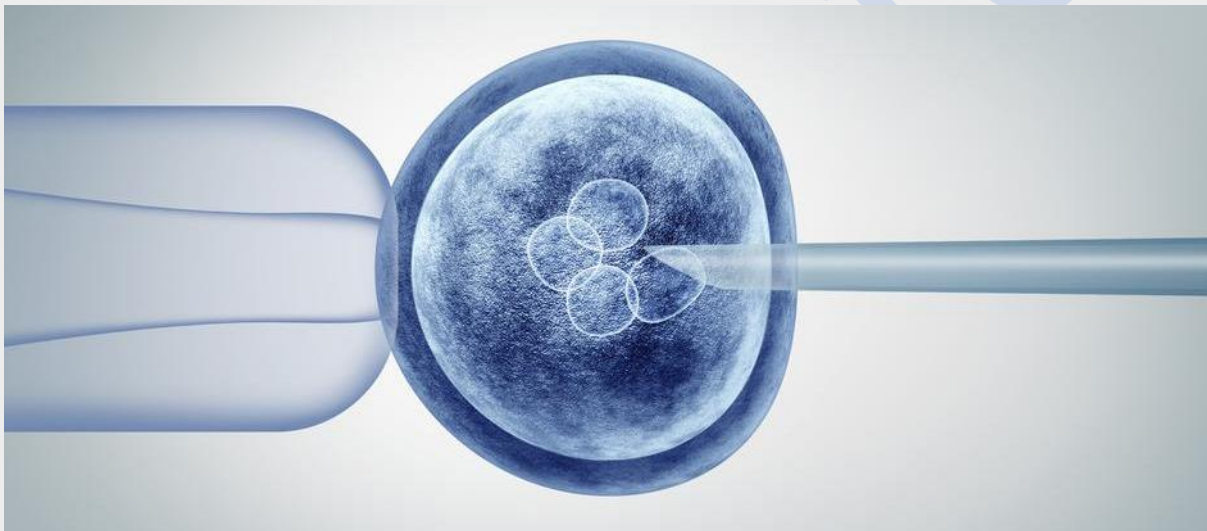


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### **1. How a CRISPR gene editing trial was able to treat some cases of inherited blindness**

#### **Why in News?**

Scientists have said they used a human gene editing tool, CRISPR-Cas9, to restore vision in people with a rare form of inherited or congenital blindness. The researchers said 11 out of the 14 people in a clinical trial experienced improved vision, without serious adverse side effects. They said the study was also the first to use gene therapy to treat children who had been born with a form of blindness.



#### **CRISPR gene editing brings 'BRILLIANCE'**

The trial was called "BRILLIANCE" and 12 adults and two children, who had a rare form of inherited blindness, known as Leber congenital amaurosis (LCA), participated in it. LCA affects about one in 40,000 people and causes severe vision loss at an early age. This blindness is caused by a gene mutation that prevents a protein from functioning properly. That protein — CEP290 — is critical for sight.

Participants in the study received a single dose of a CRISPR gene therapy called EDIT-101. CRISPR-Cas9 is a precise way of altering DNA. It cuts out specific strands of DNA — the thing that makes us who we are — and replaces them with a new strands.

In the case of EDIT-101, the treatment cuts out the mutation in CEP290 and inserts a healthy strand of DNA back into the gene. This restores normal function of the protein CEP290, allowing the retina to detect light.

In 2020, Emmanuelle Charpentier and Jennifer A. Doudna were awarded the Nobel Prize in chemistry for discovering CRISPR-Cas9.

### **The future of CRISPR gene editing**

More than 200 people have been treated with experimental CRISPR technologies. But so far, only one CRISPR treatment has been approved for clinical use — Casgevy, a treatment for sickle-cell disease — which has been available in the US, the UK, and the EU since December 2023.

Scientists have said they are entering a new phase in genome editing technologies, which they say they can safely help and cure — not just treat — patients with a variety of diseases. Ongoing clinical trials are testing other CRISPR therapies for HIV/AIDS, diabetes, cancer, cardiovascular diseases, and antibiotic resistance.

Relevance: GS Prelims & Mains Paper III; Science & Technology

Source: Indian Express

## **2. What is the banned organisation Sikhs for Justice?**

### **Why in News?**

Delhi Lieutenant-Governor V K Saxena recently recommended a National Investigation Agency (NIA) probe against jailed Delhi Chief Minister Arvind Kejriwal for allegedly receiving political funding from Sikhs for Justice (SFJ), a New York-based pro-Khalistan organisation that is banned in India.

Sources in the LG House told that the recommendation was made based on a complaint by Ashoo Mongia of the World Hindu Federation, a diaspora-based Hindu advocacy organisation. Mongia alleged that Kejriwal's Aam Aadmi Party received \$16 million from SFJ for "facilitating the release of Devinder Pal Bhullar and espousing pro-Khalistani sentiments".



### **What is Sikhs for Justice (SfJ)?**

SFJ was founded in 2007 by Gurpatwant Singh Pannun, a US-based attorney who is currently in his late 40s. According to its website, SFJ seeks to achieve "self-determination for the Sikh people in their historic homeland" in "Indian held Punjab", and "establish a sovereign state, popularly known as Khalistan".

Thus far, SFJ's most notable activity has been the so-called 'Referendum 2020' for the secession of Punjab — specifically the Indian state and not the Pakistani province — held among the Sikh diaspora in some cities.

### **Doublespeak of Pannun, SFJ**

Despite supposedly "turning a page" from the violence-ridden past Khalistan movement, SFJ and Pannun have not been shy to glorify terrorists and mass murderers.

For instance, the campaign headquarters for the 'referendum' in Canada is named after 'Shaheed' (martyr) Talwinder Singh Parmar, the mastermind behind the 1985 Air India bombing which killed 329 innocents, and remains the deadliest mass murder in Canadian history.

SFJ has also repeatedly hailed Indira Gandhi's killers, Beant Singh and Satwant Singh. In a viral video from 2020, Pannun promised to gift new iPhones to anyone who flew the Khalistan flag in honour of 'Shaheed' Beant Singh.

### **Banned in India**

India refers to Pannun as a terrorist, and has banned SFJ under the Unlawful Activities (Prevention) Act, 1967. The Home Ministry's 2019 notification issuing the ban says: "In the garb of the so-called referendum for Sikhs, SFJ is actually espousing secessionism and militant ideology in Punjab, while operating from safe havens on foreign soils and actively supported by inimical forces in other countries." Currently, almost a dozen cases are registered against Pannun and SFJ in India.

Relevance: GS Prelims & Mains Paper II; Governance

Source: Indian Express

## **3. History of India and Nepal's border issue**

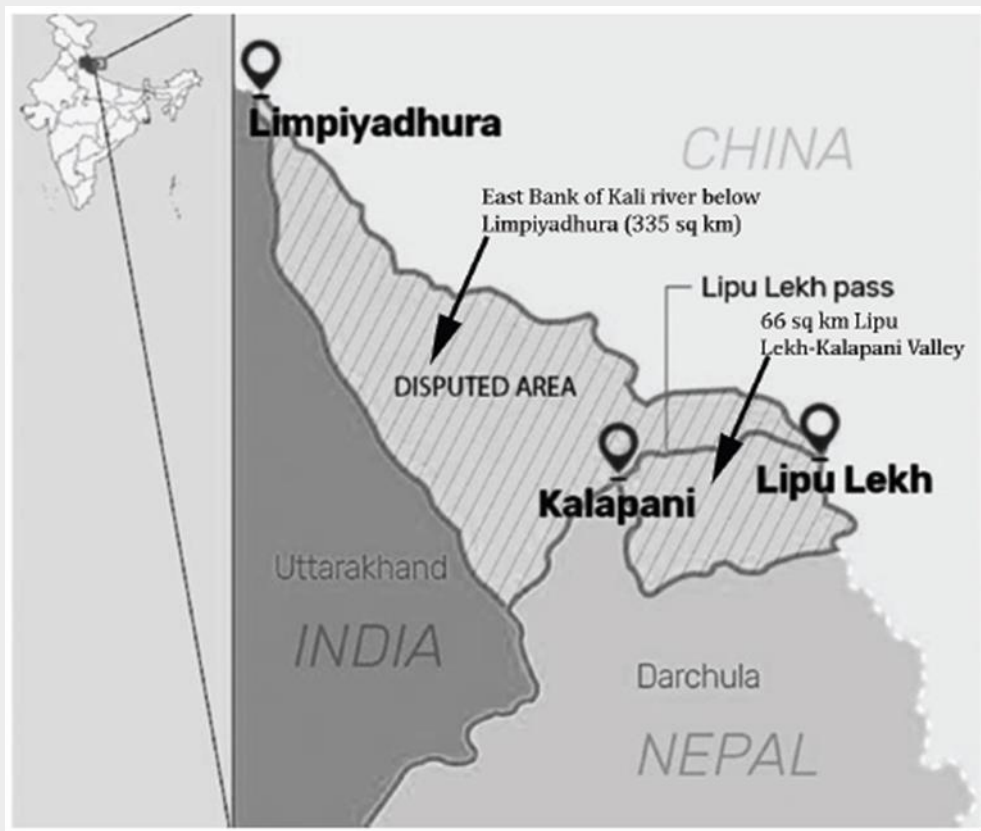
### **Why in News?**

Nepal's cabinet last week decided to put a map on its Rs 100 currency note showing certain areas administered by India in Uttarakhand as part of its territory, provoking External Affairs Minister S Jaishankar to say that such "unilateral measures" by Kathmandu would not change the reality on the ground.

### **Territorial dispute**

Kalapani is a region which is located in high Himalayas in the easternmost corner of Uttarakhand's Pithoragarh district. The region is surrounded between three places namely Limpiyadhura, Lipulekh and Kalapani. Tibet Autonomous Region of China lies to the north of the region and Nepal lies to the East and South of the region.

Kalapani region is presently under India's control, but Nepal also claims the region. The region is the largest territorial dispute between India and Nepal consisting of at least 37,000 hectares of land.



### **Origin of the dispute**

The present boundaries between India and Nepal are marked according to the Treaty of Sugauli signed between the Gurkha rulers of Kathmandu and the East India Company after the Gurkha War/Anglo- Nepal War (1814-16). According to this treaty, the King of Nepal was required to give up his claims over the region west to the river Kali and retain the territories located to the east of the river Kali.

River Kali originates in the High Himalayas and flows into the great plains of the Indian subcontinent. The dispute arises because of different interpretation of the source of river. According to government of Nepal, the source of river Kali is in the mountains near Limpiyadhura, which is higher in altitude than the rest of the river's flow. Accordingly, Nepalese government claims all territories to the east of river Kali right from mountains near Limpiyadhura.

On the other hand, India says the border begins at Kalapani which is where the river begins after merger of its tributaries. India also says the river actually takes the name Kali near Kalapani. Thus, the dispute is mainly because of the varying interpretation of the origin of the river.

### **Reasons for revival of dispute**

Presently, the Kalapani region is under control of India. In November 2019, India published a revised

political map showing the newly created Union Territories of Jammu and Kashmir and Ladakh. The map showed Kalapani as part of Pithoragarh district in Uttarakhand.

India also inaugurated the Darchula-Lipulekh pass link road on 8th May, 2020. This road passes through disputed Kalapani region and is used by Indian pilgrims to reach Kailash Mansarovar.

### **Response of Nepal**

Nepal protested immediately at both the times- release of revised political map by India and inauguration of Darchula-Lipulekh pass link road.

The government of Nepal even released new political map that included territories of Limpiyadhura, Lipulekh and Kalapani. Thereafter, second amendment was passed to the constitution of Nepal to give constitutional status to the new political map.

Political experts argue that with the passage of the constitutional amendment, Nepal has adopted inflexible stand on the Kalapani region issue. Consequently, the chances of resolution of the issue by way of dialogue between both the sides are very bleak.

### **Strategic importance of Kalapani region**



### **Lipulekh Pass**

The Kalapani region is home to Lipulekh pass, which connects Indian side of Himalayas to Tibet. This pass holds multifaceted importance as follows:

1. The pass has been used by pilgrims to reach Kailash Mansarovar, believed to be abode of Lord Shiva.



2. The mountain communities living in the region have been able to access markets of nearby places by using the pass. The traders on both the sides have used the pass for trade purposes as it is one of the approved points for border trade.
3. The pass also holds utmost strategic significance for India. Lipulekh pas is strategically located as it is nearest to the National Capital Region and can be of particular concern in case of an armed conflict with China.
4. To enhance access to Lipulekh pass, Border Roads Organization has constructed 80 km Darchula-Lipulekh pass link road. This road was inaugurated on 8th May, 2020. The road goes right up to the Lipulekh pass on the LAC.

Besides promoting cross-border trade and serving defence purposes, the road will significantly reduce the distance to Kailash Mansarovar. Earlier, the pilgrims had to take route either via Nepal or via Nathu La border in Sikkim, which entailed 20 per cent land journeys on Indian roads and 80 per cent land journeys in China. This ratio has now been reversed with the construction of Darchula-Lipulekh pass link road. Now pilgrims to Mansarovar will be required to cover 84 percent land journeys on Indian roads and only 16 percent in China.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express