



## Editorial

Even as this is being written, there seems to be a respite and a glimmer of hope that the severity of the pandemic is passing. Let it soon become history to learn from and prevent a recurrence. Some of the lessons lie in the origin of zoonotic diseases like Covid19.

This issue provides insights into these deadly phenomena and how we can be part of the solution instead of being perpetrators and later victims of unintended consequences of our own actions.

Hope also springs from the likes of Chandana Bauri, the hut dweller who showcased a seemingly impossible trajectory to become a legislator without being propelled by the power of money or lineage; and Tsultrim Chonjor who proved that no hurdle is too big to overcome.

The growing Great Green Wall of Africa accentuates the need to come together to find a way out rather than dwell on the problems.

India has its own share of woes- big and small- to surmount. The young readers must play an active role in scripting the future of this great nation.

**“Every nation has a message to deliver, a mission to fulfill, a destiny to reach. The mission of India has been to guide humanity.” – Swami Vivekananda**

Read, reflect and revert with your thoughts and feelings. We look forward to your support and suggestions.

**Editorial Team**

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### International Watch



INDIA EU  
SUMMIT- 2021



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Great Green Wall



THE GREAT GREEN  
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DISEASES



ISRAEL -PALESTINE  
CONFLICT



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**LEGAL JURISPRUDENCE IN INDIA**

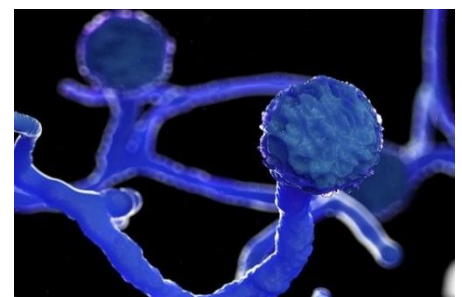
## National Ringside



**DEGENERATION OF DEMOCRACY**



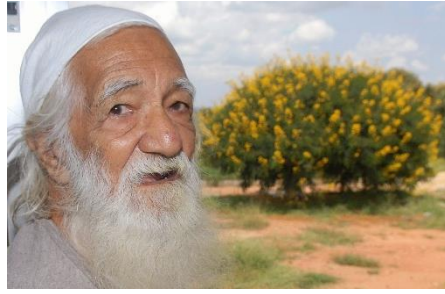
**CENTRAL VISTA PROJECT**



**BE MINDFUL – MUCOR MYCOSIS**



 **CYCLONES  
TAUKTAE AND YAAS**



 **SUNDARLAL  
BAHUGUNA**



 **4000 KMS  
NEW HIGHWAYS**



 **SUPER  
BLOOD MOON**



**22<sup>ND</sup> ANNIVERSARY OF THE  
POKHRAN II**



 **MOBILE CONNECTIVITY  
FOR THE FIRST TIME**



 **2DG DRUG –  
G FOR GAME CHANGER**



 **500 OXYGEN PLANTS  
ACROSS INDIA**



 **VACCINE SHORTAGE –  
MYTHS AND FACTS**



 **DISASTER MITIGATION  
A SUCCESS STORY**

# Incredible India & Incredible Indians

## Know Your Padma Awardees



## Architectural Wonders of India



## Flora & Fauna of India



## Know Your Legacy

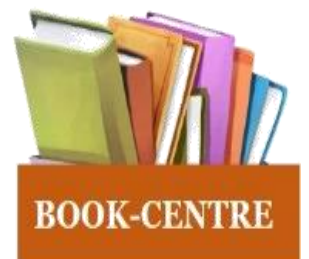
## Know Your Nation



## Swachh Bharat Success stories



**CURIOSITY**  
**corner**



The India-EU leaders' meeting was held on 8<sup>th</sup> May 2021 in Porto, Portugal. The leaders met in a hybrid format to discuss pandemic assistance, open trade, sustainable development, climate change and human rights. EU and the member states have extended their support by providing 100 million euros worth of medical supplies such as oxygen, oxygen generators, concentrators, ventilators and medication.

Various EU leaders thanked India and PM Narendra Modi for the help extended when Europe was battling the pandemic last year. The leaders also praised India's efforts in battling Covid-19. French President Emmanuel Macron said that we did not have to **"listen to lectures from anyone about vaccine supplies."**

PM Modi also appealed to the EU leaders to support the trade-related aspects of intellectual property rights (TRIPS waiver) for vaccine-production related patents at the WTO (World Trade Organisation). The US has already extended its support for the TRIPS waiver following PM Modi and US President Joe Biden's talks about the pandemic.

Both sides have also agreed to resume negotiations regarding the Free Trade Agreements (FTA) that were suspended in 2013. "I am positive that we will be able to do a major step forward because between the EU and India there is a close relationship and also a lot of untapped potential," said European Commission President Ursula von der Leyen.

The group of 27 countries and India, the world's largest democracy, also reaffirmed their commitment towards a safer, prosperous and more democratic world.

The summit also addressed climate change, biodiversity loss, increasing pollution rates and the various steps to promote ecological and sustainable modernisation of the economies. Multiple measures to strengthen international security were also discussed.



This summit displayed the warm camaraderie between PM Modi and the EU leaders. **India stood by the side of Europe during the first wave of pandemic in 2020.** EU leaders have expressed solidarity with India and have assured their support in the fight against coronavirus. "Today we showed the strength of the EU-India relationship and its great potential," said Charles Michel, President of the European Council.

## Do You Know?

**Hybrid meeting:** A meeting where some people are gathered in a particular venue while the others join the meeting via various virtual means such as conference calls and video calls. The 2021 India-EU summit was held in hybrid format due to the ongoing pandemic.

**The EU countries:** Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

**Intellectual property:** It is a category of property including intangible creations (those that do not have a physical presence) of the human intellect e.g. copyrights, patents, trademarks, trade secrets etc.



Emilie Ouamouna was returning home after playing with his friends on a huge tree with a hollow trunk in his village called Meliandau in Guinea, West Africa. That night he experienced high fever, black stools and vomiting.

Soon his sister, mother and grandmother developed symptoms. All died in a matter of days.

The disease spread quickly in the village and many died without treatment.

It took three months before the disease "Ebola" was identified.

Later, researchers painstakingly traced the origin of the disease to that tree where Emilie was playing.

A small number of bats were found roosting in that huge fruit tree.

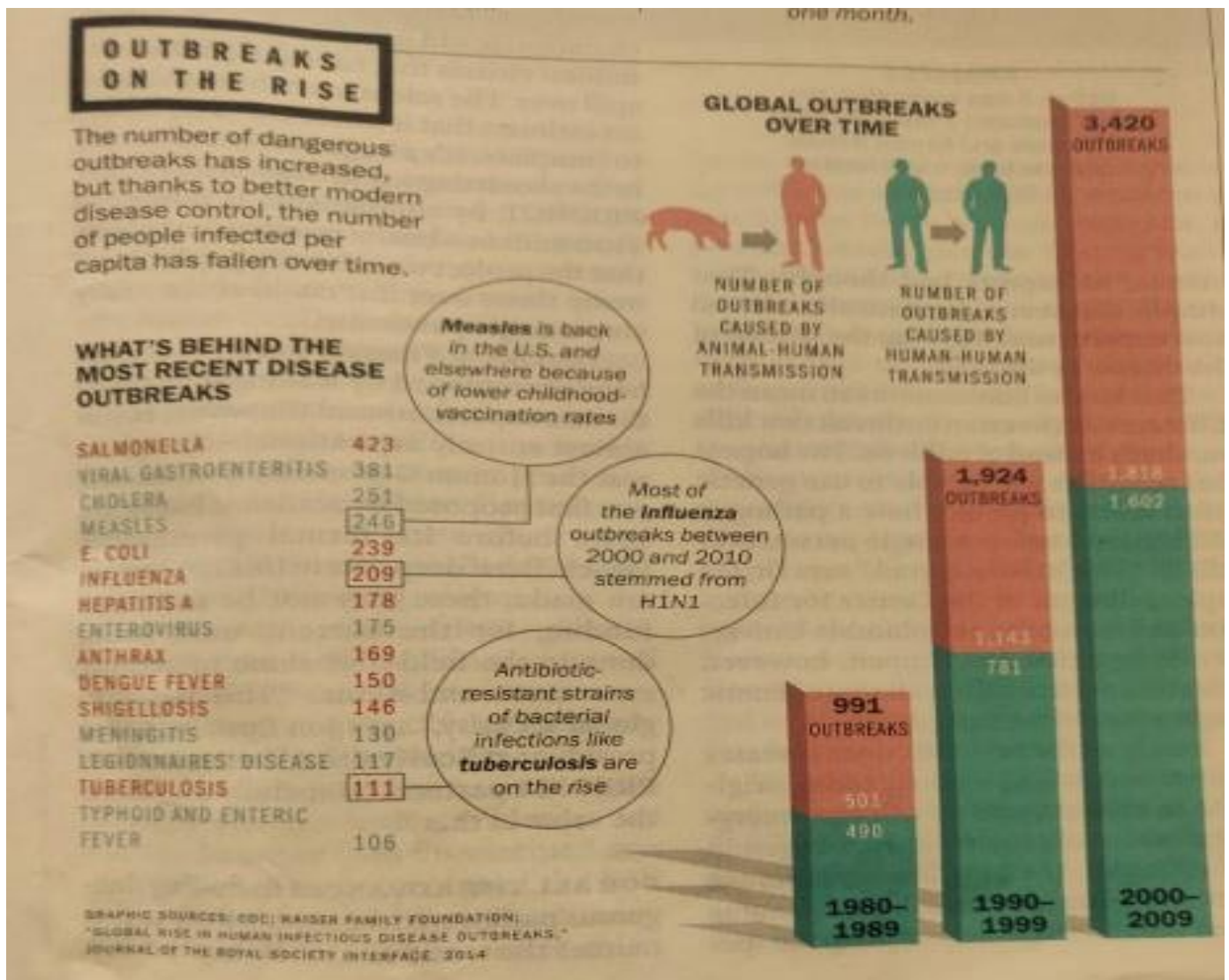
Welcome to the world of Zoonotic Diseases.

Zoonotic Diseases are those that spread from animals to man.

## Increasing Occurrence

From **Ebola** in West Africa to **ZIKA** in South America to **MERS** in Middle East and now **COVID 19** from China, worldwide, Zoonotic diseases see increased prevalence.

They have increased 4-fold in the last 60 years. Since 1974, 28 new infectious diseases have been identified.



# HOW DOES EBOLA SPREAD?




#PreventEbola

unicef   
for every child

Symptoms of ebola include:

- Fever (greater than 101.5°F or 38.6°C)
- Muscle pain and weakness
- Vomiting
- Abdominal (stomach) pain
- Diarrhea
- Unexplained hemorrhage (bleeding or bruising)



Ebola virus

ADAM

## Important characteristics of Zoonotic Disease Virus

- Nearly all zoonotic diseases are caused through infection from virus, bacteria, protozoans and fungi.
- They need a reservoir host to hide and multiply before infecting humans or other species.
- They disappear for long periods and suddenly reappear.
- Jumping from a reservoir host to a new species is just a chance encounter.

### What's a reservoir host?

An animal where a zoonotic virus or bacteria exists, resides for a long time, usually without causing symptoms or death is known as a reservoir host.

### What's this thing about bats?

Bats have been identified as reservoir hosts in most zoonotic diseases known to man. During September 1988 a number of pig farmers in Malaysia came down with fever.

Many died and so did the pigs. Researchers later identified the virus as "Nipah Virus."

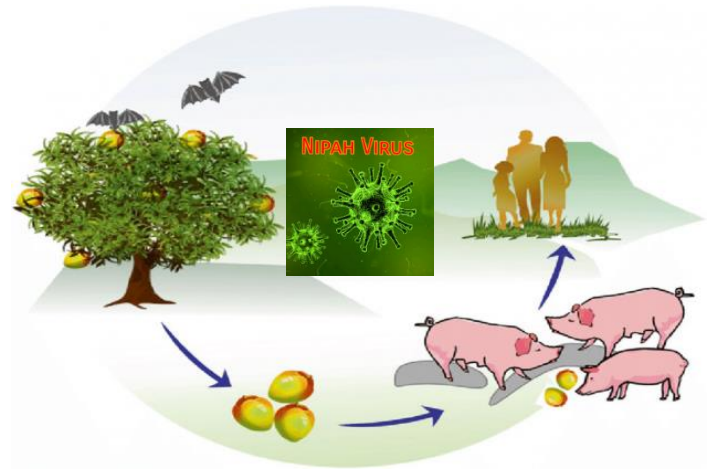
This Nipah Virus was living sedately in a reservoir host *Pteropus hypomelans* a species of fruit bat. These fruit bats were found roosting in a fruit orchard where the pigs were being raised, because their habitats deep inside Malaysian forests faced destruction.

From Ebola to Nipah to SARS to SARS-COV-2 that causes Covid 19, bats are in the radar as reservoir hosts.

Bats are dangerous reservoir hosts because they occupy all the zones of a forest, from the canopy to the forest floor, and that puts them into direct contact with many species.

### What's a spillover?

The process in which a zoonotic virus or bacteria jumps from one species to another is called spillover.



Viruses have no personal locomotion, that is, they cannot move around on their own. A zoonotic virus can have plenty of reservoir hosts. A spillover is an opportunity for the virus to jump, mutate and survive.

### Why are zoonotic diseases difficult to wipe out?

Diseases like small pox could be eradicated because small pox virus could not hide anywhere except humans. Zoonotic viruses can hide for decades before they can spillover and mutate. A pandemic like COVID19 occurs when the zoonotic virus mutates and learns to move from one human to another.

### Why outbreaks occur more frequently now

**Population:** We are 7.5 billion people now; inevitably we encroach on the wild life habitats.

**Deforestation:** The zoonotic viruses reside quietly inside their preferred reservoir hosts for many years as long as their ecosystem is left undisturbed. They infect other species but remain within the forest confines. The moment deforestation occurs and their habitats are encroached upon, spillover to humans occurs.

**Demand for bush meat and exotic meat:** When demand for bush meat (meat of wild animals) like monkeys, civet cat, gorilla, bats etc go up, the spillover to humans is more likely. It is pertinent to note that the recent outbreaks have originated from those regions of the world where humans have been mindlessly consuming bush meat.



**Travel:** Increasingly, humans travel longer distances than any other time in history. A zoonotic virus is just a few hours away for any continent.

**Pets:** Keeping wild animals as pets is a sure shot for zoonosis to occur.

### Are we helpless?

We could be clueless occasionally, but certainly not helpless. One of the most seminal technological breakthroughs in science is the development of **Gene sequencing**. The structure of a virus can be determined in days or hours, for developing therapies that took years earlier.

Some **8 million DNA data base of viruses is available** with Chiu lab California, set up with the collaboration of ABBOTT viral diagnostics. Any new epidemic anywhere, the viral DNA sequence, if available, can be matched against these 8 million DNA data bases in a matter of hours.

This will enable the scientists to determine what this new virus is all about, which will help in therapy development.

**The best defence seems to be past knowledge, quick action, strict adherence to medical protocol, judicious food habits and last but not least respect for our environment.**

#### Do You Know?

**Zika virus (ZIKV)** is spread by day-time active **Aedes** mosquitos, such as **A. aegypti** and **A. albopictus**.

Its name comes from the Zika forest of Uganda, where it was isolated first in 1947.

**MERS-CoV** – Middle East Respiratory Syndrome coronavirus is spread from person to person though respiratory droplet secretions.



## The Great Green Wall of Africa

Smt Archana Sundar



## GROWING A WORLD WONDER

This movement was started in 2007 by the African Union. Roughly 15% underway, the initiative is already bringing life back to Africa's degraded landscapes.

Once complete, it will be the largest living structure on the planet, three times the size of the Great Barrier Reef.

Now being implemented in more than 20 countries across Africa, more than eight billion dollars have been mobilized and pledged for its support. The initiative brings together African countries and international partners, under the leadership of the African Union Commission and Pan-African Agency of the Great Green Wall.

### AIMS

- To restore 100 million hectares of land and make it fertile
- Provide food security for the millions that go hungry every day

- Grow climate resilience in a region where temperatures are rising faster than anywhere else on Earth
- Grow economic opportunities for the world's youngest population and create 10 million jobs
- Grow a new world wonder spanning 8000 km across Africa

### Key Results (2020 data)

Several achievements have been recorded in most of the GGW member states, with some countries being more successful than others.

While some started the implementation of the activities as early as 2008, others joined only in 2014, when the GGW declaration was ratified.

### GROWING MORE THAN TREES

GGW supports an astonishing 15 of the 17 of the 2030 global agenda of the **UN Sustainable Development Goals**.



# 15 GOALS OF THE GREAT GREEN WALL INITIATIVE



**Growing a New World**



**Fertile land**



**Hope Against Poverty**



**Food Security**



**Growing Health**



**Improved Water**



**Gender Equality**



**Sustainable Energy**



**Jobs for Everyone**



**Economic Opportunities**



**Break Migration Chain**



**Rural Development**



**Resilience to  
Climate change**



**Sustainable  
Consumption Pattern**



**Symbol of Inter- Faith  
Harmony & Peace**



Country	GGW Intervention Area (Mha)
Burkino Faso	13.3
Chad	3.0
Djibouti	0.34
Eritrea	12.4
Ethiopia	13.2
Mali	44.4
Mauritania	1.65
Niger	47.3
Nigeria	17.4
Senegal	0.8
Sudan	2.3
<b>TOTAL</b>	<b>156.1</b>



The Great Green Wall isn't just for the SAHEL. It is a global symbol of hope for humanity overcoming its biggest threat – rapidly degrading environment and desertification. It shows that if we can work with nature, even in challenging places like the Sahel, we can overcome adversity and build a better world for generations to come.

Curious to know more watch this: <https://www.youtube.com/watch?v=LQrW8OckLuQ>



### Do You Know?

**SDG - Sustainable Development Goals** are a plan of action to target and resolve the challenges we're facing on the planet. They are not just about the environment, they encompass much more than that, with goals targeting issues such as gender equality, poverty, and peace.

**SAHEL** – Semiarid region of western and north- central Africa extending from Senegal to Sudan; a transitional zone between the deserts to the north and the humid savannahs to the south.



## Israel – Palestine Conflict

**Shri Kaushik**



Following escalating tensions, clashes broke out between Israeli police forces and Palestinian protestors which soon spread to the Al-Aqsa Mosque located in the old city of Jerusalem.

Palestinian protestors had hit the streets in East Jerusalem anticipating a non-favourable verdict from Israel's Supreme Court over the eviction of 6 Palestinian families in **Sheikh Jarrah**.

Sheikh Jarrah is a predominantly Palestinian neighbourhood in East Jerusalem.

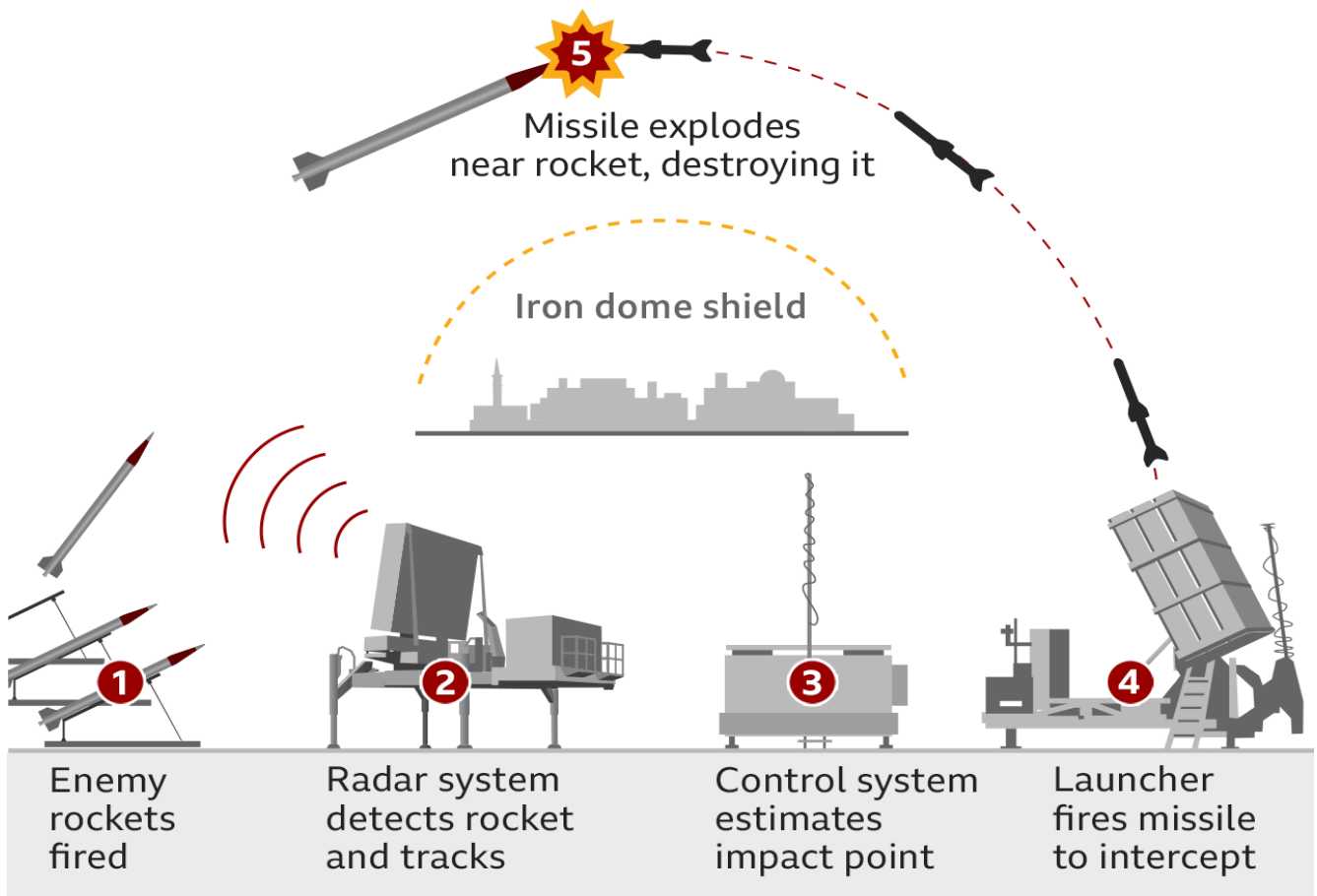
On 10<sup>th</sup> May, Israeli police forces entered the Al-Aqsa Mosque because Palestinians who had congregated for the evening worship threw stock-piled stones at them.

More than 300 Palestinians were wounded. Palestinians threw rocks, firecrackers, and heavy objects, while Israeli police fired stun grenades, tear gas, and rubber bullets at them.

These rockets were countered by Israel's **Iron Dome system**, an air defence system that intercepts missiles/rockets and neutralizes them.

This raid by the Israeli police came ahead of the Jerusalem Day observed to commemorate the reunification of Jerusalem and the establishment of Israeli control over the Old City in the aftermath of the June 1967 Six-Day War, which is seen as Israeli assertion over Palestine.

This was followed by a retaliatory attack by Hamas, a radical Islamist terrorist group where a flurry of rockets was fired at Israel's civilian area from Gaza. Some rockets hit residences and schools too.



How Israel's Iron Dome defence system works

## Why are Israel and Palestine fighting and for what?

### Background of the conflict

The Israel-Palestine conflict is more of a fight for a piece of land than a religious conflict.

It is not theological, meaning, the two religious groups are not fighting about whose God is the true god or which religion is better but rather to

claim ownership for the land which has religious significance for both the groups.

One of the biggest myths of the conflict is that it has been going on for centuries but **the conflict as it manifests today has a very recent history.**

The Jews consider the Israel-Palestine region as their historic homeland (Promised Land) as mentioned in the Hebrew Bible.

The region of Israel-Palestine was under the Ottoman rule for several centuries from the 1500s with the population comprising mostly of Christians and Muslims and a small number of Jews. However, things started changing during the 19<sup>th</sup> century with the demography getting altered. The ethnic Arab population started consolidating themselves under a distinct nationality called Palestinians.

At the same time, more Jews started consolidating themselves behind a movement called Zionism which says that Judaism is not just a religion but a nationality and that Jews ought to have a separate nation of their own.

The Zionist ideology stemmed from the centuries long persecution that Jews have been facing across the world. They saw that achieving a Jewish state at their historic homeland (the Israel-Palestine region as we know today) was the only solution for safety. During the early part of the 20th century, many Jews from across Europe started moving into Israel region.

After the Ottoman Empire collapsed following the 1st World War, the British and French carved West Asia into their territories.

The British took control of the region and called it the **'British Mandate for Palestine'**.

The British allowed Jew immigrants but as more of them started to arrive, tension between Palestinians became frequent and hence the British started limiting Jewish immigrants.

As a result, the Jewish population in the region formed militias and started fighting both the British as well as the Arabs.

However, the Holocaust under Hitler's Germany was a watershed moment when many Jews started fleeing Europe to reach British Palestine.

The world at that time came out in support of a separate Jewish state. Due to increasing influx of Jews, sectarian violence started growing.

In 1947, the United Nations drew up a plan to divide British Palestine into two states – the Jewish state of Israel and an Arab Palestine state as the British could no longer control the sectarian violence.



The city of Jerusalem which is holy to all the three Abrahamic faiths – Jews, Christians and Muslims – was to become a special international zone.

The plan was accepted by the Jews but rejected by the Arabs as they wanted the entire region for themselves.

Israel declared independence in 1948 and it became a country that was completely surrounded by hostile neighbours.

### **The Arab – Israeli War of 1948-49**

Following this, the Arab countries immediately declared war leading to the Arab – Israeli War of 1948-1949.

However, Israel emerged victorious and, in the process, they pushed well past the borders agreed under UN plan and took the western half of Jerusalem.

This had resulted in Palestinians becoming refugees, getting confined to the area of Gaza Strip and West Bank which was under Egypt and Jordan's control respectively. More and more Jews living in Arab countries were expelled and started arriving in Israel.

### **The Six Day War of 1967**

In 1967, the Arab states attacked Israel leading to the Six Day War which was also won by Israel. This time, they seized Golan Heights from Syria, West Bank from Jordan and both Gaza and Sinai Peninsula from Egypt.

For more than a decade the entire region was under Israel's control. However, the US brokered a peace treaty called the Camp David Accord 1978 that resulted in Israel giving back Sinai Peninsula to Egypt. Over the next few decades, many of the Arab states made peace with Israel.

### **The Israel-Palestine conflict**

Israel was in occupation of Gaza Strip and West Bank. In the 1960s, the Palestinian Liberation Organization (PLO) was formed, which sought to establish a Palestinian state covering what was once British Palestine and fought Israel through acts of terrorism.

The PLO wanted to put an end to the state of Israel itself. However, the PLO then accepted to dividing the land between Israel and Palestine.

Over a period of time, Israelis started moving into the territories of Gaza and West Bank and started establishing smaller settlements which were subsidized by Israeli government, which led to further influx of Jews as they needed soldiers and other basic service providers.

This forced Palestinians away from their land. A further divide and conflict between the Israelis and Palestinians resulted.

### ***The Intifadas***

Intifada is the Arabic word for uprising which began in the 1980s. These intifadas were marked by stone pelting incidents, riots and widespread violence. Israel responded with heavy force. **The first intifada was from 1987 to 1993.**

Meanwhile, another organization called Hamas was created to decimate Israel as they considered PLO to be too compromising and 'secular' in approach.

Following the First Intifada, the then Israeli Prime Minister Shimon Peres and Mahmoud Abbas of the PLO signed the Oslo Accord which gave the right of self-determination to Palestinian people, thereby the right to govern parts of the West Bank and Gaza strip.

PLO also recognized the State of Israel and pledged to end terrorism. However, hardliners on both sides opposed the Oslo Accord. Continuous suicide attacks from Palestine by the Hamas and growing settlements resulted in the dilution of Oslo Accord.

Another Camp David Summit mediated by the USA between leaders of Israel and Palestine did not yield results resulting in a more violent **Second Intifada (2000 to 2005).**

Israel used heavy force to counter the violence. After this, both sides grew further sceptical of each other. In 2005, Israel withdrew from Gaza and Hamas came to power but severed its relationship with the Palestinian Authority cutting off Gaza from the West Bank.

In West Bank, due to expanding Israel settlements, frequent protests and occasional violence by Palestinians has become the norm.

On the other hand, the Hamas from Gaza has been carrying out frequent attacks at Israel, sometimes targeting its civilian population with Israel retaliating with its armed forces.

Hamas' terrorist blocks are neutralized and peace remains temporary before another major violence breaks out.

### What is India's position with respect to Israel and Palestine?

India has taken a balanced approach with respect to its relations with Israel and Palestine.

India has supported the Palestinian cause while maintaining good relations with Israel.

India and Israel see each other as natural partners. **When Jews were persecuted wherever they went, India was the only country where Jews were welcomed with open arms and were never persecuted.**

Despite India letting down Israel several times – be it voting against Israel's admission into the United Nations or India's support to PLO or having no full diplomatic relations, Israel had extended unconditional support to India at all times including in times of war with Pakistan.

India and Israel have grown closer and a strong relationship between the two countries has evolved after 2014.

In 2017 Narendra Modi became the first Indian Prime Minister to visit Israel. Since then, the two countries have been cooperating in the fields of agriculture, defence, counter terrorism, space and in other strategic areas.



#### Do You Know?

The **Cochin Jews** were the first to arrive in Kerala around 50 CE. It is believed they moved to India after the first temple was destroyed during the siege of Jerusalem. They were warmly received by **Cheraman Perumal**, the **Chera** ruler.



## Role of IAF in Transporting Oxygen

Smt Shubha T R

As the nation battled medical oxygen shortage amidst the 2nd Corona wave, the government roped in the Indian Air Force on a war footing to airlift Oxygen cylinders, regulators, cryogenic tankers, essential medicines both domestically and internationally.

The IAF immediately deployed 42 transport aircrafts including six each C-17 Globemaster and IL-76 transport planes and 30 medium-lift C-130Js Super Hercules and AN-32 aircrafts, Dornier aircrafts and Helicopters for this mega operation- "**Mission Oxygen**" to enable swift supply of oxygen to different states and UT's.

An infographic titled "INDIAN AIR FORCE MEDICAL TEAMS AT DRDO HOSPITALS". It features a blue header with the Indian Air Force crest. Below the header is a photograph of medical staff in white protective suits and masks working in a hospital setting. Underneath the photo, the text lists "Doctors", "Nursing Officers", and "Medical Assistants". At the bottom, there is another photograph showing medical staff in a different hospital setting, with labels for "Delhi", "Ahmedabad", "Lucknow", and "Bihta" below it.

**INDIAN AIR FORCE**  
**MEDICAL TEAMS AT DRDO HOSPITALS**

**Doctors**  
**Nursing Officers**  
**Medical Assistants**

**Delhi Ahmedabad Lucknow Bihta**



IAF Chief Air Chief Marshall RKS Bhadauria has ordered “24x7 readiness” of its heavy-duty fleet in a Hub & Spoke model for Covid-19 relief duties.

**Why IAF?**

The IAF in its fleet has heavy weight transport aircrafts that have the capacity to carry huge empty tankers (of 10 MT - 20MT) and cylinders and by airlifting these, a lot of precious time can be saved.

**Reasons behind O<sub>2</sub> crisis**

- ➔ Many of the hospitals in the states do not have significant oxygen production capacity of their own.
- ➔ There was a sudden surge in demand for medical oxygen.

➔ Acute deficiency in terms of Supply Chain – cylinders, cryogenic oxygen tankers, transportation etc. aggravated the crisis.

**Updates**

- ➔ IAF medical personnel have been augmented at Covid Hospitals set up by DRDO India, exclusively for civilians at Delhi, Ahmedabad, Bihta and Lucknow.
- ➔ A 100 bed COVID care facility for the general public is operational at Air Force Station Jalahalli, Bengaluru since 6<sup>th</sup> May 21 and is manned by medical personnel from Command Hospital Air Force, Bengaluru. Admissions will be coordinated by BBMP/GoK.



**FIGHT AGAINST COVID-19**  
(Till 0700h, 20 May 21)



**EX-INDIA AIR EFFORT**

AUSTRALIA BELGIUM FRANCE GERMANY INDONESIA ISRAEL KUWAIT NETHERLANDS QATAR SINGAPORE THAILAND UAE UK

INDIAN AIR FORCE			
FIGHT AGAINST COVID 19 ( Till 0800hrs, 09 May)			
INTERNATIONAL		DOMESTIC	
O <sub>2</sub> CONTAINER AIRLIFT	MED EQPT + PERSONNEL	O <sub>2</sub> TANKER AIRLIFT	MED EQPT + PERSONNEL
Sorties			
54	16	435	66
Flying Hours			
~ 242	~ 82	~ 629	~ 114
Total Load (T)			
619 T	134 T	5419 T	145 T
Total Air Miles (Nautical Mile)			
101537 NM	36360 NM	272004 NM	39199 NM
No of Containers / Tankers			
77		316	
Countries			

Australia, Singapore, Indonesia, Thailand, UAE, Israel, France, Germany, UK & Belgium



#HarKaamDeshKeNaam

## IAF in Action: Airlift of Cryogenic Oxygen Containers and Medical Equipment



## Israeli Drones along the LAC with China

**Smt Nandhini S**

The India Armed forces will soon be receiving four HERON II drones from Israel for deployment along the **LAC (Line of Actual Control)** in the Eastern Ladakh and other regions.

This will be a major boost to the surveillance system as they monitor the Chinese activities there.

India and China had witnessed a face-off in June 2020 in the Galwan Valley during which 20 Indian and 35 Chinese soldiers lost their lives.

This was the first armed Indo-China conflict since 1975.

The Indian defence forces have been granted emergency financial powers by the government to



The Indian defence forces have been granted emergency financial powers by the government to buy equipment and systems worth Rs 500 crores to enhance their operational capabilities.

Induction of these drones will keep our borders and nation secure.

### Features

- These **medium-altitude long-endurance** (MALE) drones are manufactured by Israel Aerospace Industries.
- Satellite communication enabled.
- Can fly up to an **altitude of 35,000 feet** and are armed with **antijamming capacity** (they can be used in spite of the enemy's efforts to render them inoperative. Designed not to jam (become stuck).

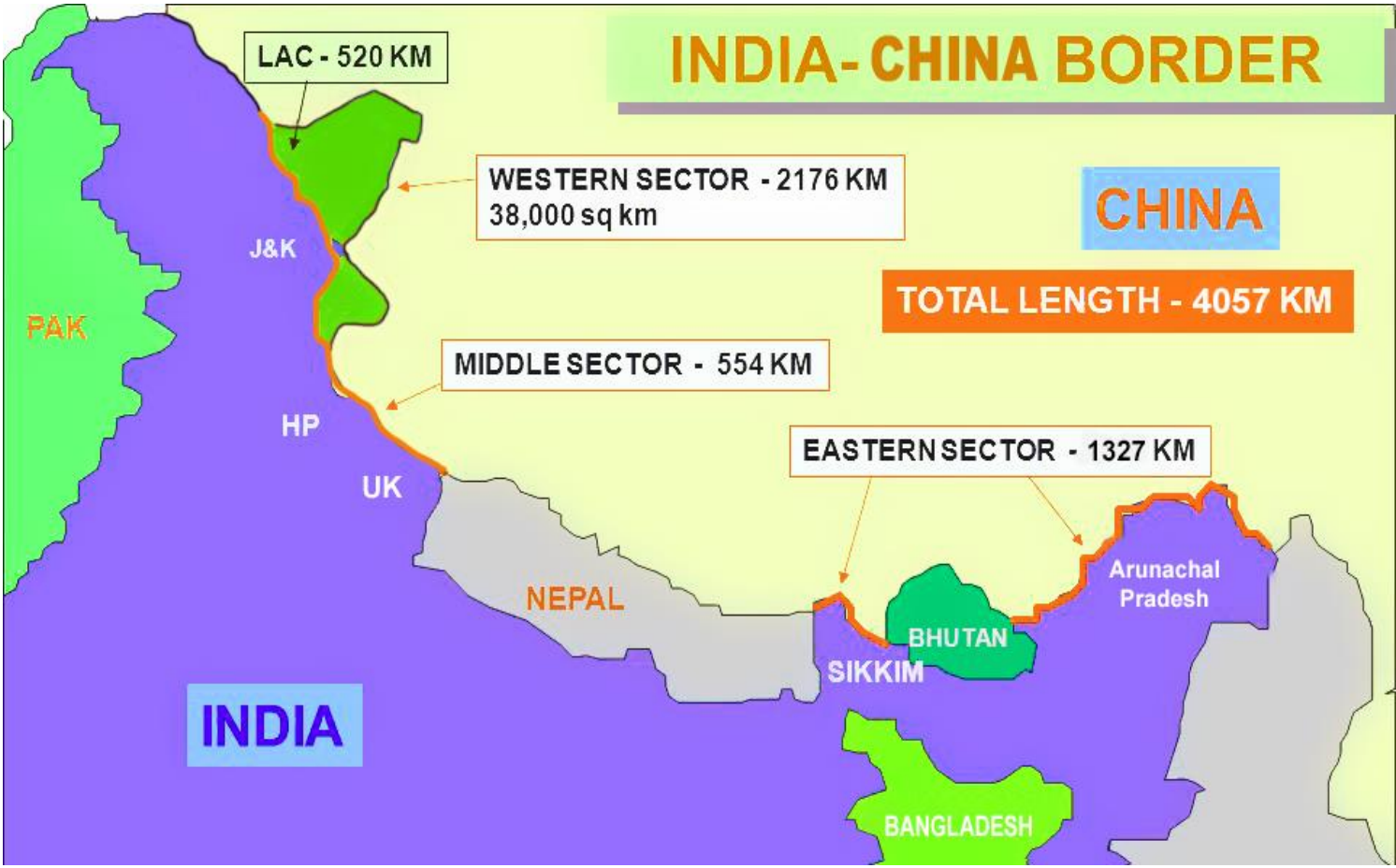
### Do You Know?

**Line of Control (LOC)** is the military control line between the Indian and Pakistani occupied parts - a line which does not constitute a legally recognised international boundary but serves as a border.

**Line of Actual Control** demarcates the Indian from Chinese controlled territories. It is divided into three regions:

- Eastern region in Sikkim and Arunachal Pradesh (1346 km)
- Middle region in Himachal Pradesh, and Uttarakhand (545 km)
- Western region in Ladakh (1597 km)

# INDIA-CHINA BORDER



**CLASHES ALONG THE LAC**

**May 5** Indian and Chinese soldiers clash at Pangong TSO lake.

**May 10** Face-off at the Muguthang Valley in Sikkim.

**May 21** Chinese troops enter into the Galwan River Valley in Ladakh region.

**May 24** Chinese camps at 3 places: Hotspring, P14 and P15.

**June 15** Violent Face-off between Indian and Chinese Soldiers. A Colonel and 19 soldiers martyred from the Indian side while China (PLA) suffered 43 to 49 casualties including a Colonel, killed in the scuffle



# Women Warriors on LOC

Shri Krishnakumar C S

Indians are proud of their legendary women warriors such as Jhansi Rani, Velu Nachiar, Rani Chennamma and so on.

The Indian National Army (INA) led by Netaji had a strong women's regiment led by Captain Lakshmi Sahgal.

Post-independence, inducting women soldiers started in 1992. However, till the recent past, they were assigned only non-combat roles.

In a historic move, the Indian Army has deployed the 'Rifle Women', a unit of Assam Rifles for internal security and combat duties in the Tangdhar sector of north Kashmir near the line of control (LoC) with Pakistan.

These 30 women soldiers are led by **Captain Gursimran Kaur** of the Army Service Corps.

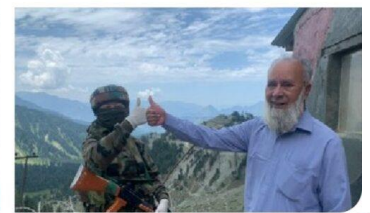
Guarding the border roads, preventing the smuggling of narcotics, fake currency and weapons through the **Sadhana Pass**, crowd control and frisking of women are some of their important duties.



The presence of women soldiers along LOC has strengthened the rapport between the army and the local population.

## Do You Know?

The **Sadhana Pass** is a mountain pass in J&K, connecting Karnah tehsil of Kupwara district with the Kashmir valley.



## BRO's First Woman Commanding Officer

Smt Vaishnavi. V

The Border Roads Organisation (BRO) has appointed a woman officer to command a Road Construction Company (RCC) tasked to provide connectivity in a high-altitude area along the India-China border.

**Vaishali S Hiwase**, from Maharashtra who has an M Tech degree is taking over as Commanding Officer after a successful tenure in the Kargil sector.

She holds the rank of an **Executive Engineer**.



Vaishali will be discharging her duties in a challenging environment located at 10,000 ft and above, where the alignment of road is going through some formidable passes and treacherous terrain of hard rock with vertical cliffs.

“This is a humble beginning by BRO India that will usher a new era of women empowerment that will see women officers taking over most arduous tasks. History in the making,” the BRO said.

### What is BRO?

The Border Roads Organisation functioning under the Ministry of Defence is responsible for infrastructure development and maintenance of the road networks in the border areas of India.

BRO performs two separate functions in the border areas.

#### During Peace

- Constructing and maintaining roads
- Implementing Information Technology in infrastructure projects



- Creating ease of transport, accessibility and connectivity
- Contributing to the social-economic development

#### During War

- Maintaining and developing the roads through the LoC
- Performing any other task assigned by the Government

Apart from this, BRO takes up reconstruction work during natural calamities.

It has also undertaken work in numerous countries contributing towards maintaining friendly and diplomatic relations. For example, Delaram-Zaranj Highway in Afghanistan.

#### Do You Know?

One of the biggest infrastructural achievements of BRO is the construction of the **Atal tunnel** in Himachal Pradesh, the longest highway tunnel (8.8 km stretch, at an altitude of 3000 m).



**How to join BRO :** Candidates selected through the UPSC IES (Indian Engineering Services) are appointed to this organization. For more information visit - [bro.gov.in](http://bro.gov.in)



## Financial Literacy Savings Account for Children

Smt Vanaja Shankar

### Saving Account



Gita and Shravan counted the cash they had saved in their piggy banks.

“I have got three thousand five hundred.” Gita announced.

“I have got only two thousand and three hundred.” Shravan was disappointed.

“That is because you keep breaking your piggy bank to buy some cards and games.” Gita reminded him.

They heard their mother calling them from the kitchen. “Come children, take this tray of fruits and milk to your grandpa.”

Shravan and Gita placed the tray on the table in grandpa’s room. He lifted his eyes from the computer and smiled at them.

Come children, are you ready with your cash to open a bank account? I was just checking the websites of different banks for the special features offered for minor accounts.

### **Savings accounts for minors**

“What are minor accounts”? Gita asked.

#### **Anyone below 18 years is a minor.**

You are all too young to handle huge transactions, so the Reserve Bank of India has come out with some regulations for opening and operating accounts. Banks follow these regulations and create their own special products for children.

Children below 10 can open bank accounts with their parents as guardian. Only the guardian can operate the account.”

“Oh. Can’t we do that by ourselves?” Shravan asked.

Grandpa replied, “You can. RBI says children above 10 can open and operate the bank account by themselves if they can sign consistently.”

They scribbled their names on a notebook.

Grandpa smiled. “Sign a few more times.”

He checked their notebooks. “Shravan, look, your S is in capital in the first line, and you start with a small S in the third.

Your signature must be the same always. That is what is meant by consistency.”

They practised a few more times and showed their signatures to Grandpa.

“Can you take us to the bank, Grandpa?”

### **Opening a Bank account**

Banks need some documents to open a savings account. They call it **KYC – Know your customer**.

An account opening form – with details filled in by you – your name, date of birth, address, parents name etc.

- Your photograph
- Identity proof
- Address proof
- Date of birth proof

“Grandpa, we have our Aadhaar cards.” Shravan was excited.

“Yes, additionally, you can submit your birth certificate for age proof. Banks also require you to submit your father’s / mother’s identity proof.”

Gita was doubtful. “Grandpa, why do they need all these documents? I thought if we go to the bank and give our piggy bank, they will accept our money.”

Grandpa clarified. “Gita, **a bank account is a lifelong relationship**. The bank must know who their customer is.” “The bank must confirm your identity so that no one else can use your account and withdraw money. Banks also want to prevent fraudsters from opening accounts.”

What do you mean by “lifelong relationship”? Shravan wondered.

“I opened a kid account for your mother when she was 10 years old. She has the same account now, for the past twenty-five years. Her bank savings has grown with her.”

“Wow!! Grandpa, how much cash should we give to open an account? I have only 2300.”

Grandpa smiled. “Don’t worry. There are some banks which do not require any minimum balance for Kids accounts.

Different banks have different minimum balance requirements ranging from ₹ 0 to ₹ 5000.”

“Can we put cash in the bank account whenever we like?” Shravan asked.

“A savings account is for depositing small amounts as and when we get some income. For minor accounts, there are some restrictions on maximum amount of deposit in the account (Rupees fifty thousand to rupees one lakh).

You can also withdraw as and when you like. For minor accounts, there could be daily withdrawal limits.

Some banks say you cannot withdraw more than ₹ 1000 per day, others keep a limit of ₹ 2500. This is to ensure that children are careful about spending their money.”

“How can we withdraw the money? Can we have an ATM card?”

“Yes. Banks provide ATM/debit card for your savings account.

Some banks even offer debit card with your photograph printed on it.”

“Wow. I can show it off to my friends.” Shravan clapped his hands.

“You can also access your account through internet banking and mobile banking.”

## Interest

“What is interest Grandpa? How much will the bank pay us?”

“Interest is the compensation that banks pay depositors for investing their money elsewhere.

The interest on savings account by different banks varies from 2.7 % p.a to 6 % p.a. (per annum means per year)”

“Banks calculate interest on the daily balances in the savings account.

Interest is credited (paid) to the account once in three months (March, June, September, December).

If you deposit 2000 rupees on June 1<sup>st</sup>. Banks pay interest on June 30<sup>th</sup>.”

## Calculation of interest (Simple interest formula)

$$\text{Interest} = P * N/365 * R/100$$

$$P = \text{Amount of deposit} = 2000$$

$$N = \text{Number of days} = 30 \text{ days}$$

$$R = \text{rate of interest} = \text{Let us assume } 3 \% \text{ p.a}$$

$$\text{Interest} = 2000 * 30/365 * 3/100 = 4.93 \text{ (approx ₹5)}$$

“Only 5 rupees?” Shravan was disappointed.

“If you do not withdraw this money for one year, you would get sixty rupees. If you add money into your bank account regularly, you will get more interest. This is how you make your money earn more money.”

“The interest rates on fixed deposits and recurring deposits are higher. You will also gain from the power of compounding. We will see this later.

Now, I want you to find out the different savings account features for children offered by different banks. Then we can decide and open a bank account online.

Here are some names you can check:

- *Smart Star*
- *Pehli Udaan*
- *Junior Savings account*
- *Junior SF account*
- *Baroda Champ*
- *Future Stars*
- *Kids Advantage*
- *Power Kids*
- *IOB SB Little star*

Find out which bank is offering which product, what is the interest, what special benefits are offered for children’s accounts.”

### Do You Know?

The Reserve Bank of India is India's central bank and regulatory body under the Ministry of Finance, Government of India. It is responsible for the issue and supply of the Indian rupee and the regulation of the Indian banking system.



# Legal Jurisprudence in India

## WHY IS IT IMPORTANT TO KNOW THE LAW?

As we all know, 'law' is a set of rules which regulates the society and helps in maintaining peace and order. Law is a part of our everyday life and is involved even in basic activities.

For example, when we travel on roads, we follow the law related to traffic and motor vehicles. When we eat at a restaurant, we pay a tax along with the price of the food items and this falls under the law of taxation. In addition to this, law helps us protect our life and our property, while respecting those of others.

Therefore, it is necessary and helpful to learn the fundamentals of different areas of law, to apply in theory and practical life. This series is an attempt to explain the basics of law in an easily understandable format.

However, before diving into modern laws in India, it is essential to know the origin and history of law and justice, beginning from the Vedic times.

## WHY SHOULD WE KNOW OUR ANCIENT LEGAL SYSTEM?

As we all know, Modern India as it stands today was born on 15<sup>th</sup> August 1947 and we gave unto ourselves our Constitution on 26<sup>th</sup> January 1950.

Does this mean that India was non-existent before 1947? The answer is a clear NO.

**India as a nation and civilisation existed much before 1947** and this *punyabhoomi* has had many *Rishis* and *Munis* guiding it.

Lord Rama and Lord Krishna were born in this land and have traversed the length and breadth of this country. In fact, Lord Rama is the role model for an ideal ruler and his rule, *Ramarajya*, is the benchmark for governance even today.

Such exemplary governance had existed in our nation much before Modern India and this was because of a robust system of rules and delivery of justice.

Therefore, we can infer that India has had a rich history of legal jurisprudence and modern laws have been heavily inspired by our ancient culture and civilisation.

This makes it helpful and necessary to gain an idea of the system of law which was followed in ancient India.

## SOURCES OF ANCIENT LAW

Some form of legal system might have been in place even during the pre-Vedic times, but recorded history of law starts with the Vedic period.

The sources of classical Hindu law were:

- **Shrutis**- Rig Veda, Yajur Veda, Sama Veda and Atharva Veda which deal elaborately with dharmic duties, practices and customs.
- **Smrutis**- Dharmashastras authored by Manu, Yagnyavalkya, Narada, Brihaspathi and Katyayana.
- **Ithihasas and Puranas**- Mahabharatha, Ramayana, etc.

## OBJECTIVES OF LIFE UNDER INDIAN CULTURE

The Bharathiya culture has placed four objectives (called *Purusharthas*) before every individual:

- **Dharma** (Moral duties and Divine laws)
- **Artha** (Wealth)
- **Kama** (Everyday wishes and desires)
- **Moksha** (Salvation)

The various shastras laborate upon the respective objectives. All these were considered essential for every human being. *Dharma* is the foundation and the guiding principle for everything.

## EARLY LAW AND MODERN LAW: A COMPARISON

Some of the many instances where there is a parallel between ancient and modern law are:

- Kautilya's **Arthashastra** addresses the rulers, transgressions of law and punishments.

The **Yagnyavalkya Smriti** also deals with *Acharya* (law and rules), *Vyavahara* (procedure) and *Prayaschitta* (punishment or penalty).

Similarly, modern law can also be classified as substantive law, procedural law and penal law, among others.



→ Brihaspathi was the first lawgiver to make a distinction between civil and criminal suits.

In the modern legal system as well, there is a clear distinction between civil and criminal cases.

→ **Katyayana Smruti** was the first document to define *Stridhana* to lay down woman's power of disposal.

Today, the laws regarding land, inheritance and marriage, acknowledge these practices.

This in brief is how the law evolved in India with *Dharma* as the fundamental principle based on which the legal system was built.

This can be understood from the phrase "***Dharmo Rakshati Rakshitah,***" which means **'Those who protect Dharma are protected by Dharma.'**

Law in modern India consists of several branches, including constitutional law, civil law, criminal law, company law, international law and environmental law.

Now that we have a basic knowledge of the origin of law in India, we shall proceed to discuss the basics of each branch of law, beginning with constitutional law in the upcoming parts of this series.

### Do You Know?



The logo of the Indian Supreme Court has the slogan "***Yatho Dharmas thatho Jayaha***" which means **'Where there is Dharma, there is victory.'**

### Do You Know?

#### SAMSKRT TERMS

**Punyabhoomi:**

Sacred land

**Shruti:**

That which has been heard

**Smruti:**

That which has been remembered

**Ithihasa:**

Commonly translated as epic but actually means "Ithi Ha Asa" (It happened thus)

**Purana:**

Ancient; Indian literature pertaining to various topics

**Stridhana:**

Wealth received by and belonging to a woman and completely at her disposal

#### LEGAL TERMS

**Jurisprudence:**

Theoretical study of law and justice

**Substantive law:**

The body of law that governs the legal relationships and conduct of people

**Procedural law:**

The body of law that describes the procedure to be followed in administering the rules

**Civil case:**

(Usually) A case between two individuals, when one of them fails to carry out a legal duty towards the other

**Criminal case:**

A case where a person is accused of a crime, usually by the State.

### Do You Know?

The ***Mahabharatha*** helped evolve **procedural law**, while the ***Ramayana*** focused on **legal principles**.



Elections are a routine and normal feature of democracy and they keep happening periodically. The recent elections to legislative assemblies of Assam, Kerala, Puducherry, Tamil Nadu and West Bengal were held between 27<sup>th</sup> March and 29<sup>th</sup> April, 2021 and the results declared on 2<sup>nd</sup> May.

While they were held in a single phase in Kerala, Puducherry and Tamil Nadu, Assam had three phases and West Bengal, eight. The fact that the elections in WB had to be held in eight phases tells us something about the culture of political violence in that state.

Critics attributed motives to the Election Commission (EC) and the Central Government for the decision regarding eight phases.

However, as we all know, that was still the goriest in this round of elections, proving the EC's assessment right. The worst was yet to come.

On 2<sup>nd</sup> May 2021, soon after the results started trickling in, another bout of violence erupted in West Bengal. WB has had, unfortunately, a tradition of political violence and killings since the 1940s. (Direct Action Day of the Muslim League).

In the 1960s and 70s, with the Naxalbari movement gaining traction, the politics of violence continued. The Communist Party of India (Marxist), which rode to power in 1977 and ruled on till 2011 - 34 long years - also could not do much to stop the culture of violence.

It is really sad that the land of Swami Ramakrishna Paramahansa, Sarada Devi, Swami Vivekananda, Aurobindo, Rabindranath Tagore, Netaji Subhash Chandra Bose and Bankim Chandra Chatterjee has been pushed into this abyss by the political parties.

In 2011, Mamata Banerjee's All India Trinamool Congress (TMC) trounced the Left Front convincingly and she became the Chief Minister. She was seen as the icon of the fight against the politics of violence and murder that was prevalent. Of course, in that fight, many TMC cadre had lost their lives.

But the new dispensation could not stem the rot. In the recent Panchayat elections that were held in 2018, about 35% of the TMC candidates won unopposed. There was unprecedented violence prior to the filing of nominations.



The recent violence in WB also reinforces that bitter truth. The districts of North and South 24 Parganas, East Burdwan, Cooch Behar, Birbhum and Hooghly witnessed widespread savagery, targeted against political opponents.

People were killed, thousands of houses destroyed, hundreds of shops looted. The WB government has pegged the number of those killed at 16, neutral observers estimate it to be much higher. The Sonachura Panchayat of Nandigram, the constituency where Ms. Mamata lost to her erstwhile lieutenant, also witnessed terrible brutality.

As we all know, **violence begets violence**. Every party accuses the other for the mayhem. While the violence was retaliatory to start with, it was a free for all thereafter and the violence continued unabated till 9<sup>th</sup> May, post which it ceased. Many people fled to neighbouring Assam. This should shake the conscience of all right-thinking people in this country.

Have we reduced the number of deaths and exodus to a mere statistic? And what is worse, the mainstream media did not accord this the coverage it deserved.

The National Human Rights Commission (NHRC), the West Bengal Human Rights Commission, National Commission for Women and the National Commission for SC/STs, have all received various complaints and are in the fact-finding mode currently.

There are pleas in the High court of Kolkata and the Supreme Court seeking an SIT/CBI probe into the violence. Hopefully the courts and these agencies will do their job well and ensure justice to the victims.

## Violence has no place in a civilized world.

Governments, political parties, the media and civil society- all have to play their roles to stop this madness. There was a lot of violence even in the run-up to the elections. Both the TMC and the BJP have to own moral responsibility for the pre-poll violence.

The animosities between the two parties ran high, fuelled by the high-octane campaign by the TMC leaders and the Central ministers. Added to this was the enmity on account of the BJP co-opting defectors from the TMC on a large scale.

While the politics of violence and murder in itself is despicable, what is more despicable is the polarization in the polity which has been exposed once again. The Indian polity has become so polarized on ideological, political and other considerations, that we are not able to hear many sane voices.

The WB political ecosystem at the grass roots level is such that people have to align with some political party or the other for their safety.

The common citizens do not feel they will be able to do much given the interplay of money power, muscle power and vested interests and have withdrawn completely. This is very dangerous for the society and the situation has to be corrected immediately.

**Only a strong civil society can accomplish this.** All of us can contribute to this effort in our own ways. It is not necessary for us to be aligned to any ideology or political party.

**There are issues concerning the nation that are far too serious and important to be left to political parties and governments alone.**

We should make our voices heard on various issues and **start participating in a lot of constructive community related activities.**

We should also **call out people, agencies and institutions that are supposed to be neutral but are not.** People should put pressure on the political parties and extract assurances against violence and corruption. **Public participation is the key.**

The change, though difficult, must certainly be ushered in.

### Do You Know?

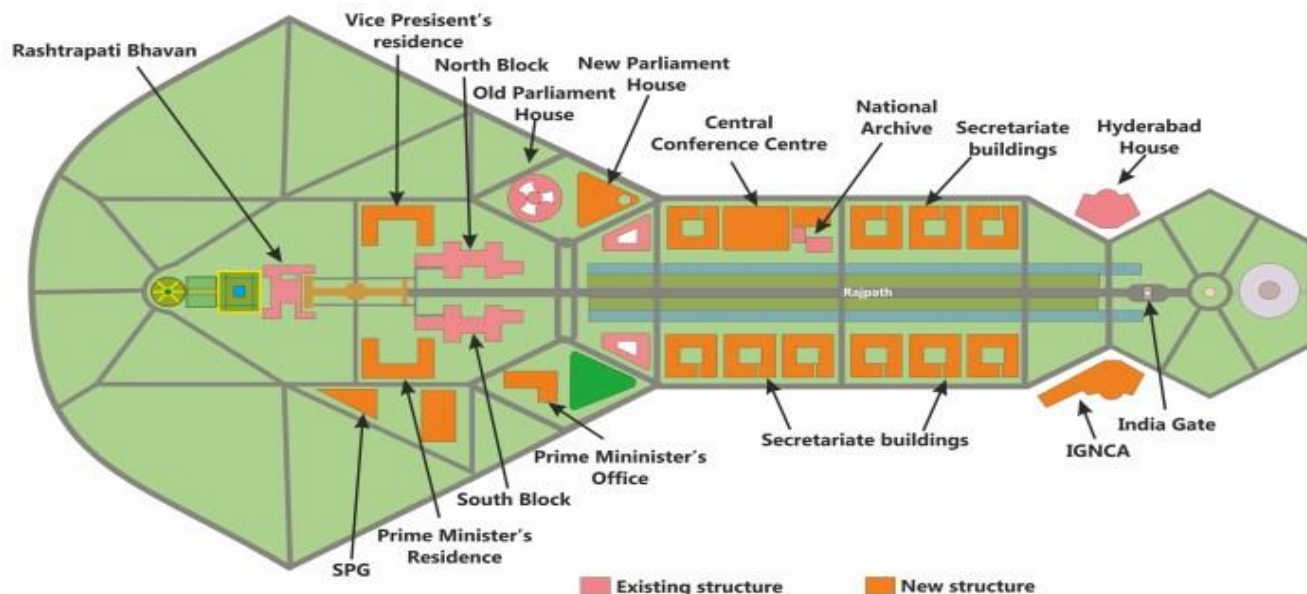
**Direct Action Day (16.8.46)** – also known as the 1946 Calcutta Killings, was a day of nationwide protest by the Indian Muslim community announced by Jinnah. It led to large scale violence between Muslims and Hindus in Calcutta, killing about 4000 people. It resulted in the partition of Bengal.



## Central Vista Project

**Smt Shubha T R**

The Central Vista is a re-development project which entails building and refurbishing the government buildings on the 3-km Rajpath stretching from Rashtrapati Bhavan to the iconic War Memorial, India Gate.



## Purpose

- The need for renovation of outdated infrastructure.
- Inadequate seating capacity in the existing Parliament House.
- The demand for a common Central Secretariat with all the government offices under one building thereby improving administrative efficiency and save on huge rents currently being paid.

## Proposed Features

- A new triangular-shaped Parliamentary building spread over 64,500 sq m to house 1224 MPs.
- Large Defence Enclave to house top defence officials.
- 87- storey building to accommodate various ministries, a common Secretariat, large park.
- Reconstruction of PM, VP residences and PMO.
- Bigger Lok Sabha and Rajya Sabha with a seating capacity of 888 MPs and 384 MPs respectively and a grand Constitution Hall.
- Eco-friendly construction - rainwater harvesting, solar power generation.

- Technology - every seat with multimedia display, smart displays and bio-metrics to make voting easier in Lok Sabha and Rajya Sabha.
- Earth-quake proof.
- Peacock, lotus and banyan motifs for interiors
- Galleries for general public to witness parliamentary proceedings.



**THE NEW PARLIAMENT**

To be built by Tata Projects Ltd.

Designed by HCP Design, Planning and Management Pvt Ltd.

Construction time: Approx 21 months (estimate)

How tall: The building will have four floors

Total cost ₹ 971 crore (estimate)



## Be Mindful -Mucor Mycosis

In May 2021, on the advice of the Government of India, many states declared **MUCORMYCOSIS** or **Black Fungus** as a notifiable disease under the Epidemic Diseases Act.

### Cause

**MUCORMYCOSIS** is caused by a fungus **Mucormyete**, a microscopic organism found in the air, rotting leaves, soil etc.

This fungus isn't really new but has the spot light turned on it.

There are many such fungi present in the air, all around us like Candida and Aspergillus.

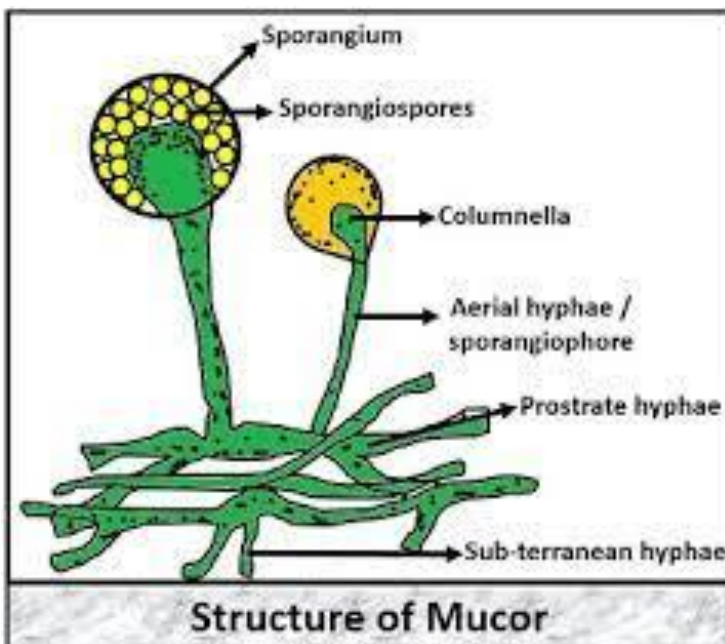
### Which part of the body does it affect?

#### It affects:

- central nervous system (brain and spinal cord)
- sinuses (connected system of hollow cavities in the skull)

Smt Nandhini S

- lungs
- eyes



## Whom does it affect?

- People with poor immunity. This explains why it is seen mostly on post COVID 19 cases.
  - Indiscriminate or irrational use of steroids.
  - People with high blood sugar.
- **People with natural immunity are generally safe.**
- **Unlike COVID – 19, this does not spread from one person to another.**

## Signs And Symptoms

- Continuous unilateral headache (one sided)
- Unilateral nasal obstruction (blocked nose on one side)
- Blood-stained nasal discharge
- Redness of the eyes
- Pain in the upper jaw and around the eye
- Internal oral swelling
- Loss of sensation in the cheek area
- Blurred vision

### Do You Know?

The multi colored mushrooms and toadstools are also fungi. While some mushrooms are edible, toadstools are usually poisonous.



→ **These symptoms may worsen within hours!!!**

## Why the name black fungus?

Typically, the area affected by this fungus suffers loss of blood supply, resulting in black eschar (dead tissue).

## Treatment

Treatment with antifungal drugs like **LIPOSIMAL AMPHOTERICIN**

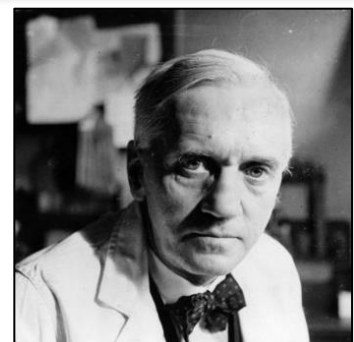
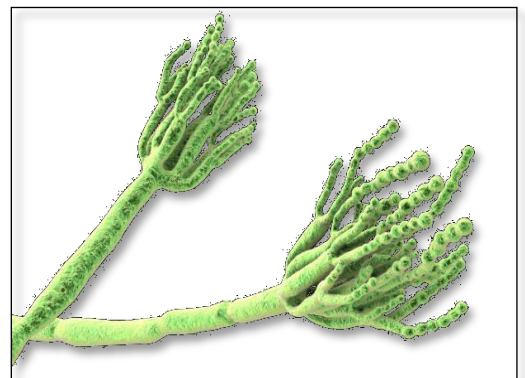
### Do You Know?

A **notifiable disease** means that once a patient is diagnosed with it, the hospital has to inform the state government and the health officials.

Fungi play an important role as **DECOMPOSERS** in the ecosystem around us. They break down the dead organic remains of plants and animals and recycle the nutrients back into the ecosystem.

### Do You Know?

The first antibiotic **Penicillin** was accidentally discovered in 1929 by **Sir Alexander Fleming** from the fungus **Penicillium notatum**.



# Cyclones - Tauktae and Yaas

Shri Pratik Kanodia

Over 11.7 lakh people affected, over 2.5 lakh evacuated, 56,000+ houses damaged—Cyclone Tauktae left a trail of destruction behind; for many, the setback was irreversible.

Cyclone Tauktae, followed by cyclone Yaas, are such disasters—masses knew these were coming, but could never fully feel how deadly the simple combination of rain and wind can prove.

Tauktae, which made landfall near Una in Gujarat, severely affected other states like Kerala, Karnataka, and Maharashtra.

Yaas on the other hand hit the Eastern coast, causing widespread destruction in Odisha and West Bengal.

## Impact

Cyclone Tauktae took 169 lives and hundreds had to be rescued. The deaths were caused by incidents such as trees/electric poles falling over people, drowning in sea, and capsizing boats. Around 6,000 villages were affected, some being completely submerged in water.

Karnataka and Goa experienced severe damage in their coastal areas.

The video of a tugboat stuck in the cyclone was uploaded on the internet, giving people a sense of what being in the middle of the storm was like—a quest for survival, down to the last breath.

Some people on the tugboat were rescued, while most never made it back home.

Cyclone Yaas took far fewer lives but destroyed many more livelihoods—4,500 villages were affected in West Bengal alone, *thousands* of which lay completely submerged.

Powerlines were knocked down, leading to extremely long power outages in areas.

**Odisha, which has India's best disaster response mechanism in place**, was successful in saving most lives. Bangladesh witnessed large scale destruction, and Jharkhand and Bihar lost large swathes of farmlands, leaving farmers in distress.



## Rescue Ops and Aftermath

As the MET department tracked and released continuous updates on both these cyclones, the respective state administrations, along with Union forces (except for Odisha, which managed it mostly internally), tackled the challenge.

The PM held review meetings prior to landfall to check preparedness. Kerala banned all fishing activities in the state and nine teams of National Disaster Response Force (NDRF) were dispatched to strategic locations.

COVID patients were evacuated to special treatment centres, and medical supplies along with extra oxygen was arranged. Vaccine drives were temporarily suspended.

In Gujarat, 54 teams of NDRF and SDRF were deployed. In total, the NDRF deployed more than 4,700 people over six states during cyclone Tauktae.

Airports suspended operations in Mumbai and Lakshadweep, and over-the-sea bridges were temporarily closed in some parts. Mobile ICU vans were arranged for and placed on standby.

## Barge P-305 and Tugboat Varapradha

**If not for the Indian Navy and Indian Coast Guard, the loss would have been worse.**

Barge P305, which sank in the Arabian sea, had 261 people on board working in the ONGC oil rig, 70kms off Mumbai's coast. As Tauktae tore across the sea, the barge collided with the oil rig and began to sink.

In a Search and Rescue (SAR) operation, Indian Naval Forces rescued 188 people and recovered 37 bodies. With visibility set to nil, getting airborne was close to impossible. The barge was found on the seabed later.

Tugboat Varapradha, with 13 members onboard, sent out a **distress flare** when the weather got worse. The flare was, luckily, spotted by INS Kolkata and a SAR was initiated.

*Only two members made it out alive.* The tugboat was attached to the GAL Constructor barge, onboard which all were rescued.

An enquiry has been set up to investigate how these vessels came to be stuck at sea. INS Kochi, INS Kolkata, INS Beas, INS Betwa, INS Teg, P8I maritime surveillance aircraft, Chetak and Sea King helicopters of the Indian Navy were involved in the search and rescue operations.

## Conclusion

While Odisha has proven, on many occasions, what an effective disaster response mechanism can do for its people, West Bengal has made a tragic spectacle out of the last two cyclones (Amphan and Yaas).

The lives lost in Maharashtra were clearly avoidable, and Indian states need to do more to put in place a disaster response mechanism that actually works. Odisha's investments in this regard have paid off, with the UN recently acknowledging the efforts as praised by Mami Mizutori, the chief of UNDRR (UN office for Disaster Risk Reduction).

Odisha's death toll (3) during Yaas was significantly low. It also declined monetary relief from the union government, citing those funds can be used for other utilities of national importance.

The time to act is now—scientists say Indian monsoons will only get more chaotic owing to climate change and global warming.

### Do You Know?

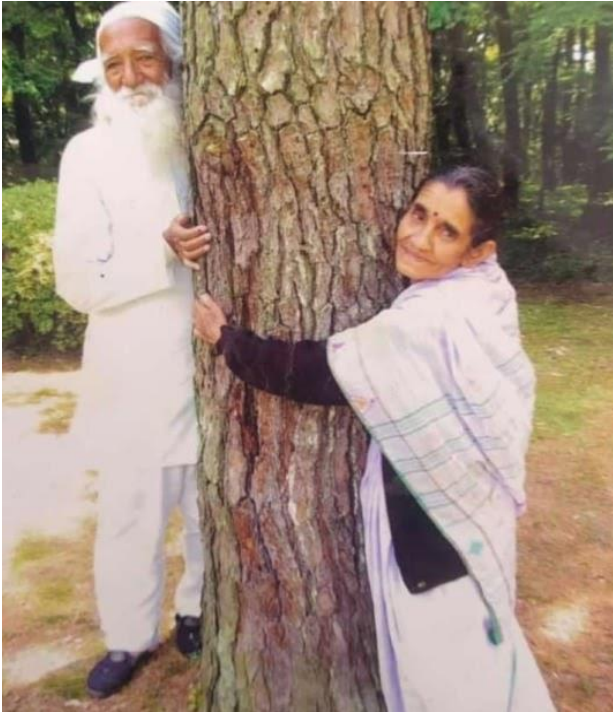
**Barges** are long flat-bottomed boats for carrying goods on canals and rivers, either under their own power or towed by another. The P-305 was a 'dumb-boat', meaning it had no power of its own and needed to be towed by another boat.

A **tugboat** is a small, powerful boat used for towing larger boats and ships, especially in harbour.

**Flare signal:** A flare, also called **fusee** produces bright light without an explosion, used for distress signalling, illumination or defensive counter measures in civilian and military applications.

As per data, Tauktae was an **Extremely Severe Cyclonic Storm**, while Yaas was a **Very Severe Cyclonic Storm**





Our nation suffered a monumental loss in the passing on of S.L. Bahuguna (1927 – 2021) who succumbed to COVID 19.

Affectionately called “*Guard of the Himalayas*”, “*Gentle Warrior*”, Sunderlal Bahuguna was born in Maroda village near Tehri, Uttarakhand.

From a very young age he saw himself as a guardian of the Himalayas and firmly believed that the wellbeing of the Himalayas was important not just for Uttarakhand but the country too.

He accentuated repeatedly that the future of the villagers depended on the forests.

He advocated that no developmental process can be divorced from environmental protection, as both are mutually inclusive.

**CHIPKO MOVEMENT**, a forest conservation movement spearheaded by Bahuguna originated in the hilly parts of Uttar Pradesh in 1973 and quickly spread throughout the Indian Himalayas.

The Hindi word *chipko* means “to hug” or “to cling to” and reflects the demonstrators’ primary tactic of embracing the trees to prevent the loggers from cutting the trees.

He also played an important role against the Tehri Dam construction by undertaking a fast for 45 days in May 1995. Protests triggered by Bahuguna were driven by lofty ideals and a genuine love for the land. All through his life’s journey he used them to highlight that “**the fast was not a hunger strike, but an act of devotion.**”

He said, “Here you believe that there is God inside everybody. And so, you pray to the God to awaken the God inside him to make him realize that he is making a mistake.”

In his death, we have truly lost a son of the soil who embodied the dharmic values of this great nation.



## 4600 km New Highways in 2021-22

Kum Priyadarshini S

NHAI has set an ambitious target to build new highways with a combined length of 4,600 km for the current fiscal year 2021-22 in complete reliance of EPC and HAM projects, undeterred by prevailing pandemic-induced labour shortage in some sites. The authority has a robust stream of funds through budgetary outlays and BOT route.

“NHAI is optimistic that, it could achieve awards more than construction target but that is being finalised”, said NHAI Chairman S S Sandhu.

### Capital cost of the projects awarded for the year:

2021-22	Rs 2,25,000 crore
2020-21	Rs 1,71,226 crore
2019-20	Rs 81,324 crore
2018-19	Rs 64,009 crore

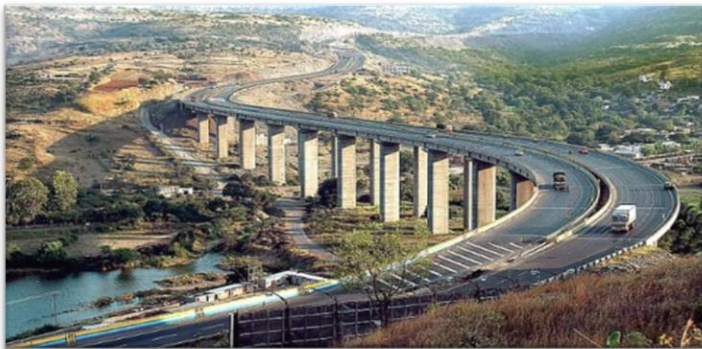




141 projects  
(2020-21)  
Length 4788 km

No. of projects	Model	Kmts covered
2	BOT	132 km
69	HAM	2609 km
70	EPC	2047 km

NHAI awarded 141 projects for a length of 4,788 km in 2020-21, the highest in the last three years. NHAI hopes to award projects worth around Rs 2.25 lakh crore for FY21. The Ministry of Road Transport and Highways is confident that the construction would touch up to 40 km per day in FY21.



### Do You Know?

**BOT (Build -Operate- Transfer):** A private sector unit invest money, builds an infrastructure project, operates it and eventually transfers ownership to the government.

**EPC: Engineering, Procurement Construction** is a business model where responsibility of an infrastructure project is given to a single company which makes the whole plan, procures the material and constructs the whole project.

**HAM (Hybrid Annuity Model):** A mix of the EPC and BOT models. The government contributes 40% of the project cost in the first five years through annual payments.



## Super Blood Moon 2021

Smt Nandhini S

### Lunar Eclipse -26<sup>th</sup> May 2021

The sky gazers were in for a celestial treat as they got to watch the first total lunar eclipse in two years.

#### What is special?

During this eclipse, the moon was at the closest point to the earth in its orbit, making it appear larger than usual and hence the name **SUPER MOON**.

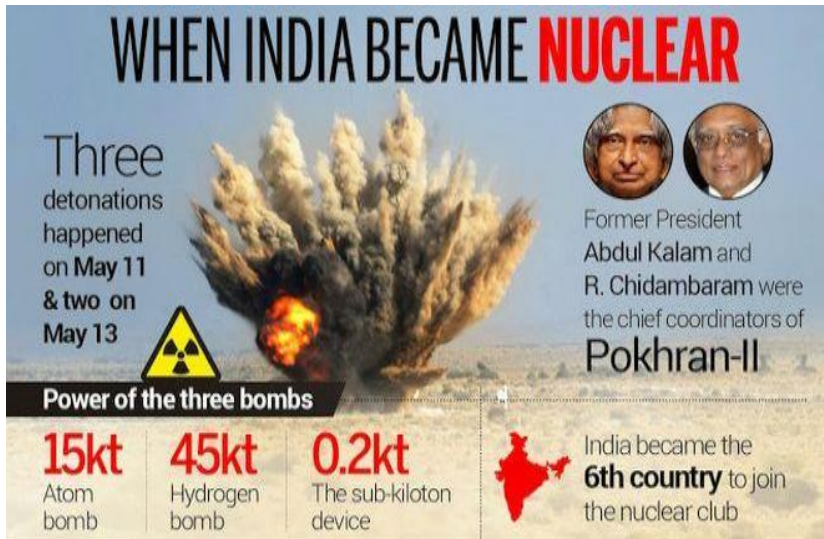
The reddish hue justified the moniker **BLOOD MOON**.



This happens when the sunlight bends and scatters as it passes through Earth's atmosphere before hitting the moon's surface, lighting up the moon in shades of orange or red.

The more dust there is in Earth's atmosphere, the redder the moon appears.





11<sup>th</sup> May 2021 marked the 22<sup>nd</sup> anniversary of the *Pokhran – II* weapons tests which were a series of nuclear bomb test explosions conducted beginning on this day in 1998 at the Pokhran Test Range in Jaisalmer, Rajasthan.

Codenamed **Operation Shakthi**, and headed by Dr. A.P.J Abdul Kalam and Dr. R Chidambaram, the tests were designed to demonstrate that India has the capability to build thermonuclear weapons with yields of up to 200 kilotons.

On 11<sup>th</sup> May 1998, one fusion bomb and two fission bombs were detonated. On the 13<sup>th</sup> May 1998, the remaining two fission bombs were also set off.

Upon the successful completion of the tests, Prime Minister Atal Bihari Vajpayee stated "India is now a nuclear weapons state. We have the capacity for a big bomb now. Ours will **never be weapons of aggression.**"

Following the tests, the Indian Government declared 11<sup>th</sup> May as **National Technology Day**. This is celebrated by awarding individuals and industries in the field of science and technology.

The *Pokhran – II* tests demonstrated not only India's nuclear capabilities, but also highlighted the technological advancements thanks to some of India's brightest minds.

### Do You Know?

Dr. A.P.J Abdul Kalam, four years after serving as the chief coordinator for the Pokhran – II tests, became the 11<sup>th</sup> President of India. He was instrumental in the development of the PSLV (Polar Satellite Launch Vehicle) rocket and also headed the series of tests that came before *Pokhran – II*.

### Do You Know?

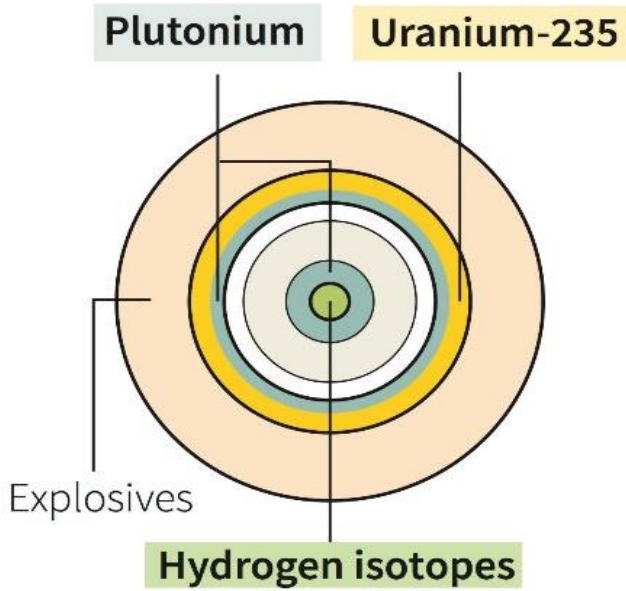
**Dr. Rajagopala Chidambaram** is an Indian Physicist, best known for the integral role he played in the development of India's nuclear weapons programme.

He served as the Chairman of the **Bhabha Atomic Research Centre (BARC)** and later became the principal scientific advisor to the Government of India.

Because of his expertise and involvement in **Pokhran – I**, he was made the chief coordinator of the **Pokhran - II** tests alongside Dr. A.P.J Abdul Kalam.

He received the **Padma Vibhushan** (1999) among many other awards and accolades. He is a Fellow of all the science academies in India and the Third World Academy of Sciences (TWAS), Trieste, Italy.

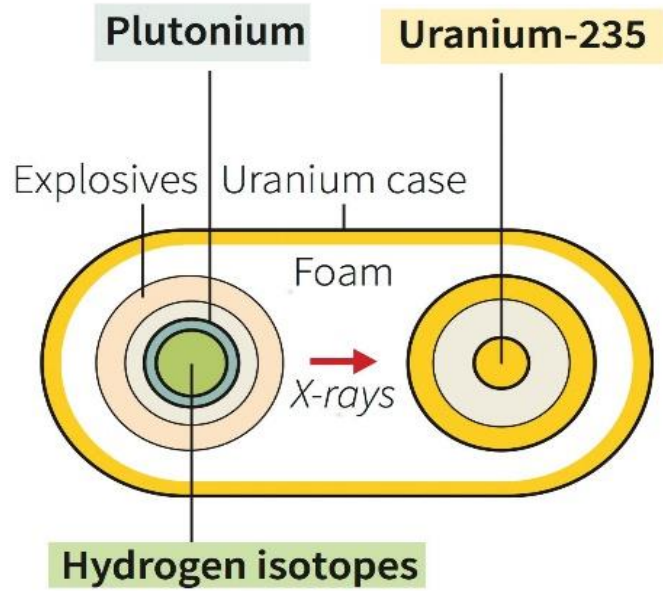




### Boosted fission

Hydrogen isotopes are incorporated in the fissile core to create a high pressure and temperature environment, accelerating fission.

### HYDROGEN BOMB



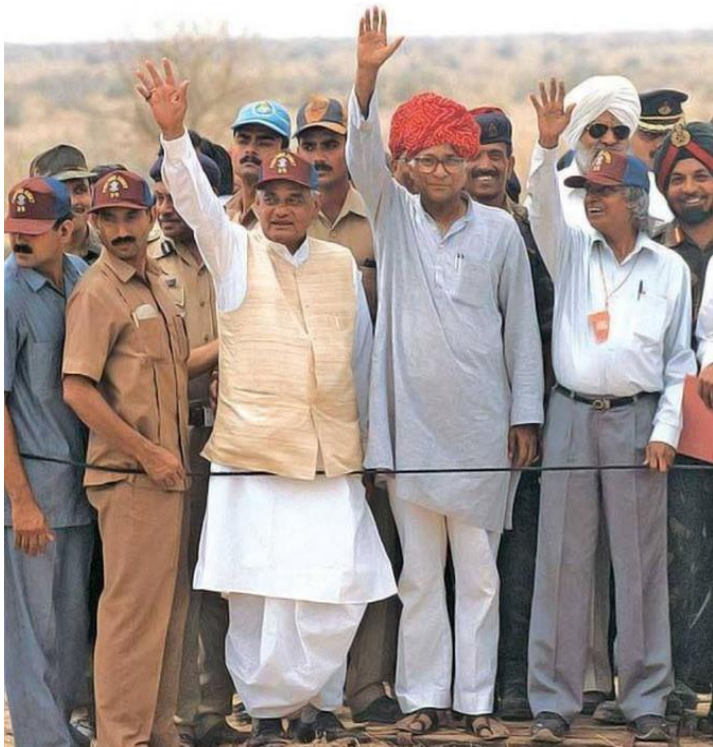
Primary stage

Secondary stage

### Thermonuclear

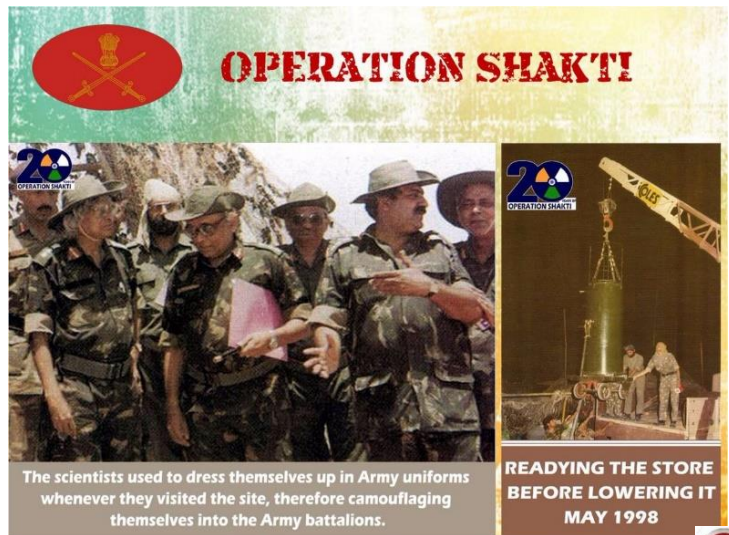
A primary component is detonated which triggers a secondary fusion explosion in the bomb or warhead.

Fission Bomb (Nuclear Fission Principle)	Fusion Bomb (Nuclear Fusion Principle)
In a nuclear fission reaction, isotopes of uranium and plutonium are bombarded with neutrons. Through this bombardment the uranium and plutonium atoms will split, leading to formation of lighter atoms.	In a nuclear fusion reaction two or more atomic nuclei of lighter elements such as hydrogen are combined to produce atoms of heavier elements. This process of combination releases high amounts of energy alongside the newly formed atoms.
It is the energy released during the split of the atom that results in a massive explosion when a fission bomb is detonated.	The energy released during this process is what results in the explosion that a fusion bomb produces. Because fusion requires immense amounts of energy, all fusion bombs have two steps. The fission step then triggers the fusion step. The explosions produced are far more powerful than ones produced by fission bombs.
These bombs are commonly referred to as nuclear weapons or nukes.	These bombs are commonly called Hydrogen bombs or H-bombs.



Shri Atal Bihari Vajpayee, Shri George Fernandes and Dr APJ Abdul Kalam at Pokran after Operation Shakti

The Nuclear Club	
Country	Date of First Test
United States	16 July 1945 (Trinity)
Russia	29 August 1949 (RDS-1)
United Kingdom	3 October 1952 (Hurricane)
France	13 February 1960 (Gerboise Bleue)
China	16 October 1964 (596)
India	18 May 1974 (Smiling Buddha)
Pakistan	28 May 1998 (Chagai-1)
North Korea	9 October 2006.



## Mobile Connectivity for the First Time

**Smt Ramamani**

Villages on the zero line (outermost parts) of the country are called zero border villages. Two such - **Merak and Khakted**, located on the southern side of Ladakh in the **Indo-China** borders got internet connectivity for the first time.

During these technology-driven days, we cannot visualize even an hour without network connectivity. But these villagers had to wait for decades to get connected.

The Indian Army laid the **Optical Fibre Cable (OFC)** under **Operation Sadbhavana** recently to accomplish the much-awaited dream.



### States with the highest percentage of villages without mobile connectivity (2020)

State/UT	Number of villages (census 2011)	Number of villages with mobile connectivity	No. of uncovered villages	% of villages without mobile connectivity
Arunachal Pradesh	5258	3035	2223	42
Andaman & Nicobar Islands	396	245	151	38
Mizoram	704	498	206	29
Ladakh	236	172	64	27
Meghalaya	6459	4785	1674	26

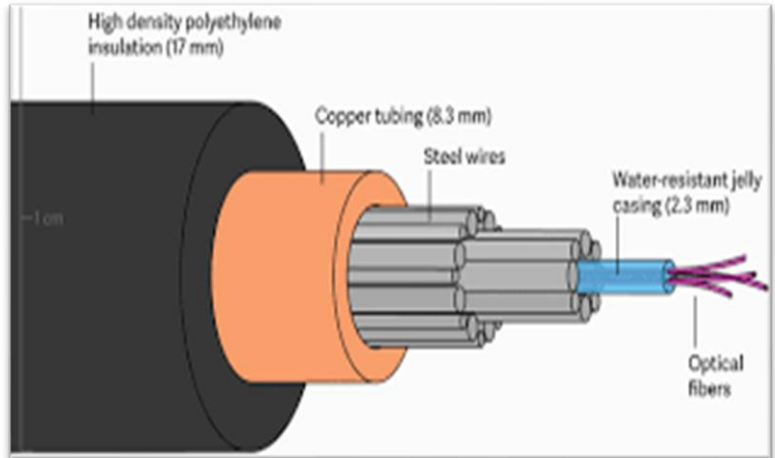


**Do You Know?**

**OPTICAL FIBER CABLE** is an assembly similar to an electrical cable used for long-distance telecommunication or providing a high-speed data connection. The optical fiber elements are coated with plastic layers and contained in a protective tube.

Villages in India – **6,00,000** (approx.)

Villages without mobile connectivity – **25,000** (approx.)

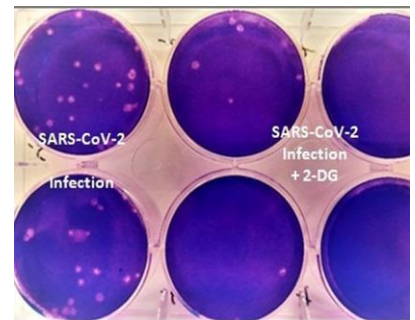
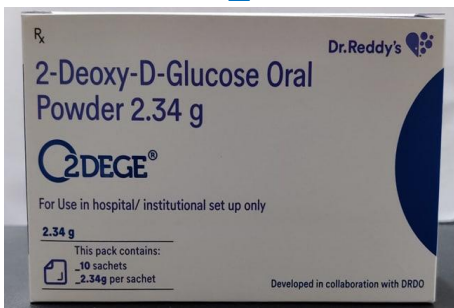


Operation **SADBHAVANA (Goodwill)** is a unique humane initiative undertaken by **Indian Army in Jammu & Kashmir** to address the aspirations of people affected by terrorism from beyond the borders.



## 2DG Drug : G for Game Changer

**Charan G | Student (XII)**



The COVID -19 Coronavirus mostly affects the lungs and reduces the oxygen carrying capacity of the cells, which in turn increases the need for external support.

A new anti-COVID oral drug found to be effective has been developed by The DRDO (Defence Research and Development Organisation) in collaboration with Dr.Reddy's Laboratories.

Speculation arises on how and when it was developed and when the clinical trials were conducted and why do many doctors recommend a drug that isn't even freely available in the market yet? Let's learn more.

The 2-DG(2-deoxy-D-glucose) was recently granted **emergency use** approval by the **Drug Controller General of India (DCGI)** as an adjunct therapy in **moderate** cases of COVID-19.

It is expected to help hospitalised COVID-19 patients and reduce their supplemental oxygen dependence.

## DEVELOPMENT AND CLINICAL TRIALS

The **Project Director** and **Scientist** of the 2-DG, Dr. Sudhir Chandana explained how the drug was developed.

They discovered 2-DG halts the spread of COVID-19 within the cells and the permission for the clinical trials were given in May 2020.

By the end October 2020, all the 3 phases of the trials were completed.

The results of the trials showed that in terms of improvement of vital signs of COVID-19 symptomatic patients, there was a difference of 2.5 days compared to Standard of Care (SoC). These trials were conducted in 27 COVID-19 hospitals in several states.

### Do You Know?

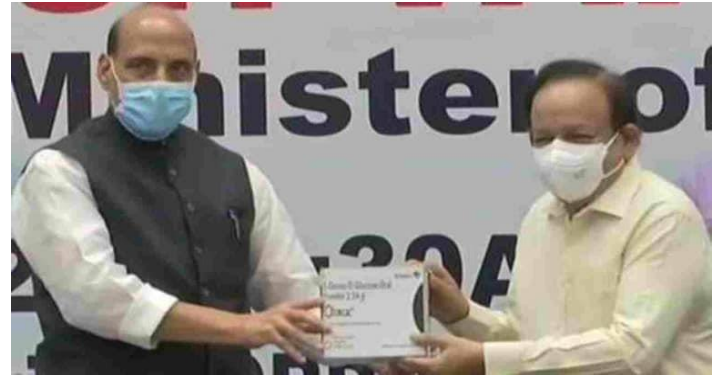
**Standard of Care:** A diagnostic and treatment process that a clinician should follow for a certain type of patient, illness or clinical circumstance.



## MANUFACTURE AND CONSUMPTION

It can be easily prepared and made available in plenty. Developed in powder form, it can be ingested after dissolving it in water.

It's a new ray of hope after the vaccine and it is expected to be easily available by mid-June. As a new product is launched, beware of illegal products in the name of the drug. Remember, it's the time to be cautious and responsible with a positive attitude.



## 500 Oxygen Plants Across India

**Smt Sarada Devi Ravutu**



**NATIONAL  
HIGHWAY  
AUTHORITY OF  
INDIA**



The National Highways Authority of India (NHAI) has been entrusted with the task of constructing around 500 medical oxygen plants across the country.

### OBJECTIVES

- Timely delivery of liquid medical oxygen to hospitals and medical centres.
- To save the lives of patients critically affected by COVID-19.

### LOCATIONS

- To be identified by all field officers of NHAI after the approval of Defence Research and Development Organisation (DRDO).

#### Each site will be

- finalised by the Health Ministry
- near a district hospital having adequate space

### HIGHLIGHTS

- Cost of each site - around Rs 15 lakh.
- Engineers will collaborate with doctors to ensure oxygen supply to the needy patients.
- Can be ready in a fortnight without reinforced cement concrete (RCC) structure. In case of RCC structure, a month.

**RCC** – A mixture of cement, coarse and fine rocks strengthened by steel bars.

#### **Tankers carrying liquid medical oxygen**

- are exempted from toll fees on National Highways.
- will be treated at par with ambulances for a period of two months or till further orders.



## India's Vaccine Shortage – Myths and Facts

Kum Shruthee M S

The COVID-19 pandemic placed the whole world in a race against time to develop vaccines against the virus. Within one year of research, more than half a dozen vaccines have been approved, and several are near approval for emergency mass use.

The second wave in India was more deadly and devastating, affecting millions and leaving the healthcare system overwhelmed. It is believed that severity of the second wave was due to B.1.617 variant of the virus, that resulted in a faster spread of infections.

Its virulence placed an enormous burden on the government for increasing vaccine production. Considering the massive population, the **challenges of vaccinating entire India are tremendous.**

India, the second most populated country **rolled out the world's largest vaccination drive** on 16<sup>th</sup> January 2021, with healthcare workers receiving the first jabs in phase one. In the second phase, senior citizens (60+) and people aged 45 and above with comorbidities were eligible and this was expanded on 1<sup>st</sup> April to cover all above 45. The third phase called the "Liberalised and accelerated phase", from 1<sup>st</sup> May made citizens above 18 years eligible to get vaccinated.

Despite the fact that India's daily vaccination rate is one of the highest in the world, vaccine shortage is an impediment to the country's mass vaccination drive. Supply has not picked enough pace with skyrocketing demand for vaccines and several states are experiencing vaccine shortage.

This has raised several questions and criticisms about India's vaccination strategy and effort, and less clarity on certain questions has given room for myths to float around. The intention of this piece is to get some of the commonly raised questions clarified.

### **Did India's vaccine diplomacy create shortage of vaccines in India?**

This is one of the most repeatedly placed arguments to explain the vaccine crunch. Is this a fair argument? To answer this, it becomes essential to identify the categories under which vaccines were exported from India.

A large picture of India's Vaccine diplomacy program is painted as donations or grants to poorer nations but this would be misleading because out of the 60 million plus vaccines that were exported from India, large proportions of it were, exported commercially and as obligations under COVAX program.

As of 21<sup>st</sup> May, India has administered "**187 million doses to its own citizens**" and **10 million were donated** under "Vaccine Maitri initiative", largely to its neighbours. Would India have not experienced vaccine shortage had the 10 million vaccines not been donated?

It seems too small a number to alter the current picture. Moreover, **India's vaccine diplomacy should be seen as a strategic tool to exercise its soft power and balance Chinese influence in the neighbourhood.**

Serum Institute of India (SII) procured licence last year to manufacture the Oxford- Astra Zeneca Vaccine but it came with commercial obligations that SII would provide 550 million Astra Zeneca vaccines under the **Global Alliance for Vaccines and Immunisation's (GAVI) COVAX** initiative, that commercially sources vaccines from major vaccine manufacturers to distribute in third world countries.

Other than legal obligations, commercial export of vaccines by Indian vaccine manufacturers is important because India is dependent on other countries like United Kingdom for raw materials and formula for vaccine preparation.

This apart, one should also factor in the **wastage of available vaccine** owing to the poor handling of the vaccination drive by states.

### **Why does not India invoke Compulsory Licensing?**

There has been a persistent demand to invoke the compulsory licensing provisions provided under the Patents Act to get domestic manufacturers to produce vaccines. It is easier said than done because merely getting a licence would not solve the problem of vaccine shortage.

There are several steps involved in the process of making vaccines and **even if one knows the formula, without the right facilities, raw material and trained human resource, manufacturing vaccines is a far-away achievement. Astra Zeneca needed seven months to transfer Oxford University's Vaccine technology to one of its sites.**

Without the necessary tech- transfer, compulsory licensing would end up serving no purpose. The Indian government believes that **partnerships are the way forward and not patent waivers.**

### **Why were foreign vaccines not approved earlier?**

Dr Vinod Paul, chair of National Expert Group on Vaccine Administration for Covid-19 and Niti Aayog member has explained that vaccines are in limited supply globally and Indian government has been continuously engaging with international vaccine manufacturers right from mid- 2020.

Until recently, as per the New Drugs and Clinical Trial Rules, 2019, whenever a foreign manufacturer applies for emergency use authorisation of vaccines, it has to submit the result of the local clinical trials, (or bridging trials) in which the manufacturers conduct phase 2/3 studies to collect safety and immunogenicity data.

Serum institute's Covishield whose licence is approved by Astra Zeneca underwent a bridging trial and so did Sputnik Vaccine from Russia and both received approval. As per the rules, the regulator can bring relaxations, if vaccine has been approved by national regulator of another country and no major unexpected serious adverse events have been reported.

Pfizer's application was rejected by India early this year after it refused to conduct local trials in India. Despite being approved by UK, there were concerns about its safety due to missing information needed from local trials.

Recently, India waived the pre-condition for a foreign manufacturer to conduct phase 2- 3 trials at Indian sites but **a special condition has been introduced under which foreign manufacturers have to assess the first 100 beneficiaries for seven days for data on safety** before extending the vaccination programme. A parallel bridging trial will also be conducted and manufacturers have to submit data on safety to the regulating authorities.

Safety precautions are mandatory while making important decisions especially when conditions vary across the world.

#### **Do You Know?**

A **patent** is government licence given to a product owner for a set period to exclude others from making or selling it.

**Compulsory licence** is issued by the government to produce a patented product without the consent of the patent owner.

**Immunogenicity** is the ability of a foreign substance, e.g. an antigen, to provoke an immune response in the body of a human or other animal.

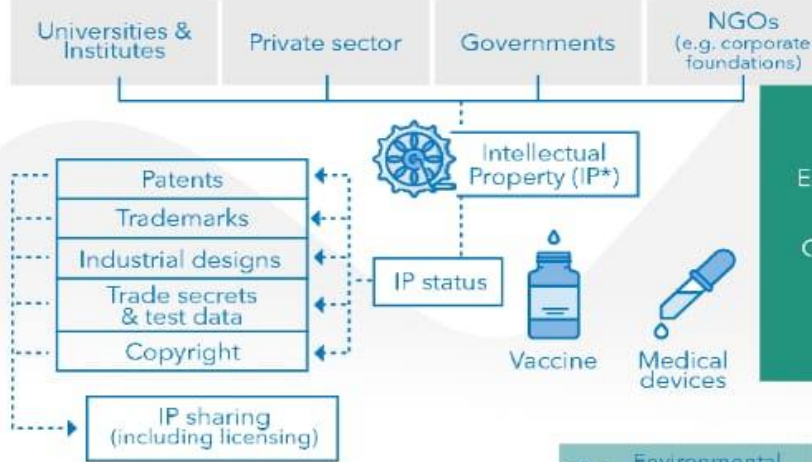


# DEVELOPING & DELIVERING COVID-19 VACCINES AROUND THE WORLD



## 1 Vaccine development

1

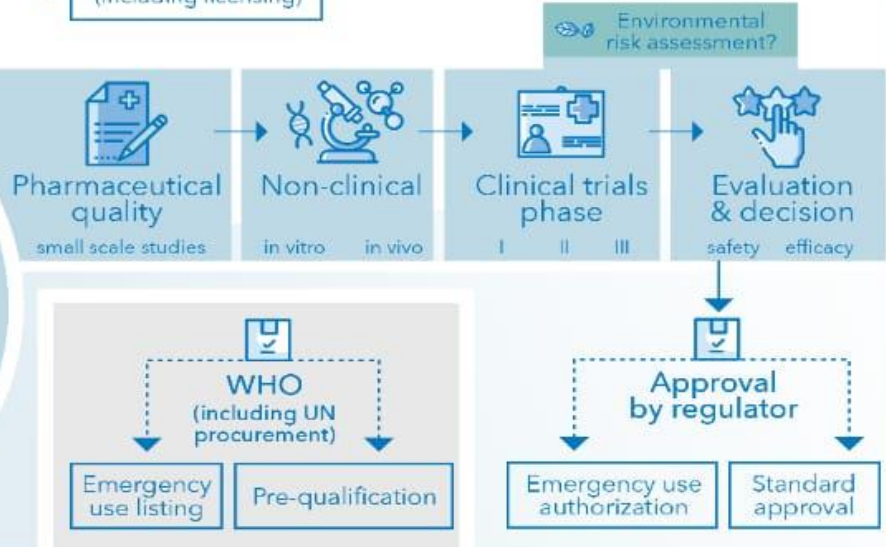


Exchange of data & samples

Good laboratory practice

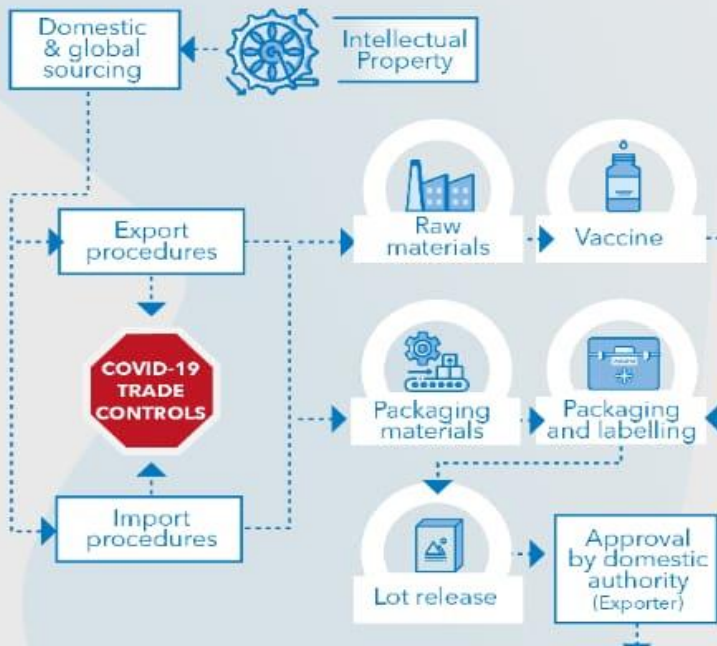


## 2 Domestic approval (Manufacture)



QUALITY ASSURANCE

## 3 Vaccine manufacture



Quality control representing up to 70% of manufacturing time

Several hundred quality control tests

Inspection by regulatory authority (exporter + importer)

Good manufacturing practice

# 4 Domestic approval (Importer)

Domestic approval  
(repeat step 2)

OR

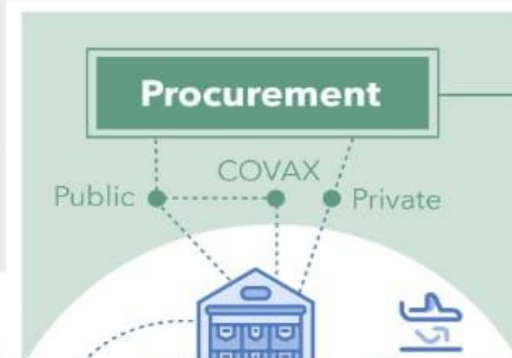
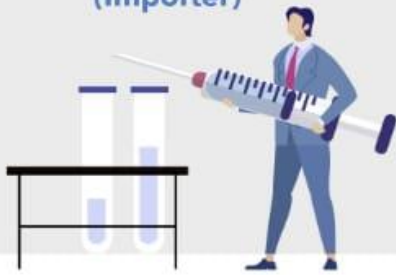
Use step 2 approval  
(WHO or foreign regulator)

APPROVED ✓

Approved by regulator

Approval of manufacture facility

Approved for market  
(labelling, packaging)



# 5 International distribution



A vaccine typically travels through several different sites before being ready for shipment

Good distribution practice



# 6 Border clearance

# 6



Customs & other border agency approval

Inspections & controls

Cold chain integrity

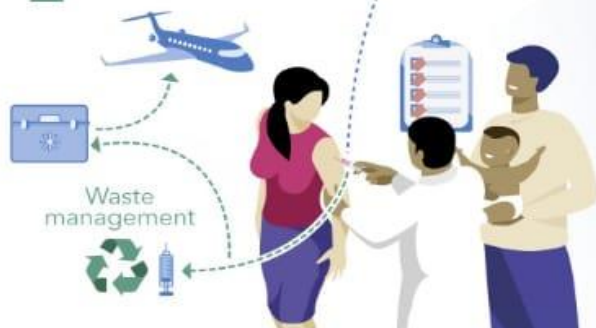
Tariffs, other duties & charges, internal taxes

IP border measures

Customs release decision

Metrology

# 7 Domestic distribution & surveillance



Last-mile delivery

Distribution

SUB-STANDARD & FALSIFIED

Action by health and regulatory surveillance authorities

COUNTERFEIT

Action by market surveillance & enforcement authorities

Testing

TRANSPARENCY ESSENTIAL AT EVERY STEP

QUALITY ASSURANCE

QUALITY ASSURANCE

Source: WTO, based on EMEA, ICPMA. For clarity of presentation, the different steps in the vaccine value chain are presented sequentially. To expedite access, in practice, different steps are being undertaken in parallel. \*IP may be generated at multiple steps in the vaccine trade value chain.

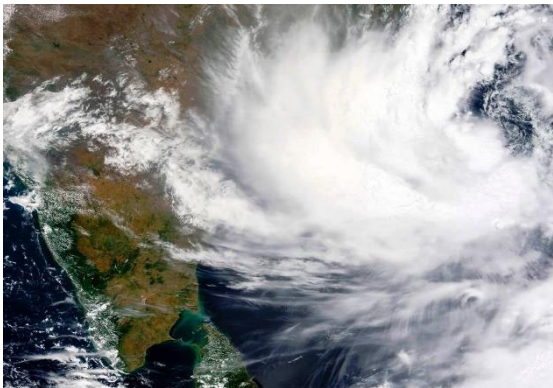
# State/UT-wise vaccine wastage – As reported on CoWIN

S. No.	State/UT	Wastage %	S. No.	State/UT	Wastage %
	India	6.3	11	Rajasthan	6.4
1	Jharkhand	37.3	12	Nagaland	6.4
2	Chhattisgarh	30.2	13	Maharashtra	6.2
3	Tamil Nadu	15.5	14	Telangana	6.2
4	Jammu & Kashmir	10.8	15	Karnataka	5.5
5	Madhya Pradesh	10.7	16	Uttar Pradesh	5.0
6	Gujarat	9.4	17	Uttarakhand	4.8
7	Punjab	9.4	18	Delhi	4.6
8	Assam	6.8	19	Andhra Pradesh	4.4
9	Tripura	6.8	20	Himachal Pradesh	4.3
10	Dadra & Nagar Haveli	6.6	21	Bihar	3.6



## Disaster Mitigation – A Success Story

Shri Krishnakumar C S



The most unwelcome guest in the Indian subcontinent is the Tropical Cyclone. The latest in the list is 'Yaas' which caused damages on the coast of Odisha and West Bengal.

Disaster mitigation has been the key objective of Disaster Management all over the world.

From the 1999 super cyclone in Odisha, which claimed over 10,000 lives, to Cyclone Yaas when **casualties have been limited to less than half a dozen**, India seems to have made remarkable progress in **Disaster Risk Reduction (DRR)**.

The UN Office for Disaster Risk Reduction (UNDRR) cited Odisha's cyclone shelters and evacuation efforts as role models for the world.

### Steps that reduced cyclonic risk:

- Zero causality approach
- Safe shelter homes in the coastal region
- Flood embankments
- Dedicated efforts of NDRF and SDRF
- Early warning system
- Use of satellites to track the origin and movement of cyclones



Quick and proactive action is the only way to save human lives when a disaster strikes a place. Recognising this, India formed a specially trained task force named **National Disaster Response Force** (NDRF) under Disaster Management Act, 2005. It plays a major role in evacuation and rescue of people and distribution of essential commodities to those affected.

The apex body for disaster management in India is the **National Disaster Management Authority** (NDMA). The Prime Minister is its chairman.



1. Aakash pointing to a photograph says, “The lady in the photograph is my niece’s paternal grandmother”.

How is the lady in the picture related to Aakash’s brother who has no other siblings?

2. Milk is to water as Ghee is to?

3. Find the next term: 13,35,57,79,911, \_\_\_\_\_.

4. If  $-$  means  $\times$ ,  $\times$  means  $+$ ,  $+$  means  $\div$  and  $\div$  means  $-$ , then  $19 \times 20 + 4 - 5 \div 30 = ?$

5. Naveen ranks seventh from top and twenty eighth from the bottom in a class. How many students are there in the class?

6. Five friends A, B, C, D and E are sitting on a bench.

- A is sitting next to B.
- C is sitting next to D, D is not sitting near E, E is on the left end of the bench, C is on second position from right.
- A is on the right side of B and to the right side of E. A and C are sitting together.

Who is sitting in the centre?

7. In a certain code language ‘479’ means ‘fruit is sweet’; ‘248’ means ‘very sweet voice’ and ‘637’ means ‘eat fruit daily’.

Which digit stands for ‘is’ in that code?

8. If the ‘cook’ is called ‘butler’,  
a. ‘butler’ is called ‘manager’,  
b. ‘manager’ is called ‘teacher’,  
c. ‘teacher’ is called ‘clerk’ and ‘  
d. clerk’ is called ‘principal’,

who will teach in class?

9. If FUNKY is coded as HWNIW, how will PAINT be coded in that language?

10. If day after tomorrow is Monday, what was the day-before yesterday?

11. aab\_aaa\_bbaa\_a

Fill the blanks using the correct alternative

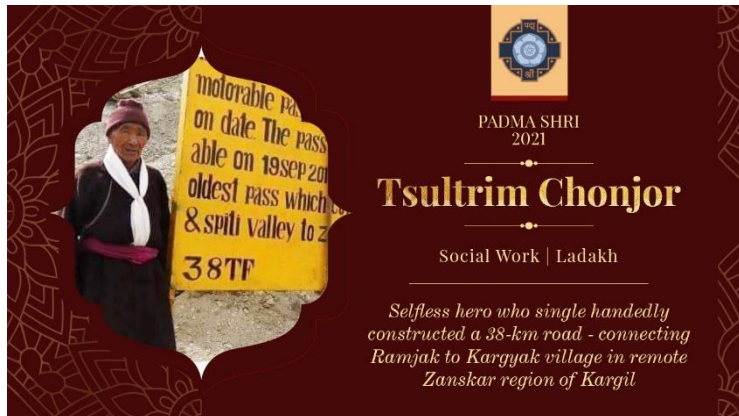
12. Pointing to a photograph, a man said, "I have no brother, and that man's father is my father's son."

Whose photograph, was it?

# Know your Padma Awardees

## Shri Tsultrim Chonjor

Smt Nandhini S



Hailing from the Himalayan village Stongday, 75-year-old **Tsultrim Chonjor**, has a story of dedication and perseverance to inspire us all.

This former government employee, fondly known as 'Meme Chonjor', was unhappy at the remoteness of the region from the Indian mainland.

Repeated pleas for better roads and facilities had fallen on deaf ears.

He **singlehandedly led efforts (2014 -17) to construct a 38-km stretch of road** from Ramjak in Jammu and Kashmir to Kargyak village in the Zaskar region.

**Spending Rs 57 lakh from his life savings and selling his ancestral property**, Meme Chonjor pressed a JCB machine into action, set forth with five donkeys and constructed the road.

Operating at an average altitude of 3500 metres above sea level took its toll on his health.

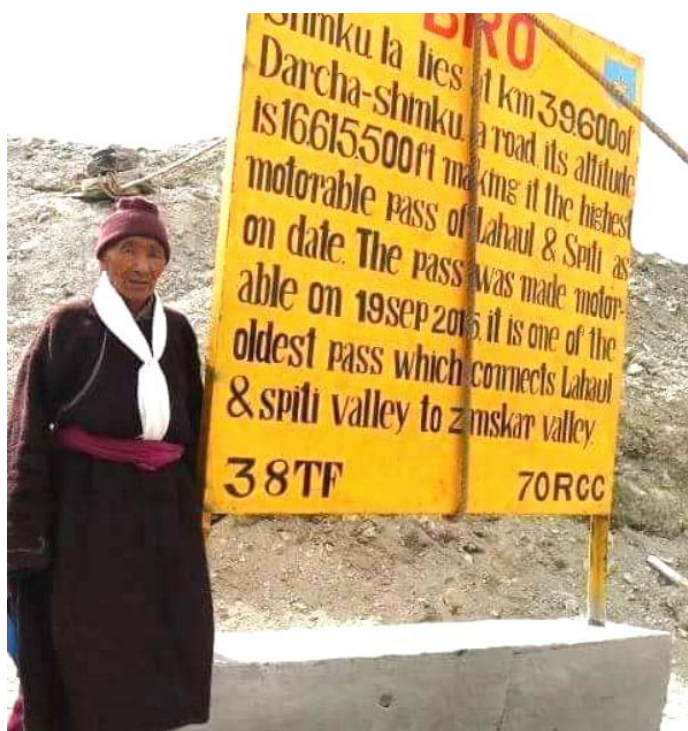
Other challenges include a short working season of four to five months since there is absolutely no scope for work in the harsh winter months when the temperatures drop to minus 35 degrees Celsius. Unperturbed, he slogged on and accomplished his mission.

His unflinching efforts for the **welfare of his people** won him the **Padma Shri (2021)**.

How does he sustain himself financially after nearly spending all his money?

His thought-provoking response: ***"I believe in simple living, so I don't need massive financial support. How much does one really need?"***

**A living embodiment of SIMPLE LIVING AND HIGH THINKING!!!**



## FLAME LILY



Flowers are amazing gifts of nature and can entice anyone with their distinctive beauty and fragrance.

We all love flowers, don't we?

There are many species which we've not heard about. Let's know about one such Indian flower.

**Common name:** Flame Lily

**Botanical name:** *Gloriosa superba* L.

**Family:** Colchicaceae

It ranks first in the list of commercially cultivated medicinal plants and therefore it is fondly known as 'money-spinner' among the farmers!

The representative poem on 99 flowers of the Sangam literature *Kurinji Paattu* also begins with the name *Kaanthal* illustrating the importance of this plant.

*Kaanthal* is the State flower of Tamil Nadu. The words in the scientific name 'glory' and 'superb' express the beauty of this wild climber as well!

The greatness of this flower has also been written in many ayurvedic verses, including [Charaka Samhita](#).

It is a perennial but perennating (can survive a winter or dry season and grow again) climber, with fleshy, traditional plough-shaped rhizomes.

The striking arrangement of five, red-tipped yellow petals are often compared with the maruthaani (henna) in Tamil literature!

However, this combination of colours could be a strain for the eye, hence it has one more name in Tamil, 'kannu vali poo'!



### **Medicinal value**

*Kaanthal* is used in our traditional systems of medicine for treating skin diseases, intestinal worms, chronic ulcers, leprosy and cancer, to kill head lice and as antidote for poisonous bites.

A *Kaanthal* based medicine is used to induce labour for child birth.

### **Do You Know?**

**Rhizome** – a continuously growing horizontal underground stem which puts out lateral shoots and adventitious roots at intervals, e.g. ginger, turmeric.



# Architectural Wonders of India

Smt Sarada Devi Ravatu

## India's First Cantilever Bridge



### Facts about Pamban Bridge

Length	2,062 m
Opened	1915
No of tracks	1
Track Gauge	Broad Gauge
Type	Cantilever Bridge
Elevation	12.5 m above sea level

**Pamban Bridge** is a railway bridge on The Palk Strait connecting Mandapam on the Indian mainland and Rameswaram island.

### OBJECTIVE

- The British wanted to increase trade with Sri Lanka.

### HIGHLIGHTS

- Designed by German engineer Scherzer; hence called the Scherzer span; now being replaced by a modern one to improve the life of the bridge.
- India's first sea bridge; second longest (the [Bandra-Worli Sea Link is the longest](#)); built in a highly corrosive environment.
- Has a double-leaf bascule section midway, which can be raised to let ships and barges pass through.
- Following cyclone-induced tragic train accident in 1964, Indian Railways installed devices to check the wind velocity across the bridge.
- Metro man E Sreedharan, played a major role in bolstering the bridge within 46 days.
- In 1988 a road bridge was built running parallel to it.



## New Technology On Pamban Bridge

**NEW PAMBAN BRIDGE:** Construction is in progress at an estimated cost of Rs. 281 crores.

### Do You Know?

**Cantilever:** A long projecting beam or girder fixed at only one end.

A **bascule bridge (also drawbridge / lifting bridge)** is a moveable bridge with a counterweight continuously balancing a span, or leaf, throughout its upward swing to provide clearance for boat traffic. It may be single- or double-leafed.

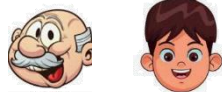
Bascule bridges are the most common type of movable span because they open quickly and require relatively little energy to operate, while providing the possibility for unlimited vertical clearance for marine traffic. The name comes from the French term for balance scale, which employs the same principle.



### DADU & BALU

Know  
your

Nation



## ANDAMAN & NICOBAR ISLANDS

It was a pleasant evening, the gentle rays of the sun poured through the panes of the window. Balu was painstakingly trying to solve a puzzle forgetful of the world around.

**Dadu:** Balu dear, still solving?

**Balu:** Yes Dadu, I solved everything except one.

**Dadu:** Oh, is it! Should I help you?

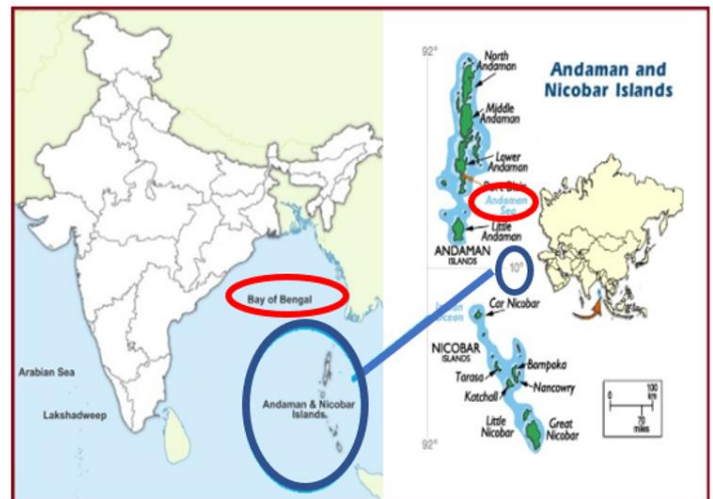
**Balu:** [smilingly] Dadu, why not!

**Dadu:** So, this is the question!

**Dadu:** Ahhh! I found out the answer. Here is the clue –

**Look at the map given!**

### Kum Priyadharshini



**Balu:** [With twinkling eyes] Is it Andaman and Nicobar Islands Dadu?

**Dadu:** Yes, you are right!

**Balu:** [Thrilled] Dadu, why can't you tell me more about this place?



**Dadu:** [With a serious look] Yes, time to know more about India. The Andaman Islands are located to the north of 10° north latitude while the Nicobar Islands are located to the south of 10° north latitude. The Andaman Sea lies to its east, whereas the Bay of Bengal to its west.

**Balu:** Sounds interesting Dadu! Are there any interesting stories about Andaman and Nicobar?

**Dadu:** Yes!! The history begins with Rajendra Chola who converted this place as a naval military base against the Srivijaya Empire (Indonesia). Then, Denmark was the first European country to establish their colony followed by the British in 1789 as their naval military base.

During World War II Subhash Chandra Bose strengthened the position of Azad Hind Fauz with Japanese forces and renamed the north and south islands as Shaheed Dweep and Swaraj Dweep respectively. It became a union territory of India in 1956.

**Balu:** Fascinating!! Are there any industries?

**Dadu:** Fishing, boat repairing, tourism and agriculture dominate their economy. Principal crops include rice, coconuts, fruits and spices- clove, nutmeg and cinnamon. Rubber, oil palms and cashews are also grown here. In addition to farming, there is production of sawn wood and garments. Look at some of the famous art and crafts of this place.



**Balu:** Tell me about the people, Dadu!

**Dadu:** Except for the original tribes, most of the population are the descendants of deported people during the British colonial era wherein 70 % of the population belong to the Bengali community.














**Balu:** Tell me about the tribes, Dadu.

**Dadu:** [Sadly] The tribal population is dwindling. Great Andamanese, Onge, Jarawa and Sentinelese live in the Andaman Islands and the other two Mongoloid tribes (Nicobarese and Shompen) in the Nicobar Islands. The Sentinelese is the least studied and contacted tribes. Their population is around 300 and live a life as in Palaeolithic age.

**Balu:** What does that mean?

**Dadu:** Old Stone Age, when people used chipped stone tools. [smiles] To put it differently, they have lived close to nature for millions of years without spoiling the world around them in the name of civilisation. [sighs] Ok. Let me show you the lovely places and things to see.

**Balu:** [Gleefully] Lovely!! Dadu, our next vacation spot after the lockdown!!

-  **Area-** 8,249 sq. km
-  **Population-** 3,79,944
-  **Capital-** Port Blair
-  **Principal languages-** Hindi, Nicobarese, Bengali, Tamil, Malayalam, Telugu
-  **No. of districts-** 3
-  **Lok Sabha Seats:** 01
-  **Literacy Rate:** 86.2 %
-  **Rajya Sabha Seats:** Nil
-  **Created on:** 1 November 1956
-  **Religion:** Hinduism, Christianity, Muslims
-  **Forest cover:** 7,171 sq km
-  **Fauna:** 96 Wildlife Sanctuaries, 9 National Parks and 1 Biosphere Reserve
-  **Festivals:** Island Tourism Festival, Durga Puja, Pongal, Panguni Uthiram, Onam, Mahashivaratri, Janmashtami, Holi, Diwali, Christmas, Good Friday, Island Tourism Festival, Monsoon Music Festival
-  **First Chief Commissioner:** Inamul Majid
-  **Highest Peak :** Saddle peak, North Andaman island; height 732 mt



Cellular jail



Viper Island



Anthropological Museum



Gandhi Park



Chidiya Tapu, (Bird watching)



Corbyn's cove Beach



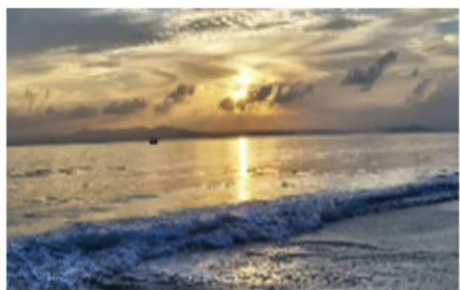
**The island chains are thought to be a submerged extension of the Arakan Mountains.**



**India's southernmost point, the Indira Point, decreased by 4.25 metres during the 2004 Tsunami**



**Baratang (Andaman) is the only place in India with mud volcanoes.**



**Katchal Island received the first sun rise of the millennium.**



**It has India's first and only joint tri-service (Army, Navy, Air Force) defence command.**



**Pandanus (Nicobar Breadfruit) is a fruit found and widely eaten in Nicobar.**



The largest sea turtles in the world nest here.



The largest living arthropod in the world, Robber crab, resides here.



Dugong, the gentle sea cow, is the state animal.



## Know your Legacy

Smt Sandhya Nair

### The King Who Never Lost a Battle

Sambhaji (14.5.1657 – 11.3.1689) was born to Saibai, Shivaji's first wife. His mother died when he was two years old and he was raised by his paternal grandmother Jijabai.

At the age of nine, Sambhaji went to live with Raja Jai Singh I of Aamer as a political hostage to ensure compliance of the Treaty of Purandar that Shivaji had signed with the Mughals in 1665.

As a result of the treaty, Sambhaji became a Mughal mansabdar

#### Man of letters

- ➔ Sambhaji was sophisticated, educated and well-versed in 13 languages including Portuguese other than Marathi.
- ➔ He was familiar with the famous works of different sciences and music written by ancient scholars in Sanskrit.
- ➔ He authored several books. The most notable being *Budhbhushanam* in Sanskrit and *Nayikabhed*, *Saatsatak*, *Nakhshikha* in Hindi.

#### Sambhaji's growth at a glance

- ➔ At the tender age of 10, he learnt the principles of politics and started uniting other warring Hindu kings.
- ➔ At 19, he had started taking important decisions. He knew that political autonomy was very important for the economic development of the country and planned suitably.



- ➔ He was just 23 when he lost his father. He took it upon himself to further the cause of "Swarajya" that was close to his father's heart.
- ➔ In a span of 9 years, **Chatrapati Sambhaji Maharaj fought and won 120 battles**. He managed to keep a check on the Mughal invasions. He is famous as a king who never lost a battle.

#### Face-off with the Mughals

The Mughals were the staunchest enemies of the Marathas during Sambhaji's reign.

One of his first major actions against them was when his forces attacked Burhanpur, a wealthy Mughal city in Madhya Pradesh and an important trading centre. Sambhaji had planned the attack, being aware of Aurangzeb's plans to expand into the Deccan. It came as a huge blow for the Mughals.

Between 1682 and 1688, the Marathas under Sambhaji and the Mughals under Aurangzeb were engaged in multiple battles in the Deccan.

The Mughals wanted to seize the forts held by Marathas in Nashik and Baglana regions. In 1682, they attacked the Ramsej fort near Nashik but failed and were forced to retreat.

The Ramsej fort had become an important morale booster for the Marathas. It is said that Sambhaji had attacked Aurangzeb's army of 8,00,000 with just 20,000 soldiers.

### **Battles with other dynasties**

Sambhaji also fought the Abyssinian Siddi rulers who wanted to capture the Konkan coast. He restricted their presence to the island of Janjira, located in the present-day Raigad. When the Maratha commander-in-chief Hambirrao Mohite was killed in the Battle of Wai in 1687, a large number of Maratha troops began deserting Sambhaji. In January 1689, the latter was captured by Mughal forces.

There are variegated historical accounts of what happened thereafter, but almost all of them state that Sambhaji was asked to surrender all his forts and treasures, and finally to convert to Islam.



Sambhaji refused, and as result was put to a torturous death.

The supreme sacrifice of the king and his war strategies even with smaller armies made him a symbol of greatness.

Sambhaji was a protector of his dharma, despite being tortured for 40 days.

India celebrates **Sambhaji Maharaj Jayanti on May 14<sup>th</sup>** as a tribute to his contributions to the Maratha reign.

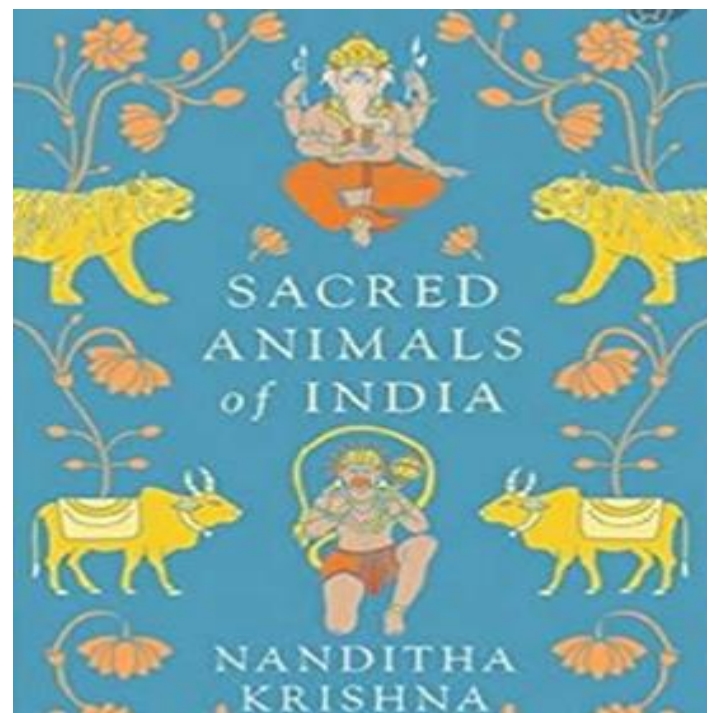


### **Smt Sandhya Nair**

Penned by Prof. **Nanditha Krishna**, *Sacred Animals of India* is an engaging read for anyone interested in mythology, legends and traditions associated with different animals and their relationships with religions.

This book examines the important place of animals in the lives of people through in-depth references to varied customs and rituals in Hinduism, Buddhism and Jainism.

The stories have been painstakingly compiled from all corners of the country.



All animals are referred to by the names in Hindi, Sanskrit and Tamil. The author's meticulous research elaborates how these practices led to the worship and protection of animals.

Through reference to *Panchachantra*, a collection of animal stories by Pandit Vishnu Sharma, Nanditha highlights how values were imparted using animals.

There is a logic behind including animals in religious stories, and the wise men of yesteryears figured out that religion is a good way to promote conservation. Interestingly, all these religions promoted vegetarianism which is increasingly adopted by people worldwide.

This book is a necessary reminder of the role animals play in mother earth's biodiversity.



## Swachh Bharat Success Stories

Meghalaya's **Mawlynnong** and Tripura's **Vangmun** are well known for their cleanliness. But in 2016 **Belona** joined this exclusive group. Let's see how.

A local NGO '**Drishti**' consisting 25 youths worked with Belona villagers comprising 350 families, started by simply planting saplings; soon it was followed throughout the village.

Women started locally producing paper bags using newspaper waste, distributed to shops in the village and thus prohibited plastic bags.

Men produced dust bins made of bamboo in place of plastic.

The village imposed a fine on anyone using single use plastic; it is also free of intoxicants.

Soon Belona became Assam's first 'Clean & Green Village'.

**Let's all strive to bring about change in our own homes and streets.**



**Hari Srinivasan S | Student (VIII)**

## The Inspiring Story of Chandana Bauri

**Chandana Bauri**, from the Saltora Assembly seat in Bankura district of West Bengal scripted one of the historic wins in the recently concluded Assembly polls that will be long remembered by the people of India.

This 30-year-old homemaker of humble means, with no political background or even money power has since become a house-hold name. She and her husband are registered labourers in MNREGA while Chandana's husband also works as a mason.

In her affidavit submitted to the Election Commission of India, the value of Bauri's total assets sums up to INR 62,296 only, including INR 6,335 in her bank account, three cows, three goats and a mud hut. Chandana's house does not even have a toilet.

As a party worker, she worked very hard cycling her way to various parts of the constituency to "strengthen the organisation and ensuring that people in need get requisite help".



### CHANDANA BAURI's CAREER GRAPH

2014	Joined as BJP karyakarta
2018	Gram Panchayat leader
2019	District Committee member
2021	MLA



## CURIOSITY corner

## ANSWERS

### 1. Mother

Clearly, the lady is the grandmother of Aakash's brother's daughter i.e., mother of the father of Aakash's brother's daughter i.e., mother of Aakash's brother.

### 2. Vanaspati

Milk is adulterated by using water, as Ghee is adulterated using vanaspati

### 3. 1113

Each term consists of two consecutive odd numbers; hence the next term is 1113

### 4. 4

Given expression =  $19+20\div 4\times 5-30$   
by using BODMAS,  
 $19+5\times 5-30 = 19+25-30 = 34-30 = 4$

## 5. 34

Total number of students = [Position of Naveen from top+ Position of Naveen from bottom]-1

## 6. 'A'

According to the given arrangement, the friends are seated in the following order:

EBACD

## 7. '9'

In the first and second statements, the common code digit is '4' and the common word is 'sweet'. S, '4' means 'sweet'.

In the first and third statements, the common code digit is '7' and the common word is 'fruit'. So '7' means 'fruit'.

Thus, in the first statement, '9' means 'is'.

## 8. Clerk



## 9. RCILR

(First two letters - skip one letter to the right, third stays the same, last two letters - skip one letter to the left)

## 10. Thursday

## 11. bba

The first should be filled by 'b' so that we have two a's followed by two b's. Second blank should be filled in by 'b' so that three a's followed by three b's and then the last blank is filled in by 'a' so that there are four a's. Thus, the pattern is **aabbbaabbbbaaaa**

## 12. His son's photograph.

The narrator has no brother, so he is the only son of his father, and his father's son is he himself. Hence, the narrator is the father of the man in the photograph, so the man in the photograph is his son.



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