



TATHASTU
Institute Of Civil Services

DAILY CURRENT AFFAIRS

31th DECEMBER, 2024



TATHASTU
Institute Of Civil Services

9560300770  www.tathastuics.com  support@tathastuics.com

HEAD OFFICE: 53/1, UPPER GROUND FLOOR, BADA BAZAR ROAD,
OLD RAJINDER NAGAR, NEW DELHI-110060



S.NO. TOPIC

1. On India's obligations towards the Rohingya
 2. States and the danger of poorly manufactured drugs
- Other Topics**
3. The Sheikh Hasina extradition demand, India's options
 4. ISRO's docking mission on; spacecraft reach right orbit
 5. Grave new world : Human –induced loss of elders threatens various species

ON INDIA'S OBLIGATIONS TOWARDS THE ROHINGYA

On India's obligations towards the Rohingya

What has a recent report by The Azadi Project and Refugees International said about India's refugee policy for the Rohingya people? How many Rohingya refugees reside in India? What does the 1951 Refugee Convention state? Does India have a domestic refugee law?

EXPLAINER

Aaratrika Bhaumik

The story so far:

A recent study examining the plight of Rohingya refugees detained in India, conducted jointly by The Azadi Project and Refugees International has highlighted "gross violations of constitutional and human rights" and criticised India's "failure to uphold its obligations under international human rights treaties." Based on interviews with detainees, their families, and legal representatives, the report reveals that "a significant number of Rohingya refugees continue to be incarcerated even after serving their prescribed sentences."

How are Rohingya refugees protected under international law?

The Rohingya people of Myanmar constitute the world's largest stateless population, estimated to number approximately 2.8 million. Denied citizenship and subjected to decades of persecution by Myanmar's authorities, majority of the Rohingya have been compelled to flee their homeland due to genocidal violence. At present, they are dispersed across multiple countries. According to the United Nations High Commissioner for Refugees (UNHCR), nearly 22,500 Rohingya refugees currently reside in India.

The 1951 Refugee Convention and its 1967 Protocol enshrine the principle of non-refoulement, which prohibits States from expelling individuals under their jurisdiction when substantial evidence suggests they would face persecution, torture, or other severe human rights violations upon return. This principle is a cornerstone of human rights, humanitarian, and refugee law. Moreover, its status as customary international law imposes binding obligations on states regardless of formal assent. The Office of the United Nations High Commissioner for Human Rights has reiterated that "the principle is characterised by its absolute nature without any exception".

Additionally, in a 2007 advisory opinion, the UNHCR affirmed that non-refoulement constitutes customary law and is binding on all states, including those not parties to the Refugee Convention or the 1967 Protocol.

What is India's stand?

As India is neither a signatory to the Refugee Convention nor a party to key international instruments, such as the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, and the International Convention for the Protection of All Persons from Enforced Disappearance, it maintains that it bears no legal obligation to provide asylum or adhere to the principle of non-refoulement. India continues to detain Rohingya refugees under archaic domestic legal frameworks, notably the Foreigners Act, 1946, and the Passport Act, 1967. These legislations confer sweeping executive powers to regulate the presence of foreigners and enable authorities to categorise Rohingya refugees as "illegal migrants".

In response to a public interest litigation (PIL) in the Supreme Court seeking the release of detained Rohingya refugees, the Centre clarified in March that while they are entitled to the right to life under Article 21 of the Constitution, they do not possess the right to reside or settle in India. In 2021, the top court in *Mohammad Salimullah and Anr. versus Union of India*, rejected a plea to prevent



Destitute living: A general view of Rohingya camps area near Shaheen Bagh in New Delhi on December 12. SAKSHI SHEKHAR KASHYAP

the deportation of 170 Rohingya refugees detained in Srinagar accepting the Centre's national security concerns.

In October 2024, the Delhi High Court dismissed a PIL seeking directions to the authorities to admit Rohingya refugee children in local schools. The court noted that the matter involved international implications and required a policy decision to be taken by the government.

What are India's international obligations?

The International Covenant on Civil and Political Rights, to which India is a party, implicitly obligates member states under Article 7 to refrain from refouling individuals to places where they may face torture or cruel, inhuman, or degrading treatment. The UN Human Rights Committee has unequivocally affirmed this interpretation. Similarly, the principle of non-refoulement is enshrined in other significant international instruments, including the International Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Rights of the Child, both of which India has ratified.

Further, the Convention Against Torture makes an express mention of non-refoulement under Article 3. While India's position as a signatory but not a ratifier renders its provisions non-binding, any deviation from the

convention's principles would compromise the commitment India demonstrated by signing the treaty.

Although India lacks a domestic refugee law, the Supreme Court in landmark rulings such as *Vishaka & Ors. versus State of Rajasthan* (1997) and *National Legal Services Authority versus Union of India* (2014), has affirmed that in the absence of domestic legislation on a matter, international conventions and norms must be applied by municipal courts to ensure the dignity of human life. Additionally, Article 51(c) of the Constitution mandates that the state must strive to promote respect for international law and treaty obligations.

Several High Courts in India have also interpreted the principle of non-refoulement as integral to Article 21 of the Constitution, which guarantees the right to life and personal liberty. Notable examples include the Gujarat High Court's decision in *Kaer Abbas Habib Al Qutaib versus Union of India* (1998) and the Delhi High Court's ruling in *Dongli Lion Kham versus Union of India* (2015), both of which involved refugees from different countries seeking protection from deportation.

What are the existing concerns?

The absence of a standardised refugee policy has led to the disparate treatment of different refugee populations, driven

by India's shifting geopolitical and diplomatic interests. While groups such as the Tibetans, Sri Lankans, and Afghans are granted refugee certificates or long term visas by the government, most Rohingya refugees – despite being registered with the UNHCR – often face arbitrary detention and criminal imprisonment. Further, the controversial Citizenship Amendment Act, 2019, excludes persecuted Muslim minorities, such as the Rohingya, from its ambit.

The lack of legal representation and aid for detained Rohingya refugees also poses a severe concern. The report by Azadi Project and Refugees International highlights that civil society organisations working on behalf of Rohingya refugees in India are starved of funding, as most Foreign Contribution (Regulation) Act licences that allow for the receipt of foreign funding have been revoked. This has made lawyers reluctant to take on cases involving the Rohingya, fearing potential repercussions.

Moreover, detention centres housing Rohingya refugees, including pregnant women and children, are plagued by dehumanising living conditions. In light of the appalling conditions at the Matia Transit Camp, the Supreme Court in October, directed the Assam State Legal Services to conduct surprise visits and evaluate the conditions in which the refugees are living.

THE GIST

A recent study examining the plight of Rohingya refugees detained in India, conducted jointly by The Azadi Project and Refugees International has highlighted "gross violations of constitutional and human rights" and criticised India's "failure to uphold its obligations under international human rights treaties."

As India is neither a signatory to the Refugee Convention nor a party to key international instruments, it maintains that it bears no legal obligation to provide asylum or adhere to the principle of non-refoulement.

The report highlights that civil society organisations working on behalf of Rohingya refugees in India are starved of funding, as most Foreign Contribution (Regulation) Act licences that allow for the receipt of foreign funding have been revoked.





Introduction: The Rohingya Crisis: A Global Issue

- ❖ The Rohingya are the world's largest stateless population (~2.8 million).
- ❖ Persecuted in Myanmar; victims of genocidal violence.
- ❖ Nearly 22,500 Rohingya refugees reside in India (UNHCR data).
- ❖ Recent report by The Azadi Project and Refugees International highlights gross human rights violations.



International Protections : International Laws Protecting Refugees

- ❖ **1951 Refugee Convention:** Principle of nonrefoulement prohibits deporting individuals to where they face persecution.
- ❖ Recognized as customary international law; binding even on non-signatories.
- ❖ **Other Instruments:**
 - International Covenant on Civil and Political Rights (Article 7).
 - Convention on the Rights of the Child.
 - International Convention on the Elimination of All Forms of Racial Discrimination

India's Refugee Policy: India's Legal Stance

- ❖ India is not a signatory to the 1951 Refugee Convention or its 1967 Protocol.
- ❖ Domestic laws like the Foreigners Act, 1946, and Passport Act, 1967, classify Rohingya as "illegal migrants."
- ❖ Supreme Court rulings:
 - Rejected plea to prevent deportation of Rohingya refugees (2021).
 - Dismissed PIL to admit Rohingya children to schools (2024).

India's International Obligations : Commitments Under Other Treaties

- ❖ **International Covenant on Civil and Political Rights:** Prohibits torture or cruel treatment.
 - Supreme Court precedents: Apply international norms in absence of domestic laws (e.g., Vishaka case).
 - Article 51(c) of the Constitution: Obligation to promote respect for international law.

Existing Concerns : Challenges for Rohingya Refugees in India

- ❖ Lack of a standardised refugee policy leads to inconsistent treatment.
- ❖ Arbitrary detention and dehumanising conditions in camps (e.g., Matia Transit Camp).
- ❖ Citizenship Amendment Act, 2019 excludes Muslim minorities.
- ❖ Civil society organisations face funding restrictions under FCRA





Key Findings of the Report : Azadi Project and Refugees International Report

- ❖ Gross violations of constitutional and human rights.
- ❖ Arbitrary detention of refugees, even after serving sentences.
- ❖ Lack of legal aid and representation.
- ❖ Detention centres: Poor living conditions impacting women and children.

Moving Forward : Recommendations

- ❖ Establish a domestic refugee law to ensure standardised treatment.
- ❖ Uphold principles of non-refoulement as part of customary international law.
- ❖ Improve living conditions in detention centres.
- ❖ Strengthen legal aid and support for refugees.
- ❖ Reassess policies to align with international human rights obligations





STATES AND THE DANGER OF POORLY MANUFACTURED DRUGS

States and the danger of poorly manufactured drugs

Over the last few years, there have been a number of incidents across India involving not of standard quality (NSQ) drugs, the most recent being the deaths of five young mothers in Ballari district, Karnataka, allegedly due to contaminated drugs manufactured by a pharmaceutical company in West Bengal.

Due to the unique nature of India's Drugs and Cosmetics Act, 1940, the pharmaceutical company located in West Bengal can sell its drugs in all States across the country, despite being licensed and inspected only by drug inspectors in the State where its manufacturing facility is located. Since each State is responsible for licensing and inspecting pharmaceutical manufacturing units located within its territory, it means that there is little that States such as Karnataka can do to stop poorly manufactured drugs from other States flooding their pharmacies. Data supports this assertion. Out of the 894 samples randomly tested by our State drug laboratories over the last three years, an overwhelming 601 samples that failed testing were from manufacturers located in States other than Karnataka.

Information sharing is a way out

The only regulatory tool at the disposal of my department to deal with these NSQ drugs manufactured outside Karnataka is to prosecute the pharmaceutical company. But criminal prosecutions take a very long time. During the pendency of the trial, there is nothing that we in Karnataka can do to stop the pharmaceutical company from continuing to manufacture and sell its drugs within Karnataka. As in the law, only the drug inspectors in the home States of these pharmaceutical companies can take steps to cancel or suspend their manufacturing licences. Given this reality of drug regulatory laws in India, it is imperative that we think of solutions to improve the situation urgently.

A simple and cost-effective measure, which



Dinesh Gundu Rao

Health Minister,
Karnataka

The Union government must help States to improve drug quality

may help improve the quality of drugs across the country, is to promote greater information sharing between the drug control departments of State governments and various public procurement agencies. Currently, there is no way for drug inspectors of the Karnataka Drugs Control Department or the Karnataka State Medical Supplies Corporation Ltd. (KSMSCL) to verify the antecedents of pharmaceutical manufacturers located outside our State. For example, it would be of great help if all central and State drug testing laboratories made available their test results in a centralised database. This would enable a drug inspector or a procurement official in Karnataka or any other State to track the number of times a pharmaceutical company's drugs have failed testing across the country in any government laboratory. It will become easier for drug inspectors to adopt a risk-based approach while making enforcement and procurement decisions.

Have a centralised database

Similarly, it would be very helpful if all State drug inspectors made available inspection reports and licensing information for all manufacturers in their respective States in one centralised database. By making available this information in a single database, it will become easier for procurement agencies such as the KSMSCL to verify the antecedents of pharmaceutical companies before purchasing drugs from them and avoid scenarios such as the recent scandal in Maharashtra where dubious suppliers sold spurious antibiotics to a public hospital. Such a database will also help procurement officers to understand the quality of inspections across States and prioritise manufacturers from States with a reputation for conducting more rigorous inspections of their manufacturing units. In the absence of such a verifiable database, most procurement agencies have to just take the word of pharmaceutical companies submitting tenders. The KSMSCL does not have an independent way

to validate the claims of pharmaceutical companies located outside Karnataka when making public procurement decisions. This impacts public health.

Apart from inspection and test reports, it would also help if the Union Ministry of Health could create a central register which records all pharmaceutical manufacturers blacklisted by different procurement agencies for supplying NSQ drugs. This would be very helpful in weeding out the bad players from the market and improving the quality of drugs available in public hospitals.

Most tenders require pharmaceutical companies to disclose if they have been blacklisted by any entity. But, currently, there is no way for procurement officers to verify the authenticity of this information independently.

States and legal powers

A third simple reform is to equip individual States with the legal powers to block manufacturers from outside the State to continue selling drugs within their State, while they are under investigation for the sale of drugs that may have caused deaths or other serious adverse events to patients within the State. State drug controllers should have the power to bar pharmaceutical manufacturers, located out of State, from selling their drugs within their State until the manufacturer is able to demonstrate that it has rectified the problems that led to the manufacture of NSQ drugs.

However, since the Drugs and Cosmetics Act, 1940 is central legislation, there is little that an individual State such as Karnataka can do to amend the law or its enforcement in other states. The initiative for legislative reform must come from the Union Health Ministry. Karnataka will be happy to support any reforms that will help improve the quality of drugs in Karnataka and across the country.

I will shortly write a letter to the Union Health Minister, J.P. Nadda, to address this critical issue.

Introduction

- ❖ **Context:** Rising incidents of NSQ drugs in India.
- ❖ **Recent Example:** Deaths in Ballari, Karnataka due to contaminated drugs.
- ❖ **Problem:** Regulatory gaps due to the Drugs and Cosmetics Act, 1940.

↳ regulates import, manufacture, sale or distribⁿ of drugs and cosmetics through licenses & permits.

Regulatory Challenges

- ❖ **Licensing and Inspection:**
 - Companies licensed and inspected only by their home State.
 - Cross-border issues with NSQ drugs flooding other States.
- ❖ **Karnataka Case Study:**
 - 601 of 894 NSQ drug samples were from outside Karnataka.





❖ **Enforcement Limitations:**

- Criminal prosecutions are slow.
- States lack power to act against out-of-State manufacturers.

Proposed Solutions

1. Enhanced Information Sharing

- Centralised database for drug test results across States.
- Risk-based enforcement decisions using national data.

2. Inspection and Licensing Reports

- Centralised repository of inspection and licensing data.
- Helps procurement agencies verify manufacturer claims.

3. Blacklist Register

- Union Ministry to maintain a central register of blacklisted manufacturers.
- Ensures transparency in public procurement.

State-Level Empowerment

❖ **Grant Legal Powers:**

- Allow States to block sales from out-of-State manufacturers under investigation.

❖ **Legislative Reform:**

- Amend the Drugs and Cosmetics Act, 1940.
- Initiative must come from the Union Health Ministry.

Benefits of Reforms

- ❖ Improved drug quality across the nation.
- ❖ Protection of public health and safety.
- ❖ Reduced incidents of spurious or substandard drugs.
- ❖ Strengthened trust in public healthcare systems.

Conclusion

- ❖ **Urgent Need:** Regulatory reforms to address gaps in drug quality control.
- ❖ **Way Forward:** Collaboration between States and the Union Health Ministry.
- ❖ **Commitment:** Karnataka to support initiatives for improved drug regulation.





OTHER ARTICLES

The Sheikh Hasina extradition demand, India's options

Months after ousted Bangladesh Prime Minister Sheikh Hasina fled to New Delhi seeking exile during anti-government protests in August 2024, Bangladesh, on December 23, 2024, formally asked India to extradite her for "judicial process". Dhaka sent a *note verbale* to India's External Affairs Ministry on the same day, with the Press Secretary to Bangladesh's Chief Adviser saying, "We want our relations with India to be based on fairness, equality and dignity", ahead of India's Foreign Secretary's visit to Bangladesh with the hope of rekindling constructive relations between the two countries.

Ms. Hasina was declared an absconder for not surrendering after leaving Dhaka on August 5, 2024. A first information report was filed on August 13, 2024 against her and other former associates. She has been charged with conspiracy to eliminate the students involved in protests, and the mistreatment and the killing of hundreds of the protesters, which are labelled as genocide and crimes against humanity. The state machinery is working to collect credible and probative facts for the prosecution to make a strong and winnable case against her. The Dhaka-based International Crimes Tribunal on October 17 issued arrest warrants for Ms. Hasina and 45 others including former Cabinet ministers, advisers and military and civil officials. On November 18, the Tribunal gave the investigation authority a month's time, with the date of December 17, 2024 for them to wrap up the investigation. A charge sheet will be filed soon.

Trial in absentia

In common law jurisdictions, a trial cannot commence in absentia of an accused. To commence this trial, Ms. Hasina must be present before the court and participate either physically or virtually.

As an alternative to this, in some jurisdictions, a lawyer can be presumed to have constructive presence, but it is still contentious in common law jurisdictions. However, Section 339 B of the Code of Criminal Procedure 1898 of Bangladesh says that an accused person can be tried in their absence. Regarding a hearing in absence of an accused, the International Criminal Court (ICC) also has a recent precedent, when on October 29, 2024, its Pre-Trial Chamber III issued a decision to hold a confirmation of charges hearing for suspect Joseph Kony in his absence. Kony, suspected of 36 counts of war crimes and crimes against humanity in northern Uganda, was absconding for 19 years.

As a matter of fact, Bangladesh appears to be an apt place for trial, as alleged acts have been committed there along with the presence of evidence and victims. While Bangladesh has asked India to extradite Ms. Hasina via a diplomatic channel, the Indian government has not yet commented on this. Although there is an obligation on the state under customary



Aklavya Anand

Assistant Professor at the Faculty of Law, University of Delhi



Shailesh Kumar

Lecturer in Law at the Department of Law and Criminology, Royal Holloway, University of London, and a Commonwealth Scholar

international law under the *aut dedere aut judicare* principle to "either extradite or prosecute" any accused facing a grave international crime such as genocide, war crimes, crimes against humanity, enforced disappearance or torture, India is not obliged to extradite Ms. Hasina to Bangladesh.

India's potential defences

India has neither aided, abetted, solicited nor is complicit in the alleged crimes of Ms. Hasina. In 2013, India concluded a bilateral extradition treaty with Bangladesh. It has the Indian Extradition Act 1962, which authoritatively provides a framework for the extradition of nationals and non-nationals. In this case, Bangladesh is the requesting state and India is the requested state. The requested state can take two defences, which bar the claim of Bangladesh to get an extradition. First, India can argue that Ms. Hasina has committed political offences, which are a legitimate ground to reject such a proposal. However, this argument does not look plausible. At least, *prima facie* there will be no takers to say that the acts of Ms. Hasina appear to be a political offence. Long before her ouster there were reports by Amnesty International, Human Rights Watch and many other organisations that her regime was involved in state-sponsored violence against the civilian population such as torture, enforced disappearance, persecution and other inhuman acts of high gravity. Therefore, at least, whether she has committed such crimes or not can only be decided by a fair trial.

Second, common law follows the rule of non-inquiry. It means that, traditionally, extradition is the executive's discretion, and the person concerned cannot seek intervention of the municipal court. However, this practice does not have much support now. Nevertheless, Ms. Hasina, though not an Indian citizen, is still protected by Articles 20 and 21 of the Indian Constitution. In *National Human Rights Commission vs State Of Arunachal Pradesh & Anr.* (1996), the Supreme Court of India ruled that even a non-citizen is entitled to get protection of Article 21 as it uses the term 'person'. Based on the current situation and the past record of Bangladesh on torture and prison conditions, the Court would have reasonable basis to protect Ms. Hasina and bar the Indian government from extraditing her to Bangladesh.

There is, however, a way ahead. The Indian government can allow an in-house arrest of Ms. Hasina in India in the same condition she is staying in and ensure that she participates in her trial through video conferencing with a lawyer of her choice physically present before a Bangladesh court. After this, India can assure Bangladesh that it will fully cooperate in the investigation and evidence gathering.

Bangladesh authorities must have access to Ms. Hasina with prior notice. In case the judgment is against her, then too, based on the sentencing

agreement, she can undergo her sentencing in India. This measure shows *bona fide* intent on behalf of India and demonstrates compliance with Article 2(4) of the UN Charter, while safeguarding the risk to and the concerns of the accused.

Ms. Hasina is no longer in power and considering her old age and infirmity, any extraneous treatment is not justifiable for her well-being. She has the right to human rights. This can be achieved through reason and a far-sighted approach. Polemics and emotional arguments can have long-time and serious consequences for India-Bangladesh ties. Bangladesh must understand that Ms. Hasina's trial is important and that she must not be available to face the brunt of vengeance. At the same time, India needs to make room for Bangladesh state agencies to operate and conduct her trial successfully. If this works out, it will show to the international community, a collaborative approach to fair trial as well.

ICC's jurisdiction, alternative solution

Bangladesh is the 113th state party to the Rome Statute of the ICC. This could be a matter before the ICC, based on Articles 5, 11 and 12 of the Rome Statute, and for fulfilling the ICC's criteria of jurisdictions, i.e., material, personal, territorial, and temporal, as follows: being a 'crimes against humanity', it passes the threshold of gravity (material); it is committed by a citizen of a state party (personal); committed in the territory of Bangladesh (territorial); and occurred after 2002 (temporal). The ICC is a court of last resort, and it must supplement, rather than supplant, national jurisdiction. Its jurisdiction is based on the principle of complementarity, as per Article 17. As Bangladesh has started this trial at the domestic level, the ICC has no reason to intervene.

However, Article 53 of the Rome Statute, when read with Article 17, shows that if an accused's rights are in danger, and if proceedings are not conducted independently and impartially, and are conducted in a manner which, in the circumstances, is inconsistent with an intent to bring the person concerned to justice, then there is reasonable ground to believe that the interests of the accused are in grave danger. Ms. Hasina will not be able to get her rights of impartial and independent judicial authority under Article 14 of the International Covenant on Civil and Political Rights (ICCPR) read with Article 21(3) of the Rome Statute. In that case, the Office of the Prosecutor of the ICC (OTP), under Article 15, can start a preliminary examination. Therefore, as an alternative to the first suggestion, it can be possible that under Article 14 of the Rome Statute, Bangladesh can refer this matter to the ICC, or under Article 15 there can be a *proprio motu* preliminary examination by the OTP. Ms. Hasina can surrender to the ICC with an assurance that she must not be extradited to Bangladesh.

Bangladesh must understand that Sheikh Hasina must have a fair trial while India needs to make room for Bangladesh state agencies to conduct this



2 Significant contracts
AIP Module
Air Independent Propulsion (DRDO) }
↓
enhances endurance of submarines by reducing dependency on surfacing for O₂.
2) EHW Torpedo

ISRO's docking mission on; spacecraft reach right orbit

Hemanth C.S.
SRIHARIKOTA

The Indian Space Research Organisation (ISRO) successfully launched the Space Docking Experiment (SpaDeX) mission on Monday.

The PSLV C60 rocket carrying two small satellites, SDX01 (Chaser) and SDX02 (Target), along with 24 payloads, lifted off from the first launchpad of the Satish Dhawan Space Centre in Sriharikota at 10 p.m. About 15 minutes after lift-off, the two small spacecraft weighing about 220 kg each were launched into a 475-km circular orbit as intended.

"The rocket has placed the satellites in the right orbit which is into a 475-km circular orbit. The spacecraft's solar panels have been deployed successfully. The two SpaDeX satellites have moved one behind another so over a period of time it will pick



Lift off: The PSLV-C60 mission lifting off from the spaceport in Sriharikota on Monday night. B. VELANKANNI RAJ

up further distance; the distance will increase by 20 km over the next few days and then the rendezvous and docking process will start. The docking process can happen in another one week; the nominal time will be approximately January 7," said ISRO Chairman S Somanth.

With the SpaDeX mission, the ISRO aims to exhibit technologies needed for spacecraft rendezvous, docking, and undocking

using two small satellites which have been mastered by only an elite group of spacefaring nations.

The demonstration of this technology is essential for futuristic missions, including sending an Indian astronaut to the moon, sample return from the moon, and the building and operation of an Indian space station.

CONTINUED ON
» PAGE 10

GRAVE NEW WORLD :

HUMAN –INDUCED LOSS OF ELDERS THREATENS VARIOUS SPECIES

Climate extremes and habitat destruction caused by human activity can hasten the loss of elders in a species and disrupt the stability of populations. Ecologists have documented a cascade of consequences moving through the population when elders disappear, altering structures and behaviour

Rupax Kumar

As people age, they accrue richer experiences, and their wisdom deepens.

So do animals. From elephant matriarchs to shark grandmothers, the elders of the animal kingdom carry a treasure trove of knowledge, having guided, and still guiding, their families through the uncertainties of life in the wild.

The earth's life forms are very diverse and unsurprisingly complex. No two species age the same. Yet there is also a growing body of evidence that older, wiser individuals are crucial in similar ways in many species.

"Because of the diversity in animal social systems, the important position that older individuals often occupy can be for a variety of reasons, but often involves them either being particularly dominant individuals who stabilise the social hierarchy in some way through their presence or by acting as repositories of information that they've acquired over their lifetime – which can be particularly important when times get tough," Josh Firth, an associate professor at the University of Leeds, said.

"There are a range of potential benefits of older individuals across different types of animals. They are not the same for all species," Keller Kopf, a senior lecturer in ecology at Charles Darwin University, Australia, added.

Without these elders, fish may never find their spawning grounds, and birds would get waylaid as they flew across continents.

Ageing in the wild

A review published in Science on November 21 suggested that the worldwide loss of old individuals due to shrinking habitats, hunting, climate change, and other human-caused disturbances can be particularly detrimental in long-lived species.

According to the researchers, protecting a species' elders is important for all its members to be able to pass on their cultures and what they know about adapting to changing weather in their future generations, and to help buffer them against human disturbances.

While this may go for both short- and long-lived species – the mayfly lives for a day, whereas the Antarctic glass sponge can live for millennia – the focus on long-lived species in particular is partly because of data.

"Evidence for the contributions of older individuals in short-lived species is limited," Kopf, the lead author of the study, said.

Scientists have been studying ageing for decades, but most of their research has focused on the negative effects of biological ageing on human health. Only recently have they been looking at the benefits of ageing in wild populations.

"Research on the benefits of old individuals has been happening in different disciplines in silos," Kopf said.

What old means

He and his team analysed more than 3,800 peer-reviewed studies from 1900 to 2021, investigating the roles of elderly individuals in several species. These roles included knowledge transmission, assisted parental care, intraspecific cycling,



A herd of elephants follows its leader in Tazara National Park, Tanzania. HOWARD/REUTERS

and coping with extreme weather.

"Until now, no study has pulled together data across different taxonomic groups to highlight the range of potential benefits of growing old," according to Kopf.

Before the team could analyse the data, it had to agree on what "old" meant. A three-year-old mouse could be considered old, whereas a 30-year-old elephant could be considered young, Kopf said. But the lack of data on short-lived species limited the researchers' options to two groups: long-lived mammals and birds (which are often social species that invest significant time and effort in parenting their offspring) and cold-blooded animals (like fish and reptiles, which continue to grow throughout their lifespan).

"Traits such as social behaviour, migration, parental care, and increased reproductive output make older individuals in moderate to long-lived species essential for their ecology and therefore conservation," Kopf said.

"However, this importance exists on a continuum and is not a binary."

Of elephants and orcas

Climate extremes and habitat destruction caused by human activity can hasten the loss of elders in a species and disrupt the stability of populations. Ecologists have documented a cascade of consequences moving through the population when the elders disappear, altering social structures and behaviour.

For example, young elephants of both sexes depend on help from the matriarch, the oldest female and often the largest. One 2011 study of African elephants in the wild found that when they were played recordings of lions roaring, a herd's members would create a defensive formation. Groups led by matriarchs more than 60 years old gathered faster and confronted the threatening calls with more aggression.

"If older individuals are removed from

the wild, by capture or unnatural death, younger ones struggle to survive without their knowledge," Anindya Saha, a professor at the National Institute of Advanced Studies, Bengaluru, said. "Because they are directionless, there might be an increased risk of negative interactions with humans."

"Our work on Asian elephants in Bandipur and Nagarhole National Parks in Karnataka shows that females in herds (with calves) and lower experienced individuals exhibited high levels of stress hormone," Sanjeeta Sharma Pothireal, an assistant professor at Kyoto University in Japan, said. A 2018 study she co-authored suggested that the higher stress could be due to lack of help with parental care, the high energy demands of vigilance, and the responsibility of protecting calves from predators.

Studies have also found that older female orcas (*Orcinus orca*) undergo menopause. According to experts, one compelling explanation for this phenomenon is called the grandmother hypothesis. Grandmother orcas stop being able to reproduce so they can help their daughters care for calves, protect them from predators, and guide them to the best feeding grounds.

A new conservation paradigm

Because of the great benefits of protecting the older members of a species, the researchers have advanced a new paradigm called longevity conservation.

"Biodiversity conservation and threatened species policies should protect age structure," Kopf wrote in *The Conversation*. "This is particularly important in long-lived species that produce more offspring with age, or where migration, social networks, and cultural transmission of knowledge are required for survival."

For example, in fish and reptiles, the older individuals lay more eggs and give birth to offspring better equipped to

Protecting a species' elders is important for all its members to be able to pass on their cultures and what they know about adapting to changing weather to their future generations and to help buffer them against human disturbances

survive environmental fluctuations. So Kopf advocates age and size-based fisheries, management strategies that better protect older individuals.

But significant challenges arise when the longevity conservation paradigm comes in contact with ground realities, such as in India.

More than 700 marine fish species are caught every year along both coasts of the country, with fishing vessels targeting multiple species simultaneously. How experts can implement a management strategy that protects individuals while allowing uninterrupted harvesting is unclear.

"Protecting larger, older fish is important for conservation, but in a multi-species fishery like India, it's extremely challenging," Mayuresh Gangal, a research affiliate at the Nature Conservation Foundation, said.

"Different species vary in size as they age, and their life histories differ significantly. On top of that, the fishing gear cannot be very target-specific in multi-species fisheries. It is difficult to tailor gear to target specific species or sizes effectively."

Kopf also wrote in *The Conversation* that the "loss of old individuals is not yet recognised by the International Union for Conservation of Nature as a means of losing threatened species."

(Rupax Kumar is Science Communication and Outreach Lead at the National Centre for Biological Sciences, Bengaluru. kumar.rupax@gmail.com)



Tarangire
National Park
↓
Tanzania

— Keep Learning and Keep Revising! —

