble tomato, inhibiting its very germination.

On Italy’s western coast at the University of Pisa, a team of researchers is using halophytes to address this very issue. Antonella Castagna is an associate professor specialising in eco-friendly solutions to crop fertility problems. Last year, she and her colleagues found that intercropping and rotating tomatoes and glasswort respectively led to more nutritious and bountiful harvests. The researchers envisage planting halophytes on the tracks and fallow land bordering farmers’ fields.

They believe this conservative approach would enrich the soil without requiring farmers to sacrifice land already designated for cash crops. The urgency of the problem helps too. “Luckily from the point of view the situation now is so dramatic and salinity is so dramatically increasing that farmers are recognising the problem,” says Castagna.

“In one area we’re working, there is a producer of grain, and his yield is progressively reducing, as you move from the internal field towards the sea. They [now] get the same yields in fields that are twice as wide as before, so there is an economic issue.

“It’s bad from one point of view, but it’s good from another because

people have finally started to trust in our operation. We hope that working together we can try to find some solutions."

The obscurity of halophytes and suspicion of their weed-like ability to thrive in harsh environments is partly why, in Venice, the Tidal Garden has recruited chefs, artists and poets to its cause, aiming to grow a steady awareness and commercial demand. And how do you create a demand?

"Basically, spike people," says Grassi. "There's a lot of work going into embedding these plants into the normal food culture of the place. We use them as ingredients in food that people already know, such as pizza. We bring them into the culinary language."

He points to a collaboration with AEDS, an organisation based in Tunisia, where even higher soil salinity and a much drier climate mean halophytes are also being cultivated.

"In Tunisia, we're going to start working in a different way – they don't really use these plants as food for humans, it's mostly food for animals. And so we're going to try and explore local recipes there," Grassi adds.

In Venice this approach has saved the herbs from obscurity. The venerated Gelateria Alaska has created a samphire sorbet. One of the city's most exclusive eateries, the two-Michelin-starred Glam Enrico Bartolini, has an avowed halophyte-lover at the helm in the form of its resident chef, Donato Ascani.

> "Every chef knows that every time he changes location, there is a spirit of adaptation to the new place and the crops," he says. "Similarly, there will also be adaptation to climate change. We'll go with whatever [nature] has to offer; it's not like we can just come back and grow crops in the kitchen."

"I was very lucky to come to Venice because there are ingredients that are unique in Italy," he says. "Wild herbs – the soil where they're grown – our vegetables have a particular savoury taste that's hard to find in [the rest of the country], so this soil allows us to have an extra edge with what we do in the kitchen."

Ascani is acutely aware of the changes that are already affecting seasonal availability of the lagoon's offerings.

Halophytes are increasingly being used in Venetian cooking

"Every chef knows that every time he changes location, there is a spirit of adaptation to the new place and the crops," he says. "Similarly, there will also be adaptation to climate change. We'll go with whatever [nature] has to offer; it's not like we can just come back and grow crops in the kitchen."

For Ascani, halophytes represent a way to connect his customers to the lagoon, and "understand the importance of all the land offers", even if those offerings are obscure.

And in their resilience, halophytes are important, says Ascani: "We can't tell the season from the calendar anymore. We have to look at it in the morning, when you go to the market to buy groceries."■

(Courtesy: Guardian UK)

Dr. Farrukh A. Chishtie

Turning Stress into Strength: How Positive Psychology Can Help Us Thrive in Pakistan

Stress is everywhere in modern-day Pakistan. Whether it is the weight of household responsibilities, long hours in school and work, financial anxiety, or rising uncertainty in our cities, many people feel emotionally and mentally stretched thin.

Yet despite all these challenges, rather than merely offering relief, a powerful new science is offering something deeper, renewal, growth, and self-discovery. That science is Positive Psychology.

Unlike mainstream psychology, which traditionally focused on diagnosing illness and reducing symptoms, Positive Psychology shifts the question from "What is wrong with me?" to "What is strong in me?" This strength-based approach rejects the notion that we are defined by our problems. Instead, it invites us to recognize our unique traits, grow through adversity, and build a life filled with meaning, connection, and accomplishment.

One of the cornerstones of this approach is the study of character strengths. These are the inner light and strength each of us carries, such as creativity, perseverance, kindness, honesty, and forgiveness. Identifying and using our strengths not only boosts confidence but also reduces anxiety and improves coping during stressful times. Among these strengths, spirituality holds a special place, especially in cultural contexts like Pakistan's. Spirituality refers to a sense of connection to something larger than oneself, whether it be a divine presence, nature, or a broader moral purpose. Engaging in spiritual practices, such as prayer, meditation, gratitude, or service can create meaning in difficult moments, anchor us during uncertainty, and offer deep emotional nourishment. It also provides hope, which is a vital buffer against despair.

Another powerful idea in Positive Psychology is the growth mindset—the belief that our abilities and intelligence are not fixed but can be developed through effort and learning. This mindset challenges the damaging belief that failure is a sign of weakness. Instead, it reframes failure as a chance to grow. In a society where many children and adults are judged harshly for mistakes, cultivating a growth mindset is revolutionary. It helps us manage stress not through denial, but through resilience and adaptation.

This ties closely to the concept of posttraumatic growth, which refers to the personal development that can emerge after significant hardship. People who face illness, loss, or trauma may come out of those experiences with a deeper appreciation for life, stronger relationships, or a renewed sense of purpose. In Pakistan, where many communities face political, environmental, and personal adversity, posttraumatic growth is not only possible — it is already happening. When survivors of floods rebuild their lives, when young people turn loss into activism, and when communities come together after tragedy, these are examples of growth emerging from pain.

Stress, therefore, is not something to fear or run from. Positive Psychology teaches us to work with

"Identifying and applying our strengths not only boosts confidence but also reduces anxiety and enhances coping during stressful times. Among these strengths, spirituality holds a special place, particularly in cultural contexts like Pakistan, providing meaning, anchoring during uncertainty, and nurturing hope as a vital buffer against despair"

stress, to understand what it is pointing us toward, and to discover the strengths it is calling forth. This is a radical shift from simply managing symptoms to unlocking potential.

One model that helps people structure their journey is called PERMA-V. It includes positive emotion, engagement, relationships, meaning, accomplishment, and vitality. These six building blocks are not about ignoring problems but about widening our view to include what gives us energy, joy, and purpose.

When we nurture these areas—through gratitude, helping others, staying active, or reflecting on what matters most—we build up our emotional and psychological immunity.

In Pakistan, the potential of Positive Psychology is profound. It aligns with Islamic teachings about gratitude (shukr), intention (niyyah), patience (sabr), and spiritual reflection. It encourages communal values, encourages education, and uplifts people without needing medical labels. For those who may not have access to therapy or who feel reluctant to seek help due to stigma, Positive Psychology offers practical, culturally resonant tools that can be practiced individually, in families, or in communities.

“Stress, therefore, is not something to fear or run from. Positive Psychology teaches us to work with stress, to understand what it is pointing us toward, and to discover the strengths it is calling forth. This is a radical shift from simply managing symptoms to unlocking potential”

Stress is real and its impacts can be serious. But stress is also a doorway. Through the lens of Positive Psychology, it becomes a chance to discover our strengths, change our mindset, and grow in the face of challenge. It is a call to action, not only to survive, but to flourish and thrive.■

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Lahore's smog crisis triggers tougher curbs and extended school breaks

Punjab's winter smog returned with severe intensity, forcing tighter restrictions on emissions and prompting schools to announce extended winter breaks to reduce children's exposure. Analysts and public health voices warn that short-term measures will not be enough unless Pakistan tackles structural drivers such as transport emissions, industrial pollution, and widespread burning. *(Courtesy: The Nation)*

Flood aftermath fuels dengue surge across Punjab

Health officials have linked rising dengue counts to post-flood conditions and lingering stagnant water that supports mosquito breeding. Reporting has also highlighted concerns about underreporting and uneven surveillance, complicating response planning in districts with the sharpest increases. *(Courtesy: Express Tribune)*

Pakistan's final 2025 anti-polio drive vaccinates millions amid renewed security threats

Pakistan launched its last nationwide polio vaccination campaign of 2025 to immunize around 45 million children, while attacks and threats against vaccination teams and their security continue to endanger frontline workers. Officials emphasize synchronized efforts with Afghanistan to reduce cross-border transmission. *(Courtesy: AP News)*

Measles and rubella campaign targets 34 million children as outbreaks persist

A nationwide measles–rubella campaign in November aimed to vaccinate children aged 6 to 59 months across all provinces and territories, reflecting continued concern about preventable outbreaks. Public health agencies stress that routine immunization and catch-up campaigns are essential, especially in areas facing displacement and strained health services. *(Courtesy: WHO EMRO)*

Flood response updates warn of rising diarrhea, cholera, typhoid, malaria, and dengue risk

Humanitarian updates from late 2025 reported increases in acute

watery diarrhea and other infectious disease risks in flood-affected areas, with damaged infrastructure and sanitation failures compounding public health threats. Medical literature continues to underline how floods in Pakistan can accelerate malaria, diarrheal illness, and skin infections when clean water and services are disrupted. *(Courtesy: IFRC)*

Unsafe drinking water remains a national health emergency

Recent reporting has highlighted extensive contamination risks, including weak monitoring capacity and the persistent problem of sewerage and drinking-water lines running side by side. Newer local reporting has also cited UNICEF-linked figures on contaminated water exposure and the burden of waterborne disease, reinforcing the urgency of testing, infrastructure upgrades, and enforcement. *(Courtesy: Dawn)*

Plastic waste and microplastics raise public health and urban flooding risks

Environmental reporting in Pakistan has highlighted microplastics detected in water sources and the broader public health and drainage impacts of unmanaged plastic waste. Civil society groups continue pressing for stronger controls, better waste recovery, and a shift toward circular approaches rather than cosmetic clean-ups. *(Courtesy: Dawn)*

Northern Pakistan stays on watch for glacial hazards and unstable lakes

Pakistan's 2025 extreme season included glacial melt, landslides, and new lake formation that raised downstream flood risk in parts of Gilgit-Baltistan. Officials and reporting have repeatedly warned that warming-driven instability, including GLOF risk, threatens roads, homes, clinics, and water systems in mountain communities. *(Courtesy: Reuters)*

Indus River tensions flare as Pakistan alleges "weaponizing water"

Pakistan's deputy prime minister accused India of releasing water from dams into the Chenab without warning and framed it as a threat to stability, pointing to the Indus Waters Treaty and warning of serious consequences if water flows are disrupted. *(Courtesy: AP News)*

Pakistan accuses India of "weaponizing water" amid Chenab flow dispute

Pakistan's Deputy Prime Minister Ishaq Dar alleged India released water from dams into the Chenab River without prior warning, calling it a violation of the Indus Waters Treaty and a threat to regional stability. The report notes Pakistan also raised concerns about irregular releases during a key agricultural period and warned that disrupting river flows could have severe consequences for livelihoods and food security. *(Courtesy: AP News)* ■

Creature of the Month

Snow Leopard (Barfani Tendua)

The snow leopard (Panthera uncia) is one of Pakistan's most mysterious wild cats. It lives high in the cold mountains of the Hindu Kush and Karakoram, across northern areas such as Khyber Pakhtunkhwa and Gilgit Baltistan. (Snow Leopard Trust) Its thick fur keeps it warm, and its long fluffy tail helps it balance on rocky cliffs and also works like a cozy "scarf" when it rests. Snow leopards are shy and quiet, and they often move at dawn or at night, so people rarely see them.

If we protect mountain habitats, we also protect clean water, beautiful wildlife, and the communities who live there. Be a wildlife friend: never buy products made from wild animals and learn to respect nature's home.

(Source: Snow Leopard Trust)

Flower of the Month

Gul-e-Dawoodi (Chrysanthemum)

Gul-e-Dawoodi, also called chrysanthemum, is a cheerful winter flower that comes in many colors, including yellow, white, pink, and purple. In Pakistan, it is commonly grown in gardens and pots during the cooler season, when its bright blooms can make balconies and courtyards look festive.

Try this: place the pot where it gets sunlight, and water it lightly so the soil stays moist but not soggy. With simple care, Gul-e-Dawoodi can reward you with lots of flowers.

(Source: Gulab.pk Plant Guide)

Poem

Mountain Ghost

Soft pawprints where cold winds blow,
On silver rocks, through quiet snow.
A spotted coat, a watchful face,
The mountains hide its secret place.

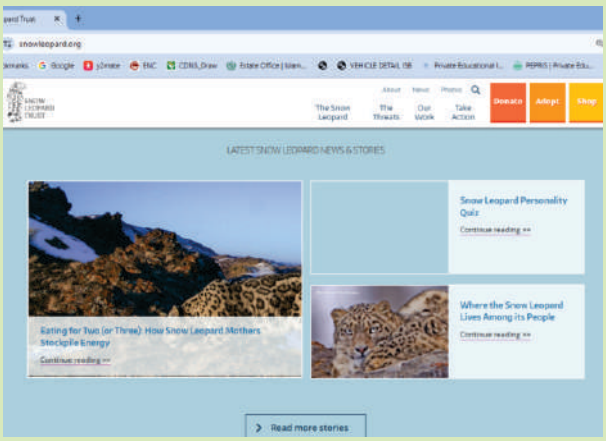
Tail like a scarf, and eyes so bright,
It climbs the cliffs by fading light.
Guard the peaks, keep habitats free,
So wild hearts live, and so do we.

Hira Salman

Interesting website

Snow Leopard

https://snowleopard.org/



Snow Leopard Trust - Kids and families can explore snow leopard facts and conservation stories can be found here:

Quote

"The Earth is what we all have in common."

~ Wendell Berry

International days

World Braille Day

Braille helps many people read using touch. Let's support kindness and inclusion so everyone can learn and shine.

International Day of Education

Education helps build peace and strong futures. Promise yourself to learn something new this month and help a friend learn too.

International Day of Clean Energy

Clean energy, like solar and wind, helps protect our planet. Turn off extra lights, save electricity, and remind your family that small actions matter. ■

Mahvish Chishtie

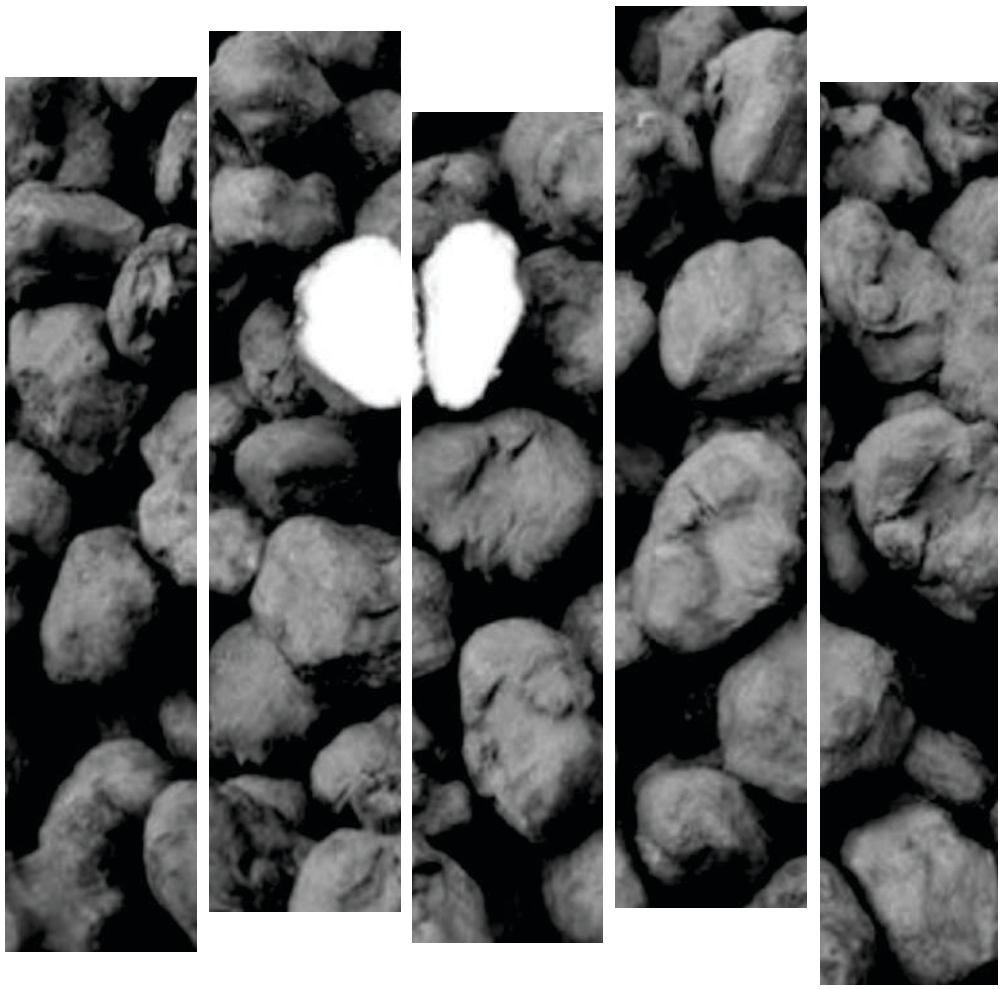
Singhara in Winter: The Crunchy Water Chestnut That Nourishes and Refreshes

In Pakistan, winter brings its own quiet gifts, including seasonal foods that feel both traditional and timely. One of the most loved is singhara, the water chestnut, sold fresh in heaps at markets and often enjoyed boiled,

While many of us grew up eating it simply because it tastes good, singhara also deserves attention as a nourishing, water wise food that fits naturally into healthier winter eating.

Water chestnuts are not "nuts" in the usual sense. They are the edible part of an aquatic plant, prized for their crisp texture and mild sweetness. Nutritionally, they are surprisingly light yet satisfying. A typical 100 gram serving has about 97 calories, almost no fat, and provides fiber along with important minerals such as potassium. Fiber supports digestive regularity and helps us feel fuller for longer, which can be especially useful in winter when we tend to snack more. Potassium supports normal muscle and nerve function and plays an important role in healthy blood pressure regulation.

Singhara is also valued because it contains antioxidant compounds. Nutrition summaries note that water chestnuts provide antioxidants that help protect the body from oxidative stress, which is linked with chronic disease processes. A scientific review of Trapa species, which includes singhara, also discusses its nutritional profile and traditional use as a nourishing food, including use as flour when dried. In South Asian kitchens, that flour is familiar in many households as a



gluten free option for certain recipes, and it is a reminder that Indigenous and local food traditions often include practical adaptations for different needs and seasons.

At the same time, it is worth keeping our health guidance grounded and accurate. Water chestnuts are a starchy food, so portion size still matters, especially for people managing blood sugar. Some sources discuss a "low glycemic" potential, particularly for water chestnut flour products, but overall glycemic index data for water chestnuts is not straightforward in the scientific literature. The simplest approach is the most reliable one: enjoy singhara as part of a balanced plate, not as an unlimited snack.

A practical safety note also matters. Because singhara is an aquatic plant, it should be washed well and eaten cooked, not raw or undercooked. Medical references note that intestinal fluke infection can be acquired by eating aquatic plants or drinking contaminated water, so proper washing and cooking are sensible precautions.

In a season when many Pakistanis struggle with rising food costs and rising stress, singhara offers something beautifully ordinary: a local, seasonal, culturally familiar food that supports hydration, digestion, and micronutrient intake without relying on imported trends. Enjoy it boiled, add it to chaat in moderation, or use singhara flour thoughtfully in home cooking. The healthiest traditions are often the ones that are simple, seasonal, and shared.■

Nutrient summary

Because "water chestnut" can refer to different plants, the most honest way to summarize nutrients is to show a simple snapshot from two commonly cited references.

A) Common nutrition label style snapshot, raw Chinese water chestnut, per 100 g

- Calories: ~97 kcal
- Carbohydrate: ~24 g
- Protein: ~1.4 g
- Fat: ~0.1 g
- Often highlighted micronutrients include potassium and vitamin B6.

B) Singhara (water caltrop, Trapa bispinosa) reported in a scientific review, fresh fruit, per 100 g

- Energy: ~115.5 kcal
- Carbohydrate: ~22.3%
- Protein: ~4.4%
- Fiber: ~2.05%
- Fat: ~0.65%
- Minerals (per 100 g): calcium ~32 mg, iron ~1.4 mg, phosphorus ~121 mg

How to use this summary in daily life

- If you are eating fresh, boiled singhara in Pakistan, treat it as a wholesome, starchy winter food, satisfying with moderate portions.
- If you use singhara flour, remember it is more concentrated than fresh singhara, so portion size matters even more.

Mahvish Chishtie

Winter markets in Pakistan bring the beloved singhara, also known as water chestnut, a crisp and satisfying seasonal food. We share two easy recipes that celebrate singhara. Enjoy!

Spiced Singhara Chaat with Yogurt and Imli

Ingredients

Boiled singhara (water chestnuts), peeled - 2 cups
Plain yogurt - ½ cup
Imli (tamarind) chutney - 2 tablespoons
Green chutney - 1 tablespoon
Roasted cumin powder - ½ teaspoon
Chaat masala - ½ teaspoon
Red chili powder - ¼ teaspoon (optional)
Salt - to taste
Chopped onion - ¼ cup
Chopped tomato - ¼ cup
Chopped coriander - 2 tablespoons
Lemon juice - 1 teaspoon
Sev or crushed papri - for topping (optional)

Instructions

Boil singhara until tender, then peel and let them cool slightly. In a bowl, mix yogurt with salt, roasted cumin, and a little chaat masala. Add singhara, onion, and tomato, then drizzle with imli chutney and green chutney. Finish with lemon juice, coriander, and a light sprinkle of chaat masala. Top with sev or crushed papri if desired. Serve immediately for a tangy, protein supported winter snack that still feels light.

Singhara Atta Cheela (Water Chestnut Flour Savory Pancakes)

Ingredients

Singhara atta (water chestnut flour) - 1 cup
Water - ¾ to 1 cup (as needed)
Salt - ½ teaspoon
Crushed ajwain (carom seeds) - ¼ teaspoon
Red chili flakes - ¼ teaspoon (optional)
Chopped green chilies - 1 (optional)
Chopped coriander - 2 tablespoons
Grated carrot or finely chopped spinach - ½ cup (optional but recommended)
Oil or ghee - 1 to 2 teaspoons for cooking
Yogurt or chutney - for serving

Instructions

In a bowl, combine singhara flour, salt, ajwain, coriander, and any optional vegetables. Add water slowly and whisk to a smooth batter that is pourable but not watery. Heat a nonstick or lightly greased pan on medium flame. Pour a ladle of batter and spread gently into a small pancake. Cook 2 to 3 minutes until the underside firms up, flip, and cook 1 to 2 minutes more. Make the remaining cheelay the same way. Serve warm with yogurt, imli chutney, or mint chutney.■

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