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Here today, gone tomorrow

EELUM DIXIT

Everest Base Camp sits on a glacier that is melting and on the move. It is now 50m lower than in 1953 when Tenzing Norgay and Edmund Hillary were here on their way to climb the world's highest mountain for the first time. Climbers have even reported pools of water on rocks on the South Col at 8,000m.

Global warming is heating up the planet, but scientists say the temperature in the Himalaya is rising twice as fast as the global average. The debris-covered Khumbu Glacier has unusual ice sculptures: arches, pinnacles and an enormous black rock sitting on top of an ice column 5m high (*pictured, left*).

But it is all here today, gone tomorrow. Carved by climate change, the columns melt and arches collapse. Base Camp travels slowly southwards on the moving ice, paths between expedition tents disappear during the night as the glacier grunts and growls in its sleep like a gigantic reptile.

New surprise: a river now runs through camp. It freezes at night and by the time the sun comes up from behind the West Shoulder every morning, it is a fast-flowing gurgling brook.

One climber said he wept when he saw that the stream actually originates in the Khumbu Icefall. We wonder how long it will take for the icefall to turn into a waterfall. All this is happening right around us, and because of us.

"This glacial stream is getting bigger and bigger every year, its flow is alarming," says Khim Lal Gautam, a civil servant and surveyor who has climbed Mt Everest twice, the last time in 2019 as part of the team that measured the true height of the summit at 8848.86m.

Aborted landing in Nijgad
EDITORIAL
PAGE 2

The overcrowded Base Camp with all its kitchen tents, gas cookers and waste is making things worse, and Gautam says it should be moved beyond the glacier to Kala Pattar. "Imagine how much damage we are doing to the glacier just by being here," he adds.

Spring climbing on Mt Everest has ended, and it has been a season of new records. Unusually long weather windows and above average temperatures meant that a record 650 people out of the more than 800 permits issued got to the top.

But no matter how many clients and guides summit the mountain, there is one glaring thing that hits everyone at Base Camps as the sun comes up: the mountains are changing, and change is accelerating.

It is not difficult to calculate the carbon footprint of a large Everest expedition staying for two months at Base Camp. The livelihoods of expedition guides and porters are important, but we have to ask what those summit photographs cost the planet. What of all those helicopter ferry flights, the LPG cylinders in the kitchen tents?

The translucent seracs on Nuptse glow blue as the sun climbs higher, layers of ice that have accumulated over centuries being drawn down by gravity to the glacier below. Besides the spring thaw that melts winter snow, it is now also this permanent ice that is rapidly turning into water. Most of the melting is due to global warming, but the ice is melting faster because it is covered in soot and dust particles from pollution brought up by wind from the south. What remains of the Lobuje Glacier is dirty ice.

Many had hoped that the three month climbing season would allow the mountain to recuperate during the rest of the year. But the damage is more and more severe every year, so the Himalaya needs a break.

Eelum Dixit

nepalitimes.com
Watch video online

Aborted landing in Nijgad

The Supreme Court last week ordered the government to scrap all decisions it has taken so far to build a new international airport in Nijgad 80km south of Kathmandu.

The justices faulted an amateurish Environment Impact Assessment (EIA) that ignored the ecological cost of the $3.5 billion project. Activists rejoiced in Kathmandu even as Finance Minister Janardan Sharma set aside money in his budget speech on 29 May for construction to go ahead, and a multi-partisan committee in Parliament vowed the project would go ahead.

In a tragic twist of fate, the Tara Air crash this week claimed the life of Makar Tamang and his entire family. Tamang had been an active campaigner for regenerating Tarai forests through the Mithila Wildlife Trust, which is also trying to save what is left of Nijgad's jungles.

We have weighed both sides of the argument: the need to plan for growth in passenger volume with the environmental and economic cost of such a gigantic project.


HIMALKHABAR

The Civil Aviation Authority of Nepal (CAAN) argues that Kathmandu airport was built for 9.2 million passengers a year, and has exceeded its capacity. Passenger volume is growing at 20% a year, and at that rate Kathmandu alone will have to handle 25 million passengers per year by 2040.

Because of terrain, Kathmandu cannot have automatic ILS landing needed for operations in poor visibility — increasingly the case due to worsening air pollution. And the new airports in Pokhara and Bhairawa just do not have the capacity to relieve Kathmandu's pressure.

However, activists argue that Nijgad is already an environmental disaster. The airport's first phase will mean felling 600,000 trees over 2,500 hectares of the last remaining native *Char Kose Jhari* forest that once covered the entire Tarai.

Infrastructure economists also say that Nijgad will mire Nepal in Sri Lanka-scale foreign debt at a time when the economics of global aviation is changing due to longer-range airliners from the hub-and-spoke model, for which Nijgad was originally designed, to point-to-point flights.

Not only was the EIA shoddily done, but the business model for the airport is not viable. Nijgad will still be at least 1 hour away from Kathmandu after the expressway is built.

Given the track record of Nepal's governments in non-implementation of 'national pride' projects like Melamchi, Pokhara airport, the MCC, or the highway to Kerung, Nepal just does not have the decision-making and management wherewithal, nor the culture of transparency to handle an infrastructure scheme on this scale.

Nijgad is a colossal white elephant. It is a gigantic logging concession, masquerading as an airport project. It is a lethal mixture of kleptomania and megalomania. Federal and Madhes Province politicians seem to have done their back of the envelope calculations about how much hardwood timber from 600,000 trees will be worth.

The project is a logging concession masquerading as an airport, it is a disastrous mix of kleptomania and megalomania

Officials have tried to assure us that there will be 20 trees planted for every tree cut. Where have we heard that one before? And where will those 14,400,000 trees be planted, anyway — it will require an area the size of Kathmandu Valley. Nijgad is not just trees, it is a vibrant ecosystem, an important biodiversity hotspot and wildlife corridor in the Tarai Arc Landscape.

We understand that no infrastructure is possible without sacrificing nature. But there are ways to ensure a win-win with green growth and climate smart development. If an alternative to Kathmandu airport is really needed, there are viable sites elsewhere: expanding Simara airport without felling so many trees, building the new airport 40km to the east in Sarlahi, where no forest needs to go.

New airports in Bhairawa and Pokhara can also easily be enlarged to take some of the traffic off Kathmandu. In Kathmandu itself, the ADB project to build a new terminal and extend the taxiway to the end of the runway, and moving STOL flights to Ramechhap, will increase handling capacity in the medium-term.

Few in government are willing to listen to this when green becomes the colour of money, and not of trees.

20 YEARS AGO THIS WEEK

Politics As Usual


Times
THE NEXT SIX MONTHS
A year after

Now that local elections are over, several independent candidates have won, including in Kathmandu, there is much hope for change, but the power play between and within the political parties at the centre remains as centralised as ever.

Around this time back in 2002, the Maoist insurgency was still at its peak, Parliament had been dissolved with elections just six months away and national emergency was back in place. But it was still politics as usual what with infighting between and within mainstream parties.

Excerpts from editorial from issue #96, 31 May – 6 June 2002, 20 years ago this week:

In the past three years, we have got used to saying that our nation is at the crossroads. Even though that metaphor has become threadbare, at no time has it been more true than today.

Parliament is dissolved, elections are six months away, an emergency is re-imposed and barely three hours later 170 Nepalis are killed in the latest bloodbath. We don't quite have a constitutional crisis yet, but that is academic.

Even if some sort of elections are held, what can we expect when candidates will not be able to travel beyond the district headquarters? What kind of representatives will be elected when many local leaders from parliamentary parties have either already been killed, or hounded out of their constituencies? Our democratic polity and our freedoms will be in serious danger. Isn't this exactly what the far-left and far-right wanted all along?

Extremists of all hues carry much of the blame for this mess. But it was the moral bankruptcy of our democratically elected leaders, the pettiness of their concerns, and their short time-horizons that fed the furnaces of rebellion. The inability of rival cronies in the Nepali Congress to get along has ruined not just a once-strong political party committed to the ideals of social democracy, but also imperiled the nation.

The Nepali Congress is its own worst enemy. With a party like that, who needs an opposition? Ever since the 1999 elections in which it won a majority in parliament, the Nepali Congress has been busy trying to snatch defeat from the jaws of victory. How can a party that can't even run itself rescue this fractious nation from the throes of crisis?

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ONLINE PACKAGES


MELTING MOUNTAINS

The Himalaya is warming up to 0.7° faster than the global average. Everest Base Camp sits on a glacier that is melting and on the move. It is now 50m lower than in 1953. Join us on a trip to the base camp to see what global warming is doing to our montains. Story: *page 1.*


NIJGAD NATIONAL PARK

Now that the Supreme Court has annulled the government's dubious plan to build Nijgad airport, it has opened a path for the native forest to be declared a national park and herald new economic opportunities for Madhes Province. Take a tour of the forest and the surrounding areas in this drone video. Story: *page 5.*


PLASTIC NATION

Kathmandu alone uses up to 4,800,000 plastic bags a day, and 800 tons of this non-biodegradable material is dumped in landfill sites. Instead of just complaining about garbage, one organisation is recycling plastic waste in Kathmandu and Bharatpur. Watch this video to find out more.Story: *page 9.*


ELEPHANT WHISPERER

Jhapa's Shankar Chettri Luitel, despite little or no formal training in wildlife, has been voluntarily working for over two decades on research and management of human-elephant conflict. Find out how it started and how it is bridging the gap between the mammal and people. Watch the video on our YouTube channel. Story: *page 6-7.*

NIJGAD

If they are really willing to develop an international airport, why can't they search for other options without destroying the natural habitat ('Aborted landing in Nijgad', Editorial, page 2)? What about the risk of colliding with birds and disturbing the routes of wild animals? It looks like everyone has already got their stake from the land mafia—that's why they are rallying against the court verdict.

Anoup Thapa

- We already have three international airports ('Building Nijgad, come what may', Aria Shree Parasai, #1111). Let us first focus on what we have and how to maintain them.

Arun Pradhan

- Bhairahawa airport has been an eye-opener for us all. We are not yet ready to host multiple international airports across the country, and definitely not by destroying nature.

Salman Khan Gurung

- The earth's resources can be replenished for human need but not for human greed.

Prabir Rana

TARA AIR

And down goes another one ('Why missing planes are so hard to find in Nepal', Nepali Times, www.nepalitimes.com). The safety record of aviation in Nepal is atrocious.

Gary Parkinson

- This shows that the idiotic investment in view towers should be diverted to wide range communication towers to avoid such misfortunes.

Cryjoe

- I had taken the very flight a few months back and it was quite a terrifying experience flying in such close distance from the mountains at some spots while crossing the high passes— even with a clear sky ('Pokhara-Jomsom flight with 22 missing', *Nepali Times*, www.nepalitimes.com).

Alex Shrestha

Times.com WHAT'S TRENDING

Mt Everest in Business Class

by *Shankar Dahal*

After climbing all major Himalayan peaks himself, Austrian mountaineer Lukas Furtenbach now helps others scale them. Read his profile as he discusses the climate crisis, 'flash mountaineering', and ways to revive Nepal's tourism at nepalitimes.com

Most reached and shared on Facebook

Counting every vote

Editorial

The blame for this year's poor voter turnout at the polls can be placed squarely on apathy, disillusionment and a feckless electoral mechanism. Nepal's voting process needs to be fairer and faster. It does not behoove a modern democracy to have such an obsolete and archaic voting system.

Most popular on Twitter

Pokhara-Jomsom flight with 22 missing

by *Nepali Times*

On 31 May, a Tara Air DHC-6 aircraft lost contact with Jomsom air traffic control at 4:21 UTC. A day later, a Nepal Army helicopter search and rescue team located the wreckage of the missing plane on a cliff face at Thasang in Mustang District. Follow us on our social media platforms for latest developments.

Most commented

Scaling the mountain of humanity

by *Aria Shree Parasai*

Pedro Queirós, the first non-Nepali summiteer to Mt Everest this season, is giving back to Nepal through adventure. His 2022 Everest expedition was part of a humanitarian initiative to fund the education of 25 Nepali children he supports. Full story online.

Most visited online page

QUOTE TWEETS

Nepali Times @NepaliTimes
"The identity, culture, religion, ethnicity, and beliefs of the communities are connected to #food, it is imperative to understand and preserve #Nepal's food culture."
Read an excerpt from @theprashanta's book, Timmur: Stories and Flavors of Nepal.

Anil Bhattarai @carefreeanil
Excerpt from Prashanta Khanal's (@theprashanta) book Timmur: Stories and Flavors of Nepal. A good read.#timmur #stories #food #nepal #celebrate #culture

Nepali Times @NepaliTimes
Tara Air aircraft with 22 aboard lost contact with Jomsom air traffic control at 4:21 UTC. Rescue helicopters have turned back because of bad visibility in the mountains where the plane last made contact along the rugged Kali Gandaki Valley.

Cameron David Warner @CDWTibet
If you visit Nepal, please do not fly to Mustang or Everest Base Camp. Take the time to drive or better hike. These accidents happen far too often.

Nepali Times @NepaliTimes
Itisha Giri's seamless collection of #poems is an intimate meditation on beauty, memory and emotions. Pratibha Tuladhar (@prateeish) #reviews'An Archive'.

Samuel F. Pimenta @samuelfpimenta
I met the poet @itisha Giri at a literary festival in Galicia, last year, the @poemagosto. I highly recommend!

Green is the colour of money and nature

Nepal's public and private banks start to work together to finance a green economy

Angel Li

In March, the World Bank approved a $150 million 'Finance for Growth' credit line to strengthen Nepal's financial sector for green, resilient and inclusive development. However, critics say lack of money has never been the issue for the country to make a transition to renewable energy, it is the dearth of political will.

The Finance for Growth loan package kicks off a new climate agenda for Nepal by promoting climate finance resilience policies in banking, insurance and capital markets, which lay the groundwork for the adoption of green loan incentives and new insurance and capital market products that are tailored to meet climate challenges.

It also hopes to improve supervision of the banking sector to address financial stability risks in the context of the pandemic, foster financial product innovations through opening up capital, insurance and disaster risk financing markets, and increase liquidity and inclusion through access to external commercial borrowing, financial literacy and financial digitalisation.

"This credit creates a strong foundation for a more stable, less bank-centric and more inclusive financial sector that is better positioned to mobilise private investment and support real economic activity," says Peter Mousley, the World Bank task team leader for the project.

Indeed, green banks have the potential to reduce financing risks, finance underserved markets, attract foreign investment, fulfill national renewable energy targets, and help to fulfill carbon reduction commitments. Nepal Rastra Bank (NRB) has been the key driver behind spurring sustainable finance in the country. It launched the first policy document in 2018 Guideline on Environmental and Social Risk Management (ESRM) for Banks and Financial Institutions marking Nepal's sustainable finance policy implementation, which has since progressed from 'formulating' under the 'preparation' stage to 'developing' under the 'implementation' stage.

In 2020, NRB issued a Unified Directive to require all banks and financial institutions to integrate environmental and social risk management into their overall credit risk management process as well as policymaking.

Furthermore, the Netherlands Development Finance Company (FMO), has been collaborating with NMB Bank to work in renewable energy, hydropower and green project financing. It is providing loans and equity investment for the Environmental and Social Management System (ESMS), and by doing so it will likely invite more equity investments in small and medium enterprises (SME).

Moreover, by providing credit to SME clients instead of big corporations, FMO supports equity investments in private equity funds such as Dolma Impact Fund I and II. Companies such as Nepal Invests aims to attract more capital from Development Finance Institution (DFI) to the Nepal financial system. However, to be eligible for loans by DFIs, ESMS is often a prerequisite. Nepal Invests is helping other banks to meet that necessary condition.

SMEs have been a crucial player in Nepal's growth, making up about 20% of GDP and accounting for over 60% of employment opportunities in the country. In 2020, IFC provided a $25 million loan to NMB to help finance green projects and SMEs. This investment will expand NMB's SME portfolio to over $1 billion by 2025 and generate 50,000 more jobs. The quantity of loans available to SMEs from NMB is expected to double as a result of the project.

"The chances of receiving funding will be exponential if SMEs are in sync with international best practices such as environmental, social and governance measures, we have demonstrated that risk capital can help mitigate climate change," says Siddhant Raj Pandey, CEO of Business Oxygen (Bo2), Nepal's first international Private Equity Impact and Climate Related Fund.

The critical next step for Nepal's green finance will be expanding the adoption of the Environmental and Social Risk Management (ESRM) Guideline to other banks across the country. Building the capacity of regulators and financial institutions, strengthening implementation coordination, and developing a taxonomy of green and socially inclusive initiatives are among the central bank's top priorities.

But for the private sector to invest in renewables and include green finance in their agenda, the government needs to provide them with incentives like tax breaks.

Business Oxygen, which has been investing in and promoting climate-smart approaches, measures investment's success not only through impact numbers on the financial statements but also metrics in accordance with the UN's Sustainable Development Goals.

It has a separate fund dedicated to providing technical support to companies whose financials are not able to comply with environmental, social and governance measures.

However, as a foreign direct investment (FDI) company, there are many policy and regulation challenges. Early on, Bo2 had a good pipeline of companies in the agricultural sector, but they were discontinued due to the Foreign Investment and Technology Transfer Act (FITTA) which prohibited FDI's investment in agriculture. Later, the government raised the investment threshold limit from Rs5 million to Rs50 million which forced SME investors to diversify their strategies.

One area where Nepal is continuously and successfully bringing in investment is the green hydro project with experience of over 20 years. Investor trust is built upon sufficient human resources and a proper supply chain of equipment.

"Even very risky hydro projects can still receive 70% of debt financing from local banks here in Nepal," says Kushal Gurung, CEO of Windpower Nepal, adding that hydro projects are easily financed under an established ecosystem and intact supply chain.

But this is not the case for other green projects. The lack of trust from banks stems from a much shorter track record and low confidence in the revenue model.

But the good news is that green projects need much lower investment, allowing private investors to come in and provide equity financing. "A solar project can be entirely financed by private equity investment with zero debt financing, unlike hydropower where the opposite is true," adds Gurung.

The climate crisis has added to problems like water availability, spatial-temporal distribution, and alteration in the hydrological cycle. Last year, Nepal's electricity generation declined by 6.9% and this is expected to get worse, especially in the dry season. Nepal's 15th Five Year Plan (2019-2024) has set a key target to achieve a 12% share of renewable energy in overall energy consumption. In 2022, it is a mere 3.27%.

An energy resilient Nepal needs effective collaboration between public and private entities. Public financing is insufficient, but greening the system with government subsidies will promote sustainable growth.

Budget 2022/23

Finance Minister Janardan Sharma presented to Parliament a Rs1.793 trillion budget earlier this week. The plan is to generate Rs1.24 trillion through taxes, Rs55.46 billion through foreign grants, and the remaining from foreign and domestic debt. The health and environment sectors saw budgets slashed, while taxes on alcohol products, electric vehicles and digital services have increased.

The ten major decisions from this year's budget include a security fund for those above 68 years, a 15% increase in civil servants' salary, changes in income tax limit, a free electric stove for every family, promoting policies to discourage real estate business, reducing trade deficit to 0 in five years, ration card for the poor as well as discount stores, cement company to mandatorily release IPO, 8% cash subsidy on exports of cement, treated water and shoes, among other, and Rs5 trillion microfinance fund to provide loans to farmers, as well as a farmer pension program.

Miniso discount

Global IME customers can now receive 10% cashback and up to Rs300 discount at Miniso and Missio by paying with their bank debit card, credit card or through mobile banking. Global IME has also launched a scheme for its users to mark its 22nd anniversary, where 20 winners will win a smartwatch while one person will receive the bumper prize Samsung S22 through a lucky draw.

Microsoft winner

A team of developers that includes a Nepali engineer has won the Microsoft Imagine Cup World Championship 2022. V Bionic created ExoHeal, a solution that combines robotics and neuroscience to offer more affordable and 30% faster rehabilitation to patients with hand paralysis. The team won $50,000 in Azure credits, a cash prize of $100,000, and a mentoring session with Microsoft Chairman and CEO Satya Nadella. Ramin Udash was the Chief Technical Officer of the team that also included founder Zain A Samdani, head of design Faria Zubair, Asfia Jabeen Zubair. Udash developed the application and built the robotics.

StanChart's Kishori

Standard Chartered Bank has donated Rs3,036,000 to Open Knowledge Nepal for the project Kishori which will empower and help adolescent girls. The project with partner Shequal Foundation will provide financial, digital and life skills, and be carried out in 10 public colleges across the country and cover over 100 female students.

Everest tie-ups

Everest Bank and Sahara Physiotherapy Hospital have agreed to provide a 10-15% discount on various in and out patient facilities to all Everest Bank cardholders, mobile banking users and employees of the bank. Everest Bank has also partnered with Gateway Payment Nepal to start a digital payment system where customers can scan and start QR payments in India for goods and services at outlets that accept PayTM, Google Pay, PhonePe and others. Nepali migrants in India can also send their money directly to the bank and Indian tourists can make payments to any merchant in Nepal.

Nepal-Israel relations

The Embassy of Israel and B.P. Museum Committee jointly conducted an Interaction Program: B.P. Koirala and Nepal-Israel Relations at The BP Memorial Museum, Sundarijal to celebrate 62 years of diplomatic relations between Nepal and Israel. An exhibition looking back at Nepal-Israel relations was also displayed, portraying historical cooperation between the two countries. Diplomatic relations between the nations were established by prime ministers of their respective countries, BP Koirala and David Ben Gurion on 1 June 1960.

New Tata H5

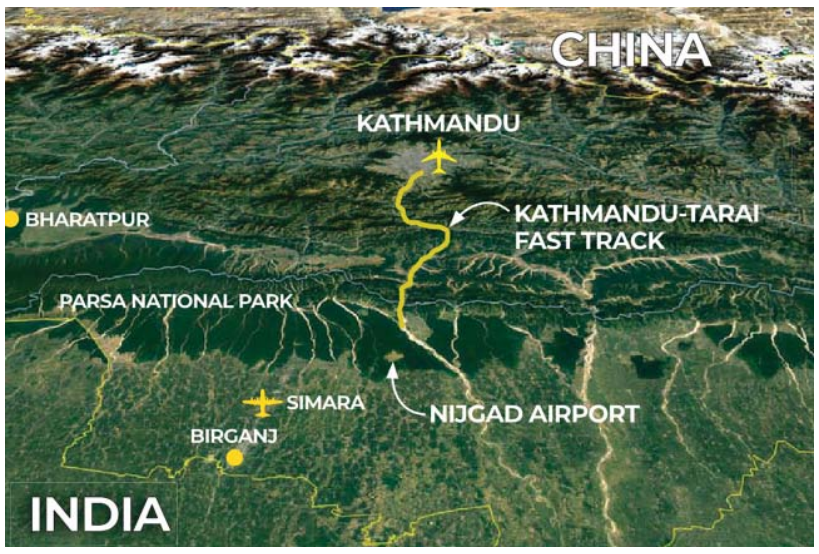
Tata Motors is planning to launch the new Tara H5 mid-sized SUV in 2023 with added features. The facelift will primarily focus on the frontal design but also include a new headlamp cluster, alloy wheels, infotainment with a large display and 360-degree parking camera, among others. There will be changes to the bumper, the backside and the hood. The SUV will run on a 51/5 litre turbo petrol engine with manual and automatic transmission options.

Ncell monsoon pack

Ncell has launched the 'Monsoon Dhamaka' offer with unlimited and attractive data and voice + SMS bundle all-net packs. The price of the three new one-day packs ranges from Rs29-48 and can be subscribed by dialing *17123#. Three new all-net voice and SMS bundled packs with one day validity have also been launched. Users can choose 30 minute talk time and 30 SMS for Rs12, 100 min talk time and 100 SMS at Rs14 or 290 min talk time and 290 SMS at Rs29 by dialing *17118#. These packs can also be subscribed via Ncell App, Ncell website, eSewa, Khalti and IME Pay.

Nijgad's green runway

The path is open to declare a national park in the native forest where the airport would have been



PHOTOS: KASHISH DAS SHRESTHA

● **Kashish Das Shrestha**

In a landmark decision last week, the Supreme Court annulled the government's dubious plan to build an airport by destroying Nijgad's primary forest.

The written verdict is still due, but the ruling has opened a path to plot a green runway on which inter-generational equity, and new economic opportunities can take flight in Madhes Province.

Here is the path forward:

1 Relocation
Tangiya Basti spreads over 1,000-hectares in Nijgad's old-growth forest where families were temporarily settled in 1974-75. Its residents now span four generations, and are still waiting for the government to resettle them. In this wait, the settlement had transitioned from subsistence farming to full-fledged commercial agriculture. Some of the young men from here have become migrant workers in Korea. But the nearly 1,500 households, with a population of over 7,000, are still considered squatters on land that was going to be an airport.

Residents felt the airport project was their ticket out, and now think the Supreme Court's decision means the government may not feel the need to finally relocate them.

However, Tangiya Basti was settled 20 years before the first plan to locate the airport here was even made in 1995. The promise of resettlement was never tied to this, or any other project. Cancellation of the airport should therefore have no bearing on their resettlement. It would simply be the right thing to do, and in an election year it may even be a politically prudent one.

2 Reforestation
Once Tangiya Basti's inhabitants are resettled, the land can be annexed back into the larger Nijgad forest that it was always a part of. This should be a planned undertaking, allowing the government and its conservation partners to address issues like protection of the wildlife corridors, the need for watering holes and wetlands, as well as mounds for flood protection.

Nepal has signed the World Bank's Forest Carbon Partnership Facility, unlocking up to $45 million to support the expansion of carbon sinks by increasing forest cover. Turning Tangiya Basti back into forest may also give Nepal the chance to tap into that fund before it expires in 2025, while exploring similar financial benefits from other emission reduction programs.

3 Construction
There should then be a parallel program to design and build multiple wildlife crossings over and under the East-West Highway that goes through Nijgad forest. A multi-year construction project of this kind would give the local economy a boost and reduce road kill.

Habitat fragmentation has become one of the leading causes of wildlife deaths along Nepal's highways, and includes endangered species we have worked so hard to protect.

Bordering Parsa National Park and the Chure and Mahabharat Ranges, Nijgad is home to tigers, rhinos, pangolins, and an important regional migratory corridor for wild elephants and other animals. The wildlife crossings can serve as safe bio-corridors as well as a model for other conservation areas in the country.

Establishing a wildlife conservation and ecology research centre would also allow domestic and international conservationists and scholars to engage in Nijgad for fieldwork, as well as bring additional jobs and resources to locals.

4 Designation
The case can be made that Nijgad already qualifies to be a national park since it shares the same ecological qualities as adjoining Parsa. In fact, without one, it would be difficult to protect what remains of the forest. The case for a national park will be bolstered with the resettlement of Tangiya Basti, and building wildlife crossings.

Rhino deaths due to poaching have gone down in Nepal, but their deaths due to territorial fights have been increasing at an alarming rate. Rhino calves have also come under fatal attacks from the growing tiger population.

Territorial fights in crowded national parks, habitat fragmentation and toxic water sources are now among the leading causes of 'natural' deaths of endangered wildlife in Nepal. A Nijgad National Park with translocated rhinos would offer much needed new protection and territory for Nepal's conservation efforts and sustainable development.

5 Tourism
The controversy around the airport has worked to advertise Nijgad's rich biodiversity, creating a growing interest among urban youth to explore the area. With a planned effort that involves reforestation, building of wildlife crossings, and a national park designation, Nijgad can easily become a popular eco-tourism destination that is as easily accessible as Chitwan through the Kathmandu-Tarai expressway.

Because the area is not yet prepared for this, we have a chance to build proper eco-tourism infrastructure and a service sector. The rise of Nijgad as a tourism destination would also have positive implications for the local real estate market, a matter of particular interest to the proponents of the airport project.

6 Funding
Making funds available to get work started should not be a problem. The government recently allocated a large budget for Nijgad airport. Since the airport will now not be built, those funds can surely help get work started to turn Nijgad into a national park, and put it firmly on the tourist map.

Development partners have already expressed keen interest to assist in this. Exactly a year ago on 3 June 2021, the Asian Development Bank, Australian Embassy, British Embassy, European Union, Finnish Embassy, French Embassy, German Embassy, United Nations and World Bank in Nepal issued a joint statement reiterating their commitment of up to $7.4 billion for Nepal's 'Green, Resilient and Inclusive Development'.

They raised pointed questions about the Nijgad airport plan, and wrote: 'Forests are also the source of valuable natural resources and wildlife that support job creation and economic development in the forestry and tourism sectors.'

Thanks to the Supreme Court order, Madhes Province has an opportunity to pursue a path towards green growth, and set a new benchmark for Nepal's development, conservation and economic growth.

__Kashish Das Shrestha__ is a 2019 National Geographic Explorer and a sustainable development policy advocate. A version of this op-ed was presented to the Environment Minister Ramsahay Prasad Yadav this week by the youth environment group HarinNepal.

ALTON C BYERS

Gabions constructed by local lodge owners near Chukhung village in 2016, following an englacial flood from the Lhotse glacier in 2015. The embankment protected the village during a second flood in 2016.

ALTON C BYERS

A: Dig Tso, Khumbu after the 25 April 2015 earthquake and resultant GLOF, the second glacial lake outburst since 1985.
B : Saldim Peak after the 17 June 2017 separation of rock from the north-facing face.
C: Lhotse Glacier, Khumbu.

Nepal's mountains are melting

Climate scientist takes a close look at three recent and poorly understood glacial floods in the Himalaya

● **Alton C Byers**

The development of glacial lakes from receding glaciers, contained by either terminal moraines or bedrock, is commonly linked with global warming since the end of the Little Ice Age (LIA), and are thought to be increasing in number and size.

Such lakes are prone to sudden and catastrophic drainage of their water which is known as Glacial Lake Outburst Floods (GLOFs). Dam breakage can result from rapid lake area expansion rates, dead-ice melting in moraines, destabilising seepage processes, sudden lake water level change, and surge waves created by rockfall or ice calving.

The stored lake water that is released has caused enormous death and devastation downstream. However, there are a range of other cryospheric processes and hazards that are only beginning to receive attention. They, too, can result in landslides, debris flows, and/or other major glacier-related flood events.

We focus on three of these lesser-known and poorly documented phenomena — englacial conduit floods, permafrost-linked rockfall and debris flows (*see boxes, right*). All three took place in the Nepal Himalaya during the past decade.

Each of these phenomena need more detailed study to develop the most effective prevention, mitigation and adaptation approaches possible. Such studies will most likely be strengthened if they include a on-site or remote sensing reconnaissance of the event as soon after its occurrence as possible, along with the participation, insights and experience of local people.

Large hydropower projects are particularly vulnerable to the impacts of glacier floods, as has happened repeatedly in recent years. Such projects need to plan for catastrophic events, which have thus far been largely ignored within the pre-construction feasibility and environmental impact study process.

Transboundary research and cooperation will also be essential to minimising the impacts of future GLOFs, particularly along the Nepal-China border.

If scientists can share the results of their research with decision-makers, more timely mitigation programs will be possible.

***Alton C Byers**, PhD is a Senior Research Associate and Faculty at the Institute for Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder. A scientific version of this article, recently published in* Mountain Research and Development, *can be downloaded for free online. Byers is currently researching alpine ecosystems in the Kanchenjunga Conservation Area.*

The elephant whi

Saluting a citizen scientist protecting wild elephants and

● **Biraj Adhikari** in Jhapa

When I arrived in February, Bahundangi in Jhapa seemed like a sleepy little town. But the quiet was often interrupted, not by traffic or noisy construction, but by wild elephants. The village is on the migratory route of generations of wild elephants that have been moving for centuries from Assam, through the lowlands of Bhutan and West Bengal to Nepal in search of food and water.

However, the recent expansion of settlements and conversion of forest to agricultural land and tea estates have fragmented these routes, leading to conflict between elephants and people. Each year, this conflict results in destruction of crops and dwellings, human injury and death, and retaliatory killings of elephants. Bahundangi was particularly affected by this conflict, but things have changed over the years, thanks to a handful of conservationists including Shankar Chettri Luitel.

He is a slender man in his fifties, with a sombre demeanour but a helpful disposition. He had been voluntarily working for over two decades on research and management of human-elephant conflict. Luitel had a wealth of information about the area, the history of human-wildlife contact, but I could not put a finger on why he was so passionate about elephant conservation.

"The first time I got emotionally involved with elephants was when an elephant gave birth on my farm in 2001. That's how my conservation journey began," Luitel explained. Human wellbeing depends on biodiversity. However, activities intended to make our lives better are negatively affecting nature and ecosystems, threatening the future of biodiversity and our very existence. It is thus critical that we find ways for humans and nature to coexist.

This may seem romantic and farfetched, but I realised that it is possible because of this unsung hero, Shankar Chettri Luitel (*pictured, right*).

It was my PhD research on human-wildlife interaction that took me to Bahundangi, a small town in Nepal's easternmost plains bordering India, a part of the transboundary Kangchenjunga Landscape that spans parts of Bhutan, India and Nepal.

Despite little or no formal training in wildlife, Luitel got involved in numerous studies, activities and plans to manage conflict in the area.

In time, Luitel was the go-to person for researchers hoping to learn about migrating elephants, their habitat, behaviour and the socioeconomic impact of human-wild elephant contact. He provided critical insights into planning and managing, and this involvement also helped him learn scientific methods, such as the use of GPS tracking to monitor migratory patterns. He had become a true citizen scientist.

Luitel now has a reputation as an elephant expert, making the

ALTON C BYERS

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Earthquake-induced GLOFs

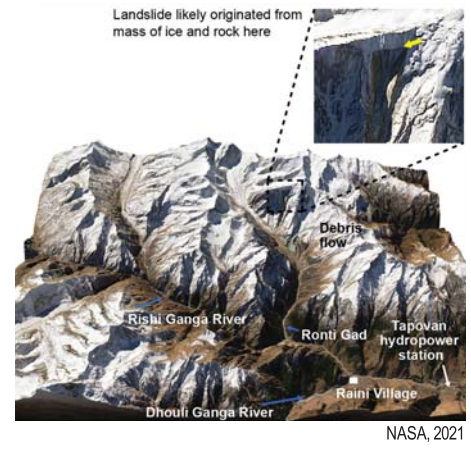
Seismic activity is a potential trigger of GLOFs. The fragile and unconsolidated nature of most terminal moraines means they can be easily damaged during earthquakes, releasing water downstream.

Following the 25 April 2015 earthquake, a team of international remote sensing specialists from the University of Arizona mapped 4,312 landslides to identify potential hazards. They surveyed 491 glacier lakes for earthquake damage, finding nine landslide-impacted lakes but no visible satellite evidence of GLOFs. The lack of GLOFs was attributed to the impacted region's extreme topography, which may have played a role in buffering the potentially destructive impact of the shock waves.

An earthquake-triggered avalanche of ice and rock was dislodged from the Langmoche Glacier above Dig Tso glacial lake in 2015 in the Khumbu. The avalanche created a 4.2–8.2m seiche wave and small outburst flood within the Bhote Kosi downstream. Although the flood was largely contained within the river channel, several bridges were destroyed.

Dig Tso first experienced major GLOF activity on 4 August 1985, as a result of a similar ice avalanche from the Langmoche Glacier. A resulting avalanche created a surge wave that breached the terminal moraine, unleashing an estimated 5 million m^3 of water that killed five people and caused extensive damage downstream.

The 2015 repeat event is important because it demonstrates that even though a glacial lake has already experienced an outburst flood, it can still be dangerous, subject to additional flooding activity in the future, and in need of regular monitoring.



NASA, 2021

Schematic diagram of the origins of the Chamoli flood in India's Uttarakhand on 7 February 2021.

Permafrost-linked, Rockfall-induced GLOFs and Debris Flows

The impacts of global warming trends can be particularly conspicuous in glaciated landscapes, notably in the form of rapidly receding glaciers and the formation of glacial lakes.

Growing evidence suggests that similar changes are also occurring at above 6,000m elevations with the thawing permafrost that can impact the mechanical strength and hydraulic permeability of high elevation rock faces.

Rockfalls previously constrained by year-round frozen temperatures can set in motion a cascade of catastrophic processes below, including more rockfalls, debris flows, explosive impact with glaciers below in addition to triggering glacier-related floods downstream.

On 20 April 2017, a flood on the Barun Valley in the Makalu-Barun National Park in eastern Nepal blocked the confluence of the Barun with the Arun River, resulting in a potentially dangerous 200m long lake.

Our follow-up study during May-June 2017 revealed that the source of the flood was the <0.1km^2 Langmale Glacial Lake. In spite of its small size, the estimated 1.3 × 106m^3 volume flood caused extensive downstream damage to forests, pastureland, and some infrastructure down to the flood's attenuation point in Yangle Kharka.

However, instead of the flood trigger being a snow or ice avalanche into the lake, the cause turned out to be a massive, high altitude breakage of solid rock from the east face of Saldim Peak (6,388m). The debris landslide plummeted 1,200m down to the Langmale Glacier, creating a massive explosion upon impact characterised by a dust cloud and hurricane-force winds.

A 1.1 million m^3 debris flow of ice, debris and sediment then cascaded directly into the Saldim Glacial Lake below, triggering a hyper-concentrated slurry outburst flood that grew progressively larger and more destructive as it continued down the valley.

Similar processes are thought to have triggered the 2012 Seti flood near Pokhara that killed 70 people, and 2021 Chamoli flood in Uttarakhand that left 300 dead and destroyed several under construction hydropower projects.

Swiss permafrost specialist Wilfried Haeberli, using recent examples from the Swiss Alps, Cordillera Blanca in Peru, and Mt Everest region of Nepal, believes that the probability of similar flood events will continue to increase with the continued formation of new glacial lakes below high mountains.

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A: GLOF on the Tama Pokhari in the Makalu-Barun National Park was triggered by an ice avalanche from overhanging ice on 3 September 1998. In 2010, the breached terminal moraine could still be seen to the far left.
B: One of the only known photographs of a GLOFs in progress at its source. Water can be seen cascading over the Tama Pokhari's newly breached terminal moraine, which reportedly was repeated in a series of distinct waves.
C: Extensive damage caused to Tagnag village (4,350m) by the GLOF in the Kangchenjunga region. Downstream impacts were also considerable.

Englacial Conduit Floods

Debris-covered glaciers with gradients steeper than 2° are prone to meltwater drainage as opposed to the pooling and development of large glacial lakes. Consequently, they often develop a network of englacial conduits, or cave-like features, within the glacier itself.

The conduits may be interconnected and linked to surficial meltwater ponds characteristic of stagnating and ablating debris-covered glaciers. These conduits are usually water filled during the summer months, contained within the glacier by an ice lens or dam located below the exterior debris cover. They are water-free during the winter months.

Flood triggers can include the rapid drainage of a surficial meltwater pond directly into water-filled conduits, overland floods from high precipitation events, where floodwater enters into sinkholes that connect directly to the conduits, or the sudden discharge of water from one internal conduit to another.

Retaining ice lenses can then fracture from the increased hydrostatic pressure, with flood waters emerging directly out of the glacier itself.

The discharged water from multiple conduit outlets can then merge to create significant downstream flood activity, with peak discharges in the range of several hundred cubic meters per second.

These floods, while considerably smaller than most known and recorded GLOFs, can nevertheless result in damage downstream.

nisperer

and bridging the gap between the mammal and people

ICIMOD

community aware of wild elephant whereabouts and movement. Contrary to what I expected, the people here seemed tolerant of wild elephants.

"It wasn't always like this," Luitel recalled. "People used to hate elephants, and they hated us too for trying to protect them."

But over time, Luitel's relentless efforts started to change people's perceptions. He tracked their movement, organising patrols and recording property damage in the village. More importantly, Luitel helped affected families navigate the complicated process of claiming compensation, from writing applications on their behalf to collecting documentary evidence, and travelling to the municipality office to register the claims himself.

He and a few of his colleagues were the reason why the village appeared on the radar of governments, politicians and researchers. "Bahundangi has produced many PhDs," says Luitel who has helped researchers develop strategies to reduce risk and diversify the income of farmers by planting cash crops such as bay leaf and tea that the elephants did not raid. "These days, the locals are not as hostile towards elephants and us anymore."

There is an 18-km long electric fence along the Mechi River, between the forested tracts in India where the elephants come from and the crop fields in Bahundangi. Luitel was involved in building this fence, designed to keep the elephants out.

But Luitel admits that it is only a temporary solution. Eventually, he says, the only way is co-existence. For this, he feels that the government must recognise the struggles of the people of Bahundangi, provide subsidised healthcare and education, and create jobs. That way locals would not see the wild elephants as a threat to their livelihood, but as leverage to secure services from the government. This would make it easier for them to forgive wild elephants even if they occasionally caused trouble. Furthermore, elephants could be part of ecotourism in the area, which would effectively convert their presence and movement into an income generation opportunity.

Today, Luitel is the only person in Mechi Municipality who can identify all 12 elephants that live on the Nepal side of the border. Based on this knowledge, he is developing information sheets that detail the physical features, habits and size of each elephant, accompanied by images, for distribution to locals.

The fliers help villagers identify certain elephants that are aggressive, so that they can avoid them and warn others in time. The information also helps future researchers and students learn about the elephants. Luitel's son is studying for a bachelor's degree in forestry, and he hopes his education will help in human-elephant coexistence.

It is easy to understand Shankar Chhetri Luitel's passion for learning to live with wild elephants – he believes that all lives on Earth are equal. He is proof of how one person can bring positive change in the lives of humans and wildlife.

There is a lesson here for all of us, on how each one of us can help solve the mammoth crisis of biodiversity and habitat loss. We can co-exist, and we must.

Biraj Adhikari *is a Research Fellow, Ecosystem Services at ICIMOD.*

EVENTS

Bird Counting
The second "Chhimeki Chara, The Neighborhood Bird Count" summer season is starting. Everyone can participate from their house. All you have to do is spend 15-30 minutes counting birds around you through the Chhimeki Chara mobile app available for both Android and iPhone.
3-6 June

Cyclothon
On this World Cycle Day and World Environment Day, help reduce your carbon footprint by joining Marwadi Yuva Manch for a bicycle ride from Kathmandu to Patan Darbar Square.
4 June, 7am, Kathmandu Darbar Square, 9841513886 / 9851070499

Nepa-licious
Enjoy the traditional recipes from all over Nepal with Kedar and Kiran Sharma who are organising the Supper Club to reflect the Nepali home recipes across regions, and share flavours and stories.
5 June, 12:30pm-2:30pm, HUB@Boudha, Rs1,500 per person, 9866273244

Swayambhunath Clean-up
Do your part and make a difference. Join Balakmovement this Sunday on a campaign to clean the beautiful Swayambhunath Stupa.
5 June, 7:00am, Swayambhu, 9860745333, 9841461334

MUSIC

Born This Way: Open Mic
Welcome June and Pride with storytelling, music and poetry from LGBTQIA+ community celebrating love, safe space and being comfortable with oneself.
3 June, Evil Eye Ktm, Thamel, 9843851172

Live music
Enjoy a ladies night out at Highland Bar with live music and special performance from Collab Inc. One free drink and appetizer on the house.
3 June, 6pm onwards, Highland Bar and Grill, Pulchok, (01) 5450688

Kali Prasad Baskota Live
Kali Prasad Baskota performs live for the first time post-Pandemic in Kathmandu this weekend. Jam to his hit songs and mark a musical end to the week.
4 June, 8:00pm onwards, Club Platinum, Durbar Marg, Rs1,000-Rs2,000, 9820109081

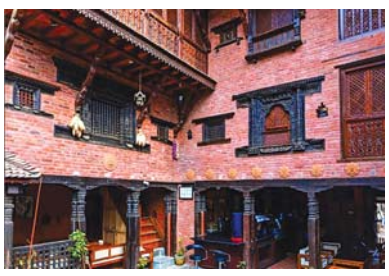
1974 AD
This weekend will be the rock night to remember. Moksh is hosting an exclusive unplugged concert Time Stands Still with 1974 AD. Limited tickets available.
4 June, 6pm onwards, Moksh, Jhamsikhel, Rs1,000-Rs,1500, (01) 5428362

Tribute to Adele
Head over to Lord of Drinks this Saturday where Nepali music veterans will honour Adele and her contribution to global music. https://dealkhana.com/events/adele-tribute-show
4 June, 3pm, Lord of Drinks ,Thamel

GETAWAY

Himalayan Front Hotel
Located atop Sarangkot, Hotel Himalayan Front has magnificent sunset views as well as one of the best restaurants in Pokhara, The Summit Restaurant. An ideal place to unwind.
Sarangkot, Pokhara, 9801166370

Shivapuri Heights
Enjoy home-cooked meals, meandering walks, and get pampered at the outdoor spa at the Shivapuri Heights cottages. Go to Facebook or http://www.shivapuricottage.com/ for more information about the weekend package.
Shivapuri Hills, Budhanilkantha, 9851088928



Hotel Baha
Plan a short stay at Hotel Baha with its view of Bhaktapur Darbar Square and the Nyatapola Temple. Offers a homely meal of rice, lentils, vegetables, meat and pickles.
Bhaktapur, (01) 6616810

Riverside Springs Resort
Riverside Springs Resort, away from the bustle of the city, offers a vast swimming pool, exciting activities like horseback riding and rafting, cosy rooms and attentive service.
Kurintar, 9801801336

DINING

Nourish by Avata
Be part of a wellness oasis, and have a soulful and tasty experience with vegan and vegetarian delicacies. Their chickpea brunch bowl is an appetizing combination of quinoa, chickpea salsa, mushroom, tofu, spinach, and baguette.
Gairidhara, (01) 4446358 / (01) 4446359

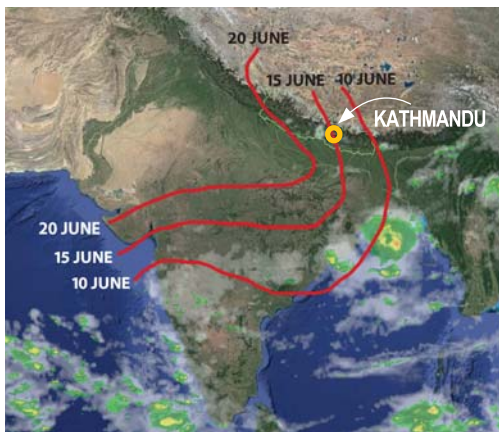
Chez Caroline
Authentic French and continental cuisine, right here in Nepal. Try Caroline's Profiteroles au Chocolat and Choux pastry filled with vanilla ice cream and hot chocolate sauce.
Baber Mahal Revisited, (01) 4263070

Dokdo Sarang
Enjoy a variety of widely popular Korean dishes including Tteok-bokki, Gimbap and Bibimbap or even the full set. Head to Dokdo Sarang now.
Kupondole Heights, 9803472187

Pawan Sweets
Craving some Indian? Pawan sweets has amazing dosas and naan. And as the name suggests some delightful sweets as well as jujudhau.
Baneshwor, Kathmandu, 9813538897

Casa Mexicana
For best Mexican in town, head to Casa Mexicana. It serves both vegetarian and meat options of tacos and quesadillas, as well as the sweetest tres leches for dessert.
Gairidhara, 9840542082

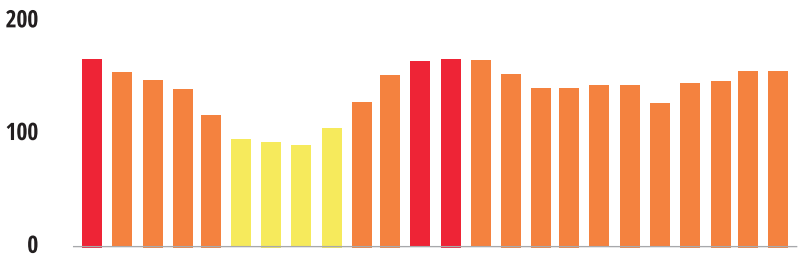
WEEKEND WEATHER



The southwest monsoon is now well-established along India's western coast, and the rains have arrived one week early. In the Bay of Bengal, it is now entering southeastern Bangladesh, and should be arriving in eastern Nepal in the first week of June — also one week earlier than usual. Meanwhile, dry heat is baking northern India and the Tarai plains. With the westerlies still active, this is driving convection cells up the mountains. Kathmandu Valley will be drenched in pre-monsoon squalls with occasional spells of sunshine. Estimated monsoon advance over Nepal in this satellite image on Thursday morning.

FRIDAY	SATURDAY	SUNDAY
28° 19°	29° 19°	28° 19°

AIR QUALITY INDEX



Kathmandu AQI from 11AM 1 June - 10AM 2 June March measured at US Embassy, Phora Darbar

Kathmandu's Air Quality Index (AQI) is seeing gradual improvement as the pre-monsoon rains set in. However, it is still in the hazardous range soon after the rains stop, especially during the morning and evening rush hours. Vehicular emissions are the main culprits, with traffic jams exacerbating the problem. Kathmandu and Patan's new mayors have promised to prioritise pollution and garbage management, so let us see what they can do. For Kathmandu, the only solution is a clean and reliable public transportation system.

OUR PICK

Weaved into the delicate folds of the beautifully crafted frames of any Studio Ghibli film are themes that resonate with all ages and all times. Take Miyazaki's *Princess Mononoke*, for example: a highly thrilling hero's journey that is at its heart also about sexuality and the delicate connection between humans and environment, about industrial progress and nature. Set in the late Muromachi period of Japan, which is approximately 1336 to 1573 CE, the film is a fantasy delight with mythological elements, and follows a young Emishi prince named Ashitaka and his involvement in a struggle between the gods of a forest and the humans who consume its resources. With the soul of an epic romance and a stirring soundtrack, *Princess Mononoke* is a full-blooded exploration of cultures, civilisations and our eternal debt to the ecosystems around us. Features voices of Yōji Matsuda, Yuriko Ishida, Yūko Tanaka, Kaoru Kobayashi, Masahiko Nishimura and Tsunehiko Kamijo.

Refuse, recycle, reuse, repurpose plastic

Instead of just complaining about garbage, an organisation is recycling plastic waste in Kathmandu and Bharatpur

ALL PHOTOS: ARIA SHREE PARASAI

Aria Shree Parasai
in Chitwan

Throwaway plastic pollution is turning into one of the biggest environmental problems of our times. Kathmandu alone uses up to 4,800,000 plastic bags a day, and 800 tons of this non-biodegradable material is dumped in landfill sites. One plastic bag takes 500 years to completely biodegrade, and they have now contaminated water, soil, air, and accelerated the climate crisis.

The government's attempts to ban polythene and single-use bags have failed each time due to the lobbying from powerful companies. And now the Covid-19 pandemic has added to the problem with people going back to using more plastic material like masks, PPE, visors and gloves.

Now, an organisation working on environmental sustainability is recycling plastic in an attempt to reduce and clean up the waste, while also creating jobs. Creasion was founded in 2005 and is working in Chitwan and Kathmandu to recycle PET bottles through segregation and baling before repurposing them.

"There is a lot of plastic and it is not going anywhere. The environmental elite can avoid using it, but for us the only way out is to recycle," says Anand Mishra, founder of Creasion. "We often see waste as something to get rid of, including plastic, and tend to burn it. But we need to change this mentality. We see plastic as a raw material with a high monetary value that can also generate employment for youth."

Up to seven plastic types can be found in dumping sites, and the lowest grade plastics reduce the lifespan of the landfill. Of these, PET (polyethylene terephthalate) bottles are the easiest and most recyclable. But Nepal does not have extended producer responsibility to recycle the plastic the factories manufacture. And in its absence, organisations like Creasion are taking up the task.

Creasion already recycles up to 300 metric tons of PET and plans now to move on to other plastic types such as PP (Polypropylene), PVC (Polyvinyl chloride) and MLP (Multi-Layered Plastic) with financial support from the Coca Cola Foundation.

Plastics thrown haphazardly into rivers and streams cause flooding and pollution, affect the water cycle, and harm aquatic species and wildlife in the region. Microplastics have been found in Nepal's rivers, and have even been traced to human blood.

Recycling can derive many benefits. On one hand, it cleans up the natural environment. On the other, some 15,000 informal waste workers in Nepal, predominantly from the Tarai and India, can improve their living conditions and be financially independent.

Through the RecyclerSaathi program, Creasion works closely with waste workers by providing them compensation under a fair pricing system to sell plastic recyclables instead of paying middlemen. These workers are also trained to run their own enterprises and receive fire extinguishers, helmets, shoes, gloves and jackets to work at collection sites and waste sorting centres.

"We work with the workers to provide them with training and safety tools. We also run development capacity training so that they regain dignity in the profession," adds Mishra. "Waste management should be a formal occupation and the workers can contribute to the GDP."

Even so, most waste workers were initially reluctant when the organisation told them about fair pricing and safety measures, since the informal scrap recycling industry was run by a syndicate. The Covid-19 pandemic turned out to be a boon for Creasion. It was able to earn the trust of workers by providing them with rations, safety and even legal aid during the crisis.

A baling site supported financially by Creasion in Budhanilkantha is led by Sushila Kathayat and sorts PET bottles and produces 12 bales of compressed plastic bundles a day, each weighing over 80kg.

"I have been working here for seven months 12 hours a day. After I dropped out of school I took up this work but this job has provided me a livelihood," says Ram Prasad, one of the workers at the site.

The large capacity collection and sorting site also supported by Creasion in Kathmandu receives 1,500kg of waste a day and produces up to 10 bundles of compressed plastic which are sold at Rs65 each. The site also sorts other types of plastics and has 35 employees.

Radha Gurung is another worker at the collection site in Bharatpur. The 35-year-old has been collecting waste since she was nine, but now oversees other staff at the site. She says: "We have more female workers here and we get paid Rs700 a day. We and our families incur a huge loss if the site is closed even for a day."

Creasion is affiliated with three other similar sites in Bharatpur where the waste is collected by the metropolitan city and delivered to the sorting centres. Segregated PET bottles are then brought to the baling centre. The one in Chitwan alone receives up to 600kgs of PET bottles a day, which are then compressed into single bundles weighing 150kgs by three staff working eight hours a day.

Most of the waste here used to be dumped on the riverside by hotels and restaurants, but recently they have started giving PET bottles to Creasion after finding out that they will be paid for it.

Bharatpur metropolis only has one dumping site near the Narayani River that flows down to the Chitwan National Park. It is unclear why a dumping site was chosen so close to a river, but the waste from the landfill spills into the river and pollutes water on which wildlife downstream depend.

While a poor waste management system is part of the problem, the lack of awareness and change in attitude is another. Which is why Creasion has also reached out to 10 public schools in Bharatpur, Kasara and Sauraha covering up to 2,000 children with information on recycling. The students have now formed Waste Smart Clubs where they learn about waste segregation at source and management. Club members from Grades 6-10 then teach their juniors what they have learned themselves. Students have also planted trees in their schools and homes with plans to plant more this World Environment Day on 5 June.

"I also segregate waste at my home after teaching my parents about it," says 11-year-old Aman, a member of his school's Waste Smart Club. "I plan to study more and give back to my community by informing them about important environmental issues like this."

Creasion has even set up a Waste Smart Museum in Chitwan that showcases both the wildlife species and plastics. There are three buckets separated into biodegradable, non-biodegradable and plastic wastes. People initially ignored them, but have now started using the bins. The organisation is also involved in replanting the areas that were previously deforested.

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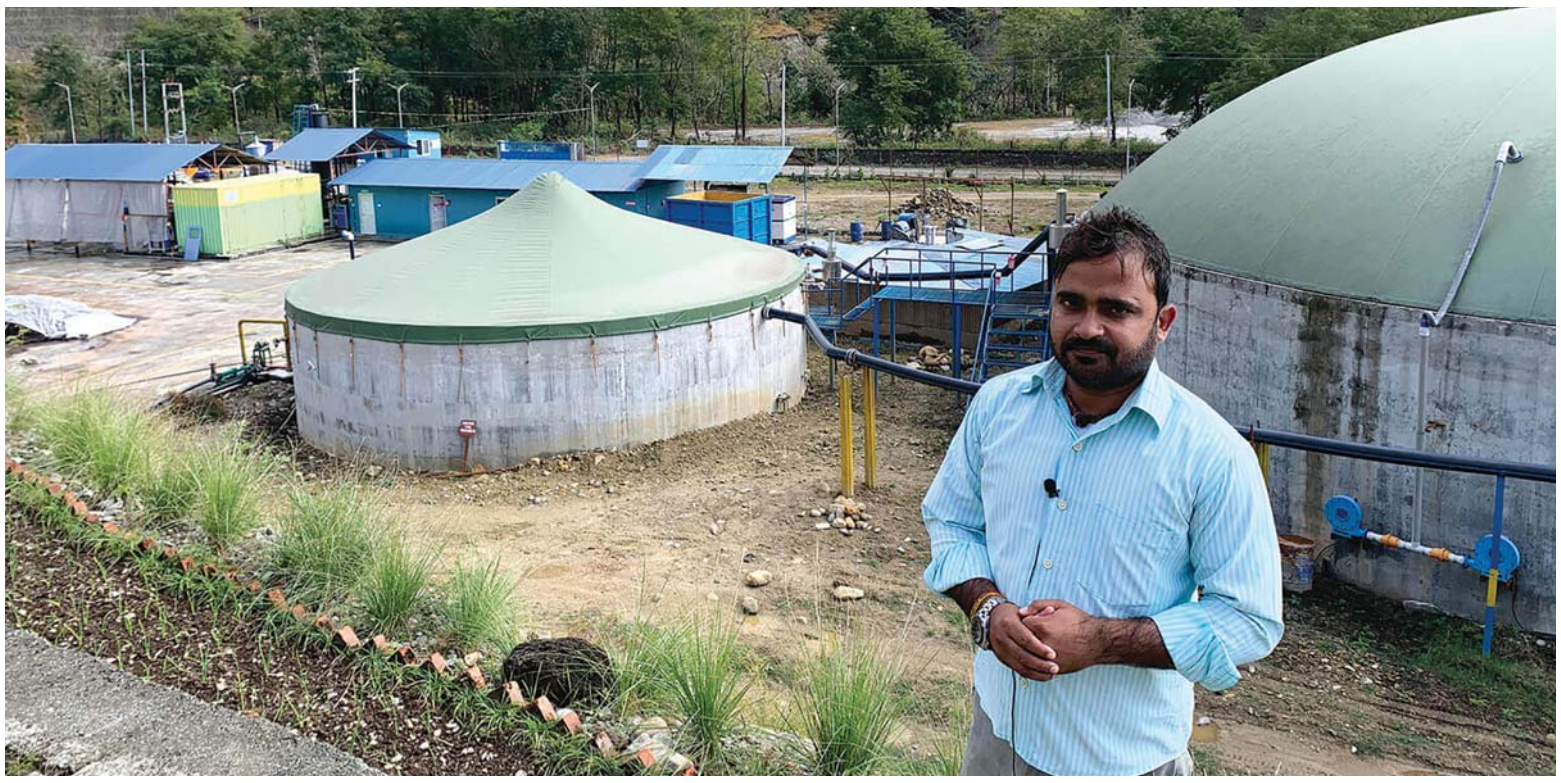

MORE BULLSHIT

After success in turning cow dung into kitchen gas, Nepal now moves to industrial-scale plants to replace LPG and chemical fertiliser

Industrial-scale digester of Gandaki Urja in Kaski.

PHOTOS: KUNDA DIXIT

Sonia Awale

The newly-elected Mayor of Kathmandu Balen Shah has called waste management of the city his top priority. Even before being sworn in, he visited the Sisdol landfill site to see what a challenge he has given himself.

Mayor Shah wants to incinerate segregated waste at the new dumping site in Bancharedanda, and compost the biodegradable garbage into fertiliser to distribute to farmers.

All good ideas, but what the structural engineer/rapper mayor may have missed is the potential to turn the waste also into biogas.

Urban municipalities across Nepal generate over 2,200 metric tons of solid waste a year, 54% of which is organic, and this could generate close to 10,000 metric tons of methane gas. Gasifying just the waste from Kathmandu Valley could produce 1,700 cylinders of bio-CNG daily.

"Given that more than half of Nepal's municipal garbage is biodegradable, generating bio-CNG in digesters could be the answer to energy self-sufficiency and sustainability," writes Sushmita Dulal of WindPower Nepal (*see overleaf*).

She adds: "This is a win-win, it improves the urban environment, reduces carbon emission and slashes the trade deficit by substituting LPG and chemical fertiliser use."

Nepal has already demonstrated that it is a pioneer in household biogas, with more than 300,000 digesters in use that turn farm manure into kitchen gas.

The focus has now shifted from domestic biogas to industrial-scale plants for densely populated urban centres. At present, there are 18 commercial biogas plants across Nepal, nine of them under construction.

One of them is Gandaki Urja in Pokhara, the third industrial-scale biogas plant in Nepal and also the largest, with a digester volume of 3,000 cubic metres. It started operations in December 2019, and has been supplying bio-CNG cylinders to big hotels, restaurants, as well as selling fertiliser made from the effluent.

But the lack of raw material (manure and waste biomass) due to minimal waste segregation at the source, Gandaki Urja is having to feed its digesters waste from agriculture and poultry farms and is only generating 1,200 tons of biogas a day.

Half of the plant's revenue comes from the effluent which is dried and sold as organic fertiliser in farms in Kaski and Tanahu. The plant can produce up to 11,000 tons of fertiliser a year, and while it is nowhere near Nepal's total demand of 900,000 tons a year, there will be more organic fertiliser when other commercial plants are built.

Says Kushal Gurung of Gandaki Urja: "Every year Nepal suffers from a chronic lack of chemical fertilisers but it could become a net exporter with a potential of generating 2.5 million tons a year provided that the government prioritises and invests in organic fertilisers."

The biggest challenge for developers is that LPG gets over Rs1,000 subsidy per cylinder, although the new budget plans to slash the tax rebate.

This means the cost per kg for the bio-Compressed Natural Gas (bio-CNG) has to be the same as that of the LPG regardless of its higher manufacturing cost.

"At the rate our petroleum imports are going up, there is no way we will meet our climate targets but I have not lost hope," says Gurung. "Turning to biogas is a no-brainer. It will create jobs, convert waste into energy, reduce greenhouse gas emission, as well as generate organic fertiliser which will increase soil fertility."

But technological know-how remains a big challenge in scaling up commercial biogas in Nepal. All the machinery has to be imported and in case of repairs or damage, there is no local skill, adding to the cost of operation. Nepal government's Alternative Energy Promotion Centre (AEPC) has been at the forefront of promoting biogas. Until recently it was also providing technical support and subsidy to industrial plants (up to 40% in machinery) before the World Bank stopped its investment in biogas.

"Biogas is the answer to waste management in Nepal. Increasing job opportunities and reducing our dependence on LPG with this alternative sounds great too but it is not easy to secure funding," explains AEPC bioenergy expert Sushim Amatya.

If biogas is to substitute a bigger portion of Nepal's LPG consumption, developers need government subsidies and investment to be directed in the most cost-efficient sectors.

One strategy could be to promote different forms of alternative energies side by side: upgrading Nepal's electricity infrastructure so that transmission lines can handle increased supply, while also subsidising biogas by slashing the rebate on LPG. Adds Amatya: "Subsidising LPG makes absolutely no sense, it benefits only India and the Gulf. It will definitely not help the climate but renewables also need to be easily available and affordable, the notion of cleaning up the environment alone will not move the general population unless cost-effectiveness is added to the mix."

Waste to

How to increase the demand for biogas and scale-up commercial plants to reduce LPG imports

Sushmita Dulal

Nepal is currently experiencing a combined economic-ecological crisis: rising petroleum imports and a deteriorating environment.

Urban municipal waste management is a pressing issue: even though there is inadequate understanding of waste as a resource, putting pressure on landfills and the environment.

Given that more than half of Nepal's municipal garbage is biodegradable, generating bio-CNG in digesters could be the answer to energy self-sufficiency and sustainability. This is a win-win-win: it improves the urban environment, reduces carbon emission and slashes the trade deficit by substituting LPG and chemical fertiliser use.

Domestic scale biogas technology is one of Nepal's success stories in the past three decades. The family-level plants offer cooking solutions for more than 0.3 million rural households. However, with growing concern about organic waste management and increasing demand for clean energy, large-scale biogas technology has been gaining traction in recent years.

The government with support from development partners has been exploring the possibility of scaling up the biogas technology and supporting the private sector, factories and municipalities for the installation of large-scale biogas plants.

There are now 344 large-scale biogas plants in the country, but only a few of them have digesters largeı than 3,000 cubic metres, considered a threshold for being commercially viable.

A recent waste management baseline survey of Nepal indicates that urban municipalities in Nepal generate nearly 2,400 metric tons per year of solid waste, more than half of which is organic. This means almost 10,000 metric tons of purified biogas (bio-CNG) with more than 90% methane concentration.

An additional 1.5 million metric tons of bio-CNG per year could be generated using livestock manure. Even if we could use only 10% of this waste, we could still generate nearly 145,000 metric tons of bio-CNG per year — equivalent to more than 10 million LPG cylinders — and help to reduce Nepal's LPG imports by 30%, narrow the trade gap with India and save foreign currency.

Using bio-CNG generated from waste as cooking fuel would save more than 2.8 million tons of carbon dioxide equivalent of greenhouse gases. Large-scale biogas plants have the potential to fulfil two of the country's most pressing needs: effective organic waste management and clean energy supply.

The availability of waste as raw materials as well as the urgency for a sustainable waste management model creates a huge opportunity for Nepal. But the development of large-scale biogas systems have been hampered by unfavourable government policies, techno-economic and institutional challenges.

For example, the Environment Protection Rule (2020) stipulates that the installation of a biogas plant larger than 1,500 cubic metres requires an environmental impact assessment. Gandaki Urja, a

value with biogas

SUSHMITA DULAL

Kaski-based private sector biogas developer that produces bio-CNG and fertiliser from farm waste, took more than a year to obtain environmental approval.

Similarly, even with government subsidies, the CAPEX for large-scale biogas technology is costly, making private sector project developers unwilling to invest. There is also a lack of skilled human resources for the operation and maintenance of large-scale biogas.

There is a need to ensure a technology supply chain (production, distribution and after-sales service). Periodic training and follow-up through the Council for Technical Education and Vocational Training (CTEVT) could create the necessary expertise.

Likewise, an awareness program to sensitise consumers about its environmental and economic benefits, knowledge transfer and training could reduce the uncertainty and encourage consumers to use bio-CNG.

The way ahead for energy sufficient Nepal is setting realistic targets for biogas production with appropriate planning and strategies for large-scale biogas development.

The partnership between the government and private sectors will also increase the uptake of biogas which can save both our ecology and economy.

Sushmita Dulal *is the manager at WindPower Nepal.*

Turkish biofuel

Turkish Airlines is moving towards greener air travel by progressively introducing biofuels to power its fleet of more than 300 aircraft. The flag carrier launched its initiative to use non-fossil fuel with its Istanbul–Paris flight in February with a new sustainability-themed leaf livery of its Airbus 321 (*pictured*). The airline that serves the most destinations worldwide will then expand the use of biofuels in its other flights.

Besides this, the airline is implementing other measures to reduce its carbon footprint. For example, its pilots now adopt single engine taxing, route optimisations to shorten flight time, and adjust aircraft centre of gravity to optimise fuel use. Turkish says it has already saved 37,820 tons of aviation turbine fuel (ATF) and prevented 116,809 tons of carbon from being released into the atmosphere in 2021 alone. This is equivalent to 292,000 trees being planted.

"Protecting the future of these regions that possess unique beauty with their natural, historical, financial, or cultural assets is a significant matter for the Turkish Airlines family," says the airline's Chairman Ahmet Bolat. "While carrying many passengers around the world every day, we also wish to protect these places for the future so they are unspoilt."

In 2021, Turkish Airlines prevented the waste of 1.471 million litres of water, which equals to usage of 59,000 people, by harvesting rainwater from its Turkish Technic hangar at Istanbul airport, and treating it to be used in the facility. The airlines also saved 6,710 trees from being cut, recycled 632 tons of non-hazardous waste last year. It also ensured that 39,119 cubic metres of soil stayed clean by recovering 3,000 tons of hazardous waste from the areas surrounding Istanbul airport. Similarly, Turkish Ground Services (TGS) possesses 309 electric vehicles in nine airports located in Istanbul and Anatolia which save on fossil fuel use when they collectively travel approximately 38,000 km every day.

Because it operates the world's youngest fleet (average 8 years) of fuel-efficient new generation aircraft, Turkish Airlines has already achieved considerable fuel savings.

Turkish Airlines has painted its Airbus 321 with new bio-fuel livery, and besides Paris, plans to use them on flights to Stockholm, Oslo, Gothenburg, Copenhagen and London. The carrier's Green Class zero-waste concept uses biodegradable tissues, cups, food trays as well as nature-friendly pillow covers and blankets made with 100% recycled threads.

SONIA AWALE

Toilet Café

The last place anyone would like to locate a new café would be next to a public latrine. But this is exactly what the Independent Sanitation Workers Cooperative has done at its facility in Patan.

And the reason for it to be adjacent to a toilet is that the café's kitchen runs on biogas from an underground digester using its waste. The architecturally modern design of the building at Patan Dhoka bus stop is one of a slew of 'smart toilets' that the municipality commissioned last year. The buildings harvest rainwater, recharge groundwater, use solar power and other eco-friendly methods.

Most people walk by the facility, and do not notice the café because they just do not expect it to be there. The waiters are in neat uniforms, there are biscuit packets stacked on the shelf above, and the tea is boiling on top of a clean blue flame from the biogas stove.

The café serves tea and *khaja* sets of momo, *choila baji*, and other snacks. It generates income to manage the restroom next door, where people have to pay per use but can use the washroom for free. The staff are all from previously excluded 'lower' caste groups like Beula, Pode or Chyame who have found new respect in the community. "We are providing jobs and also keeping the dignity of the profession," explains Prakash Amatya of Aerosan Nepal which manages the facilities.

The waste from the restrooms feeds into the digester below the building, where the bacteria decompose it releasing methane that fuels the stoves in the café. The odourless spent slurry is collected, dried and used as fertiliser.

Aerosan runs a chain of similar facilities in Tripureswor, Baneswor, Mangal Bazar and Swayambhu. There are plans to replicate this model in Pokhara and Biratnagar.

Having an ecofriendly café and toilet can be a longterm investment, and running costs are minimal. Amatya admits that people were hesitant at first to come to the café, but adds, "With time they have got used to it."

Aria Shree Parasai

Kathmandu University, 27th CONVOCATION CEREMONY – Phase II

3-June-2022, Friday

Kathmandu University: Brief Introduction
Kathmandu University, an autonomous, not-for-profit, self-funding public institution established by an Act of Parliament in December 1991 with an objective to be dedicated to maintaining the standard of academic excellence in various classical and professional disciplines, aspires to serve the nation by fulfilling the needs of the society through the motto of taking knowledge and skills "from the campus to the society."
The university operates through seven Schools i.e. School of Arts, School of Education, School of Engineering, School of Law, School of Management, School of Medical Sciences and School of Science. At present, the University offers more than 200 long-term and short-term academic programs and courses from intermediate to Ph.D. levels.

Most of the academic programs are credited for being pioneers as they are introduced for the first time in the country. As of May 2022, the University has produced more than 38,339 graduates with 45.28% female students. According to reports, KU graduates account for more than 45 percent of Nepal's total medical practitioners.
In the 27th convocation ceremony (Phase II) 1,715 graduates are receiving degrees from Ph.D to undergraduate in various programs. Among them 680 (39.65%) are female. Of the total, 157 (9.15 %) are foreign students from India, Sri Lanka, Maldives, USA, Australia, China, Bangladesh, Netherlands and Germany.

School Highlights

Multidisciplinary, Eastern and Contemporary Studies focus areas for teaching and research: In addition to the aforementioned programs, KU is in process of introducing several multidisciplinary programs such as Yogic Sciences and Well-Being, Bachelors in Law and Economics, and Bachelors in Technical and Vocational Education. Bachelor in Yogic Sciences and Wellbeing will be launched in August 2022 in collaboration with the School of Medical Sciences. This program is unique as it promotes learning and teaching of our ancestral knowledge through an academic institution whereas Bachelors in Technical and Vocational Education (B. Tech. ED) helps create secondary and higher secondary school teachers in the field of vocational education.
School of Science is the signatory school of Kathmandu University and has been pioneer of introducing many academic programs in the country such as Pharmacy, Environmental Science and Engineering and biotechnology. Many other programs such as Glaciology, Natural Resource Conservation, Wildlife Management, Computational Mathematics and Applied Physics also have been the new ventures. The School has well equipped labs and several research centers in which a range of faculty projects funded by International and National Institutes is undergoing, like NORPART, KOICA-IRDP, TWAS, IFS, Energize Nepal and UGC-Nepal.

The School of Education envisions transforming the educational landscape of Nepal and playing an instrumental role in developing teachers, teacher educators, educational leaders, development professionals, and researchers who can contribute to positive changes in the society. The school has several multi-, inter- and trans-disciplinary programs covering wide areas from languages to science and technology. Having already achieved a wide coverage in the diversity of students over the years with over 1700 alumni, the School now aims to forge reasonable expansion of its programs across the country, especially in technical and vocational areas. The B Tech Ed programs recently initiated in Sindhuli, Janakpur and Butwal exemplify this vision.

Kathmandu University School of Medical Sciences (KUSMS) is a pioneering institution in Nepal to advance the field of health sciences training, research and services in the country. Since 1994, it has created history by initiating novel, high-quality academic programs that have changed the landscape of health sector of the country. The school launched its own constituent MBBS program in August 200, but with the availability of two facilities – Dhulikhel and Chaukot (Panauti) it has now every major departments and disciplines of health sciences. Currently, almost 1500 students get admission every year in various undergraduate and postgraduate programs in nursing, dental, medical, physiotherapy and other disciplines through the network of 12 affiliated and extended colleges. The school enrolls highest number of foreign students as well. The current leadership now aims to forge reasonable expansion of its programs, especially in Yogic Science and Well Being and Mental Health areas. The university is committed towards quality education and health care through its specialty and super-specialty centers.

School of Management has made the MBA as a demanding professional program and is also running other graduate and undergraduate courses such as EMBA, BBA, BBIS, BPH, MPPM and a couple of PGDs. In near future the school is planning to launch Masters in Family Business.

The main thrust of KU is to become a teaching cum Research University and has strengthened research in all of its schools. The research activities are in diverse fields such as environment and climate change, energy, engineering, health, medicinal plants and organic farming, computer and information technology, management, education and arts; The University has been granting and facilitating research funds since the beginning.

Priority of the University, as always, is to develop KU as a research-focused institution along with its excellence in teaching and learning. A New and Encouraging program has been introduced in 2021 to facilitate subject-specific research by assigning dedicated Research Fellows (RFs) under each Professor and Associate Professor working in the University. Bonafide KU students, including foreign nationals, enrolled as MS by research, M. Phil and Ph.D., are eligible to work under this scheme. Lately, Himalaya Centre for Asian Studies (HICAS) and KU Nepal Center for Contemporary Studies (KU-NCCS) have been established to prioritize on Eastern and Contemporary Study/Research. Annual conduct of Survey of Nepali People (SNP), curriculum preparation for Bachelor and Master in Local Government Practices, etc. are some of the recent focuses to strengthen Contemporary Studies components within the school.

Schools	Graduates		Total
	Female	Male	
Management	3415	3411	6826
Science	1646	1965	3611
Engineering	539	3767	4306
Arts	1802	1261	3063
Education	764	963	1727
Law	75	41	116
Medical Sciences	9119	9571	18690
Total	17,360 (45.28%)	20,979 (54.72%)	38,339

SCHOOLS, DEPARTMENTS AND PROGRAMS

School of Arts	
Department of Arts and Design	Bachelor in Fine Arts
Department of Development Studies	Bachelor in Community Development; Economics
	Master in Development Studies; Human and
	Natural Studies; Urban Studies
	Land Management and Heritage Studies
Department of Languages and Mass Communication	Bachelor in Media Studies
Department of Music	Bachelor in Music
	MA (Music)
Respective Departments	Ph.D
School of Education	
Department of Educational Leadership	PGDA Educational Management
	Master of Education in Childhood Development;
	Leadership and Management
	M. Phil in Educational Leadership
Department of Language Education	Bachelor of Education in Chinese Language Teaching
Department of Steam Education	Bachelor of Technical Education in Civil Engineering;
	Information technology; Mechanical Engineering;
	Mechanical Engineering (Automobile)
	Graduate Diploma in Higher Education
	PGD in Mathematics Education
Respective Departments	Masters Program (One Year or Two Years): M.Phil; Ph.D.
School of Engineering	
Department of Chemical Science and Engineering	Bachelor of Engineering in Chemical Engineering
Department of Civil Engineering	Bachelor of Architecture; Civil Engineering
Department of Computer Science and Engineering	Bachelor of Engineering in Computer Engineering
Department of Electrical and Electronics Engineering	Bachelor of Engineering in Electrical and Electronics Engineering
Department of Geomatics Engineering	Bachelor of Engineering in Geomatics Engineering
Department of Mechanical Engineering	Bachelor of Engineering in Mechanical Engineering
Respective Departments	M.S by Research (Science/Engineering)
	Masters of Engineering (Mech/Power/Comm/
	M. Tech IT/ Structure/ Civil)
	Ph.D (Science/Engineering Program)
School of Law	
Respective Departments	Bachelor of Economics and Law (BEc-LL.B)
	Bachelor of Business Management and Bachelor of
	Law (BBM-LL.B)
	MS by Research (Law)
School of Management	
Department of Management Informatics	Bachelor of Business Information Systems (BBIS)
	Bachelor in Professional Hospitality (BPH);
	Business Administration (BBA)
	EMBA (Individual)
Respective Departments	Master of Business Administration (MBA):
	Public Policy Management (MPPM)
	M.Phil; Ph. D.
School of Medical Sciences	
Dental Department	BDS
	MDS Community Dentistry; Conservative Dentistry &
	Endodontics; Oral & Maxillofacial Surgery; Oral Medicine &
	Radiology; Oral Pathology; Orthodontics; Pedodontics;
	Periodontics; Prosthodontics
Department of Anaesthesia	MD Anaesthesiology
Department of Biochemistry	MD Biochemistry
Department of Community Medicine	MD Community Medicine
Department of Medicine	DM Cardiology; Gastroenterology; Nephrology; Neurology
Department of Obstretics and Gynaecology	MD Obstetrics & Gynaecology
Department of Pediatrics	MD Paediatrics
Department of Physiotherapy	BPT
Department of Radiodiagnosis annd Imaging	B.Mid.
Department of Surgery	M. Ch. CTVS; Neurosurgery; Plastic & Reconstructive Surgery;
	Urology; Surgical Gastroenterology
	MS General Surgery
	B. Sc. in Nursing
Nursing Department	BNS
	M. Sc. in Child Health Nursing; Community Health Nursing;
	Medical Surgical Nursing; Midwifery
Respective Departments	M. Sc. Medical Anatomy; Medical Biochemistry;
	Medical Microbiology; Medical Pharmacology; Medical Physiology;
	Public Health (Epidemiology); Public Health (Global Health)
	MBBS
	MD Dermatology; Forensic Medicine; General Practice;
	Internal Medicine; Microbiology; Pathology; Pharmacology;
	Physiology; Psychiatry; Radiation Oncology; Radiodiagnosis
	MS Anatomy; Ophthalmology; Orthopaedics; Otorhinolaryngology
School of Science	
Department of Biotechnology	B.Tech in Bio-Technology and B.Sc. Agriculture
	M.Tech (Biotech); Ph.D. (Biotech)
Department of Biotechnology/Pharmacy	M.S by Research (BT/Pharmacy)
Department of Computer Science and Engineering	B.Sc. Computer Science
Department of Environmental Science and Engineering	B.Sc. Environmental Science
	B.Tech in Environment Engineering
	M.S by Research (Science/Engineering)
	M.Sc. Environment Science
Department of Environmental Science/Physics/Math	M.Phil (Environment Science/Physics/Math)
Department of Life Sciences	B.Sc. Agriculture
Department of Mathematics	B.Sc Computational Mathematics
Department of Pharmacy	Bachelor of Pharmacy (B.Pharm)
	Masters of Pharmacy
	Respective Departments
	Ph.D

RESEARCH ACTIVITIES IN KU

The main thrust of KU is to become a teaching cum Research University and has strengthened research in all of its schools. The research activities are in diverse fields such as environment and climate change, energy, engineering, health, medicinal plants and organic farming, computer and information technology, management, education and arts; The University has been granting and facilitating research funds since the beginning.
Priority of the University, as always, is to develop KU as a research-focused institution along with its excellence in teaching and learning. A New and Encouraging program has been introduced in 2021 to facilitate subject-specific research by assigning dedicated Research Fellows (RFs) under each Professor and Associate Professor working in the University. Bonafide KU students, including foreign nationals, enrolled as MS by research, M. Phil and Ph.D., are eligible to work under this scheme.

Currently, there are more than 80 major projects undertaken by various Schools, some of the signature projects of KU are:
NORHED, IFS, CMP, NORPART, TWAS, Snow and Ice, LELAM, BAICE, SUNREM-NORHED, FOCUS, Chure Project, CAPSEM, ERASMUS Plus, World Bank Initiatives, and Green Hydrogen Projects are among the other projects currently in operation at KU.

Projects		
Funding Partners	Area of Project	Amount
ISET - Nepal Services Pvt. Ltd.	Water	Rs. 3665000
SLU, Global Sweden	Biotechnology	$26,000
International Foundation for Science	Medicine	USD 9000
University of Berne, Switzerland	Agriculture	EUR 104720
USAID/ Purdue University	Entrepreneurs	$26,623
KU-IRDP-NTIC	Agriculture, Energy, Health	Rs. 31312822 & $40,751
Norwegian Directorate for Higher Education and Skills		NOK 8038284
United States of America	Academic & Research exchange	
Hydro Cen		Rs. 150000000
DIKU, Norwegian agency		RS. 97394
UGC	Turbine, Climate Change	Rs. 12150000
National Cooperative Federation Pvt. Ltd.		Rs. 1350000
EVENT Project, MOEST, GON		Rs. 16907047
WRRDC	Glacier	Rs. 2383168
Simula Research Laboratory, Oslo,Norway	Machine learning	Rs. 2688000
NORAD	Hydropower	Rs. 112397420
Energize Nepal Programme	Energy	Rs. 34102000
USAID Medicines, Technologies and pharmaceutical Services (MTaPs)	Medicines	Rs. 5195465

Scholarships, academics and exchange programs:

To ensure that the most vulnerable and brightest students are provided with unperturbed access to education, there are a multitude of scholarships available to students at different schools of the university.

In addition, select students at different schools are enrolled in full-expenses-covered student exchange programs through ERASMUS, NORPART, and many other programs. Students may also participate in several research projects at the university. The courses, the academic calendar, and the curriculum at KU are compatible with international universities, and hence the students could access the credit transfer facility.
To ensure that the graduates are employed post-graduation, there are placement cells at all the schools. Some of the scholarships available at different schools are enlisted below:

SCHOLARSHIPS

S.N.	Scholarships	Schools
1	Judda Bahadur Scholarship Fund	School of Management
2	Bishnu Pd. Adhikary Scholarship Fund	School of Management
3	Shilva Shrestha Scholarship Fund (SOM)	School of Management
4	Dr.Bipin Adhikari Scholarship Fund	School of Law
5	Madhuri & Mohan Man Sainju Scholarship Fund	Different Schools
6	Hinu Ramesh Nath Dhungel Scholarship Fund	School of Arts and School of Science
7	Bidhya Acharya Scholarship Fund	School of Science (Dept. of Pharmacy)
8	Dr.Mahesh Nath Parajuli Scholarship Fund	School of Education
9	Dr. Nhuchhe Ratna Tuladhar Scholarship Fund	School of Medical Sciences
10	Merit based Scholarship	All Schools
11	Need based Scholarship	All Schools
12	UGC Formula Funding Scholarship	All Schools
13	Local Scholarship	All Schools
14	Staff / Faculty Family Scholarship	All Schools
15	Loan Scholarship	All Schools

MAJOR SERVICES AND FACILITIES:

General Services
KU accord host of services to the students within its premises namely: Hostel facility for international students, swimming pool facilities, 24 hours power backup, gymnasium, canteens and fast food café, state-of-the-art multipurpose halls for indoor games and events, separate hostels for boys and girls that can accommodate over 200 students in each building, staff quarters, shuttle service facility from Kathmandu Valley to Dhulikhel covering different routes and shuttle service to the hospitals to name a few.

Information and Library services:
The students, faculties, and staff are provided with an email facility with the KU domain, inter-library loans, reference and referral services, reprographic services, and provide access to online books (free sites only), journals, and articles. The users are also provided with extensive user education.
Furthermore, to optimize the teaching and learning experiences, there are separate reading spaces, book stack rooms, meeting halls, smart computer labs, archive spaces, faculty-student discussion rooms, and adequate space for reference sections within the Central Library at KU. The KU Central Library is open from 8:00 AM to 7:00 PM, 7 days a week which also renders a host of other facilities, namely: Online Public Catalog Access (OPCA) services, Online hybrid and modular classes and e-learning facilities, video conferences, super computer facility, etc. The library's and canteen's services are available via RFID cards provided by the library, which are also used for access control to physical facilities within the University.

DISTINGUISHED SCHOLAR TO DELIVER THE CONVOCATION SPEECH
Prof. B.S. Murty
Director, IIT Hyderabad.

Since August 26, 2019, Prof. B.S. Murty has been the Director of IIT Hyderabad. Murty began his academic career with a Diploma in Metallurgy from Govt. Polytechnic, Vijayawada, in 1983, and went on to earn a BE from VRCE Nagpur in 1986, and a ME from IISc Bangalore in 1988. He received his PhD from IISc, Bangalore, in 1992. He has been a Professor at IIT Madras since 2004. He also served at IIT Kharagpur for 12 years. In the Department of Metallurgical and Materials Engineering at IIT Madras, he is an Institute Professor and the Girija & R. Muralidharan Chair Professor. Since 2011, he has been an Adjunct Professor at Ryerson University in Toronto, Canada, and an Associate Faculty member at the University of British Columbia's School of Engineering since 2016.
He has made major contributions in the domains of nanotechnology and nanoscience. He has established a National Facility for Atom Probe Tomography at IIT Madras, which includes a remotely operable Local Electrode Atom Probe (LEAP) that can describe materials in 3D at the atomic scale (the first of its kind in the world). In collaboration with Deakin University in Australia, he established the Deakin-IITM Centre of Excellence on Advanced Materials and Manufacturing at IIT Madras. He has over 450 journal papers and four books to his credit. He has supervised 44 PhDs, with 16 of them still in progress. He has completed more than 65 sponsored research projects, is actively working on eight, and has submitted 20 patents.
For his contributions, has been bestowed with over twenty prestigious awards including Shanti Swarup Bhatnagar Award (2007), JC Bose Fellowship award (2018-2023), Professor Extraordinarius from University of South Africa (2021), Honorary Doctorate from Deakin University, Australia (2017), Life time Achievement Award of IIT Madras (2016) and GD Birla Gold Medal (2015).
He is affiliated with over 10 institutions, including the World Academy of Sciences, Asia Pacific Academy of Materials, Indian National Academy of Engineering (FNAE, 2007), Indian Academy of Sciences (FASc, 2008), Electron Microscopy Society of India (FEMSI, 2020) and the Indian Institute of Metals (FIIM, 2015).

His is a Fellow of The World Academy of Sciences (FTWAS, 2018), Asia Pacific Academy of Materials (FAPAM, 2013), ASM International (FASM, 2010), Indian National Academy of Engineering (FNAE, 2007), Indian National Science Academy (FNA, 2013), Indian Academy of Sciences (FASc, 2008), National Academy of Sciences (FNASc, 2008), Electron Microscopy Society of India (FEMSI, 2020), Indian Institute of Metals (FIIM, 2015), Andhra Pradesh Academy of Sciences (FAPAS, 2016).

ENDOWMENTS:

In addition to the scholarships and exchange programs aforementioned, KU has also initiated the provision of an endowment fund, where an individual, family, or institution can make necessary fund contributions which would be used by the university for various academic purposes as per the wish of the donors. So far, KU has already received generous deposits totaling NPR. 290,030,745.00 as endowment contributions from various donors.

COLLABORATIVE LINKAGES

At present, research-innovation-publication related collaboration of the University with 145 academic institutions from 30 countries has contributed greatly in exchange of practical knowledge, experiences, curriculum, faculties and several other dimensions of academic importance. Exchange of faculties/staffs/students, and collaboration for research and publication were major areas of international partnership KU focused in the past. More than a hundred faculties have already benefited from academic collaborations. Majority of the faculties who have pursued higher studies from KU have gone through the linkages. However, it has now prioritized introducing and implement joint degree programs for those students who fulfil the acceptance requirement at both Institutions (KU and partner university). Norwegian University of Science and Technology, The University of South-Eastern Norway (USN) and Western Sydney University, Australia have already agreed and started executing such program with KU at Ph.D. level.

INTERNATIONALIZATION OF KATHMANDU UNIVERSITY

KU has reserved quota (10% of its total student number) for foreign students in all schools and programs. So far, foreign nationals from 50 countries including from very far away countries like Benin, Zambia, South Africa and others have chosen Nepal as their destination for the higher education which constitutes about 13 percent of our total graduates. Though a good number of those foreign nationals are from the neighborhood, the university feels proud to have hosted 62 students from the USA, 26 students from Germany, 19 from Canada, 18 each from Zambia and Britain, 14 from South Africa, 11 from Norway and 7 from Russia. Students from Sweden, Switzerland, Austria, Belgium, Spain, The Netherlands, Denmark, Greece Czech Republic, Latvia, Poland, Ukraine, Benin also have already chosen KU as their destiny for higher education. This year also 281 foreign nationals (8.88%) from 12 countries were able to get degree from KU amidst the Covid-19 anxiety, The provisions of fee waivers, scholarships and free accommodation for the foreign students are expected to make Kathmandu University more attractive destination for the foreign students as well. In order to upgrade our classroom teaching and research, KU has put joint degree programs in priority, and some of such programs are already in the process, in collaboration with several international universities of Norway, Australia and India (IITs).

Taxman cometh

Comrade Janardan announced a hefty increase in all kinds of taxes in his budget speech to Parliament. The grabberment cannot function without revenue, and it is good to see that it is putting our hard-earned moolah to good use by introducing new taxes. That is what we pay them for.

The few Nepalis who still have disposable income will therefore not have to sit around unproductively on their non-performing asses anymore.

But, fellow Romans, this is not the time to hee and haw. As we all know, the early bird gets to kill two others with one stone, which I might add, are worth more than the one in the bush that has got the worm. It is therefore time for every Nepali of taxable age to ask himself, herself and itself some wrenching questions: Is the government doing enough to enlarge the tax bracket and widen the tax net?

My personal feeling (and this is entirely my opinion and does not in any way reflect the opinions, if any, of my present employers, or of those I have worked for in the past, and may work for in the future) is that it is not.

The government is not doing enough. It is being complacent by evading raising taxes. The Ministry of Finance Pvt Ltd must get serious about more taxes otherwise it is never going to meet the Five-Year Plan target for extravagance, waste and corruptitude.

The Department of Taxonomy must ensure that only two things are certain in life: death and taxes. In the national interest it is my duty to privately leak to you the salient points of how they are going to go about doing that:

1. Torture. Since the Maoists were in the habit of breaking skulls and bones when they ran an underground economy and they are now in the governing coalition, Comrade Jan must revive those time-tested extortion skills. This particular technique involves physical contact at the sub-cuticular level between the taxman and the fingernails of the payee. 100% guarantee or your money back.

2. Graft Tax. The government has also come up with a cunning plan to tax corruption with 13% VAT, 2% Service Charge and 4% National Corruption Surcharge on every kickback and bribe given or received within Nepal's territorial jurisdiction.

3. Capital Flight Levy. No, this does not mean we have to line up to pay airport tax again. This is a 50% tariff on all cash being smuggled inside the false bottoms of outbound passengers.

4. Adulteration Tax. This is a levy collected by Nepal Oil Corruption at all gas stations mixing homemade liquor in the petrol. Since petrol now costs Rs180 per litre, the government should logically get its share of the loot with this new Adultery Tax.

5. Sunshine Tax. The government has decided to introduce a syntax on sunshine at a flat rate of Rs100 per head per hour for civil servants sunning themselves in the terrace. A Lunar Tax will also be introduced for moonlighters.

The Ass

CDO Regd No 194/056/57 Lalitpur, Central Region Postal Regd. No 09/066/67