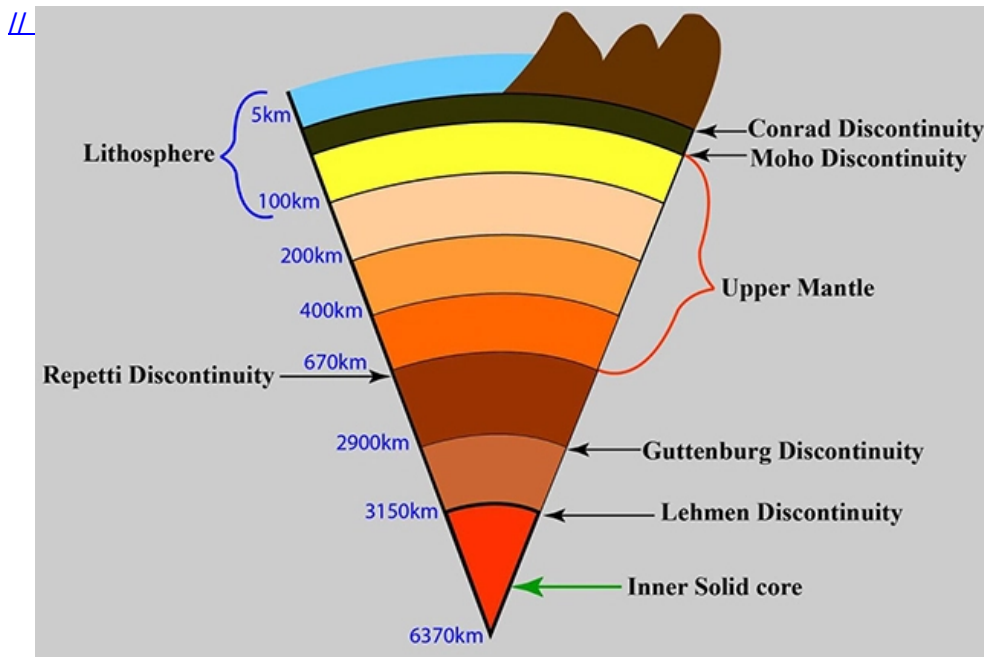




## Rapid Fire Current Affairs

### Earth's 5<sup>th</sup> Layer



Scientists, in a new study, **have confirmed the existence of a 5<sup>th</sup> new layer - the innermost inner core** (apart from the **4 layers: crust, mantle, outer liquid and inner solid core**) with a **radius of around 650 Km** (inner core radius (whole) - **1,221 km**).

This 5<sup>th</sup> layer is **made of the same material as the inner core** (iron and nickel) and the main **difference between the two is the way the atoms are arranged** to form a solid. This layer could have solidified and grown in a different direction than the rest of the inner core. The idea that the Earth could hold a 5<sup>th</sup> layer was proposed in 2002.

**Scientists rely on seismic waves** to study earth's interiors. These waves behave differently as they pass through diverse materials (e.g. - **travel slower while passing through hot materials**).

According to the analysis done, the innermost inner core **slows down the seismic waves at a point between the rotation axis** (from pole to pole) **and the equatorial plane** (perpendicular to the poles). In contrast, the outer shell of the inner core **slows down the waves only in the equatorial plane**.

**Read More - [Hidden Mantle Layers](#), [Earthquake \(Infographic\)](#)**

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**Windsor Framework**

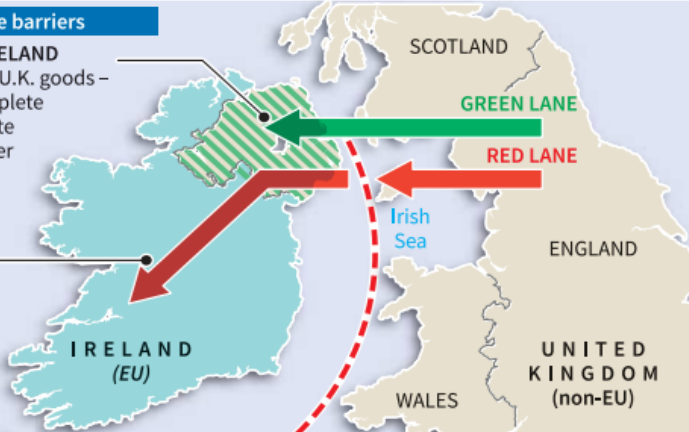
## A new deal to cool off trade disruptions

On February 27, the United Kingdom and the European Union struck a landmark agreement – the Windsor Framework – to replace the contentious Northern Ireland Protocol and end a bitter post-Brexit trade dispute

**Lowering trade barriers**

**NORTHERN IRELAND**  
Green lane for U.K. goods – traders to complete single certificate per truck, rather than multiple forms per load

**IRELAND**  
EU-destined goods go via red lane with full customs procedures



**European Court of Justice**  
The ECJ will continue to be the final arbiter on matters of EU law affecting Northern Ireland

**Stormont Brake**  
A “veto” which decides whether amended EU laws will apply in Northern Ireland. It requires 30 members of the 90-member **Northern Ireland Assembly** to stop any new EU single market rules

**European Commission:**  
Insists ECJ will remain sole, ultimate arbiter of EU law and single market disputes

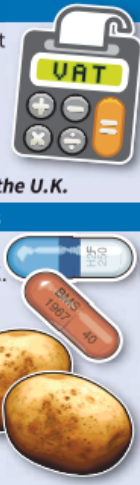
**Taxation and state aid**  
The U.K. government is to set rules in areas such as value-added tax and state aid in Northern Ireland – **rules rejected by the Commission in previous negotiations with the U.K.**

**Ending Protocol restrictions**

**Medicines:** To be available throughout the U.K. – not possible under old Protocol

**Plants:** Previously banned plants like seed potatoes and other plant products will now ship to Northern Ireland

**Pets:** Barriers removed for owners, who can now take their pets into Northern Ireland



The **Windsor framework** is the latest attempt at a remedy to the political complexities that have impacted trade and sentiments between the EU and the UK. It will replace the **Northern Ireland Protocol - the thorniest of Brexit fallouts.**

Under the Northern Ireland protocol, **N. Ireland remained in the EU single market with cumbersome trade/customs inspections** of goods going from Great Britain to N. Ireland hindering trade and causing food products to lose shelf life. Also, **EU rules prevented some UK gov policies from being implemented** in N. Ireland and the **presence of an Irish Sea border** upset those who seek a united UK.

The Windsor framework seeks to **address the trade disruptions by permitting free trade between Great Britain and Northern Ireland through the (introduction of) use of green and red lanes for goods** flowing into Northern Ireland. Green lane goods will have fewer checks and controls, including no customs checks or rules of origin. Red lane goods under the framework will be subject to full checks and controls to preserve the EU's single market.

**Read More - [Brexit and Northern Ireland Issue](#)**

## Adenovirus

West Bengal has recently reported **12 deaths in government hospitals due to Adenovirus infection.** However, there is no evidence of a viral epidemic at present.

Adenoviruses (ADVs) are **double-stranded linear DNA viruses** ranging from 70-90 nanometres in size. They can cause **cold-like symptoms, fever, sore throat, bronchitis, pneumonia, diarrhoea, and**

pink eye (conjunctivitis).

Read More - [Adenovirus](#)

## El Niño

### El Niño and La Niña

#### El Niño

- Warming of the ocean surface/ Above average sea surface temp. (SST)
- Easterly winds either weaken or start blowing in the opposite direction
- First noticed by Peruvian fishermen in the 1600s
- More frequent than La Niña

#### Impacts

- Drastically higher rainfall in S. America (coastal flooding and erosion)
- Droughts in Indonesia and Australia; wildfires
- Weaker monsoons and even droughts in India and SE Asia
- Reduces the upwelling of cooler, nutrient-rich waters from the deep - along the west coast of South and Central America.



Fig. 1 - Depiction of El Niño Phenomenon

#### La Niña

- Also called El Viejo, anti-El Niño, or simply "a cold event"
- Normal easterly winds along the equator become even stronger
- May last 1-3 years, unlike El Niño (which usually lasts no more than a year)

#### Impacts

- Heavier rains in SE Africa, catastrophic floods in Australia
- Drier-than-normal conditions in S. America
- Summer Monsoon rainfall - greater than normal rainfall in India; beneficial for agriculture dependent Indian economy
- Off the west coast of the Americas, upwelling increases, bringing cold, nutrient-rich water to the surface.

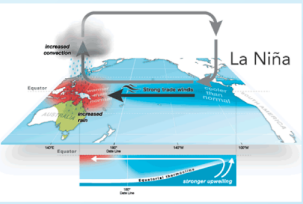



Fig. 2 - Depiction of La Niña Phenomenon

#### Oceanic Niño Index (ONI)

- It is a measure of the departure from normal sea surface temperature in the east-central Pacific Ocean.
- It is the standard means by which each El Niño episode is determined, gauged, and forecast.



The Vision

According to the [World Meteorological Organization \(WMO\)](#), a warming El Niño event may develop in the coming months **after three consecutive years of La Niña**.

El Niño is characterised by an **unusual warming of waters in the eastern equatorial Pacific** as opposed to **La Niña which usually brings cooler waters** in the same area. The phenomenon together is called the **ENSO (El Niño Southern Oscillation)**. El Niño has a high correlation with warmer summers and weaker monsoon rains in India.

Read More - [El Niño and La Niña](#)

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