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The 'workstreams' of the G20



Relevance: Prelims & Mains Paper II; International Organisations

Why in news?

- The 18th annual G20 Heads of State and Government Summit will take place at Pragati Maidan, in New Delhi on Sept. 9 and 10.
- Established in 1999, the G20, for about a decade worked, at the level of finance ministers and central bank governors only. After the financial and economic crisis of 2008, it became a leaders' forum.
- The summit is essentially the culmination of all the G20 processes and meetings held throughout the year in cities across the host country, among ministers, govt officials, and civil society members and organisations.



Structure of G20

The G20 works in three major tracks — two of them are official and one is unofficial. The official tracks are the Finance Track and the Sherpa Track. The unofficial track includes engagement groups or civil society groups.

Finance Track



- The Finance Track is headed by the finance ministers and central bank governors, who usually meet four times a year, with two meetings being held on the sidelines of the World Bank and International Monetary Fund (IMF) meetings.
- It mainly focuses on fiscal and monetary policy issues such as the global economy, infrastructure, financial regulation, financial inclusion, international financial architecture, and international taxation.
- The Finance Track has eight working groups. They include Framework Working Group, International Financial Architecture Working Group, Infrastructure Working Group, Sustainable Finance Working Group, Global Partnership for Financial Inclusion, Joint Finance and Health Task Force, International taxation Issues, and Financial Sector Issues.

Sherpa Track

- The Sherpa Track was established after the forum became a leaders' summit in 2008. It consists of representatives of heads of state, and it focuses on socio-economic issues such as agriculture, anticorruption, climate, digital economy, education, employment, energy, environment, health, tourism, trade, and investment.
- Each representative is known as a Sherpa it is the metaphor from the mountaineering domain, where the Sherpa is supposed to do the heavy lifting or assist the mountaineer. There are 13 working groups within the Sherpa Track.
- They are: Agriculture Working Group, Anti-corruption Working Group, Culture Working Group, Development Working Group, Digital Economy Working Group, Disaster Risk Reduction Working Group, Education Working Group, Employment Working Group, Energy Transitions Working Group, Environment and Climate Sustainability Working Group, Health Working Group, Tourism Working Group, and Trade and Investment Working Group.

Engagement Groups



- The unofficial track comprises engagement or civil groups. These groups often draft recommendations to the G20 Leaders that contribute to the policy-making process.
- The engagement groups are as follows: Business20, Civil20, Labour20, Parliament20, Science20, SAI20, Startup20, Think20, Urban20, Women20, and Youth20.

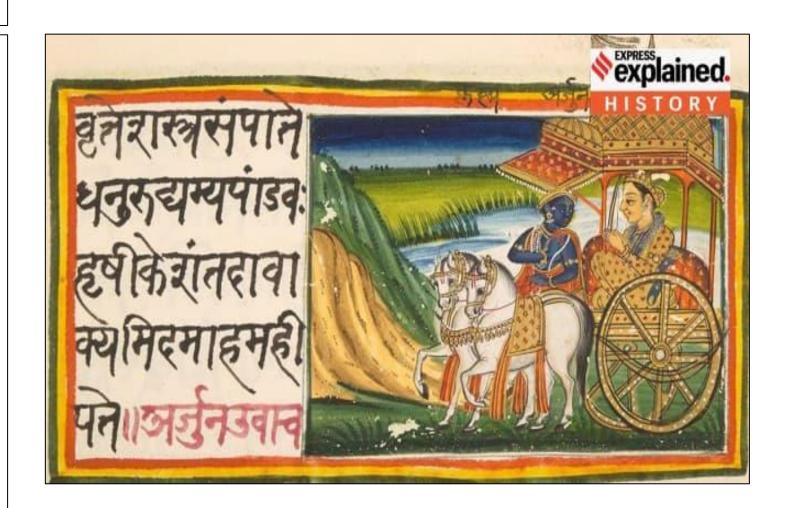
Sanatan Dharma's concept, roots and the historical context of its use



Relevance: Prelims & Mains Paper I; History & Culture

Why in news?

- Sanatan Dharma, equated by DMK leader Udhayanidhi Stalin to "mosquitoes, dengue, malaria, and corona", is often seen as being synonymous with Hinduism.
- Several BJP leaders have expressed outrage, describing Udhayanidhi's statement as an attack on "our religion".



Etymology and roots of Sanatan Dharma

- Sanatan Dharma is a Sanskrit term that can be translated variously as "eternal religion" or "eternal law", "unshakeable, venerable order", or "ancient and continuing guideline".
- As per a prominent mythologist and author, the word "sanatan", meaning eternal, does not appear in the Vedas. It started being used in the Bhagavad Gita, and refers to knowledge of the soul, which is eternal," He adds that Sanatan Dharma refers to eternal religions which believe in soul and rebirth.
- As per another expert, the term 'Sanatan Dharma' was used in the Gita by Arjuna, when he told Krishna that "when the clan is vitiated, the sanatan-dharmas of the clan are destroyed".
- A similar term was used by Draupadi when the onlookers did not speak up on her behalf.
- Although the term is most commonly associated with Hinduism, it is also used by Jains and Buddhists because these religions also believe in rebirth.
- It is only more recently, particularly since the late 19th century, that Sanatan Dharma has been used to signify Hinduism as a religion, distinct from other religions. It is used to evoke a certain homogeneity in Hinduism, without specifying how exactly that homogeneity is constituted.



Sanatan Dharma in the 19th century



- The term Sanatana Dharma gained popularity in the late 19th century with the emergence of various sabhas designed to promote Sanatan Dharma.
- The Sanatan Dharma at that time came to be understood most popularly as a signifier of Hindu orthodoxy that was a reaction to the reform movements being carried out by missionaries and reformers such as the Brahmo Samaj and Arya Samaj. This is believed to be a political necessity of the period. In Punjab, for instance, modern Sanatanist movements trace their growth to the career of Pandit Shraddha Ram. It is believed that when Dayanand Saraswati, the founder of the Arya Samaj, toured Punjab in his efforts to reform Hinduism, Shraddha Ram followed in his wake to strengthen the forces of orthodoxy.
- Similarly, in the Punjab of the 1890s, Pandit Din Dayal Sharma began defending certain religious practices such as murti puja or idol worship against the teachings of the Arya Samaj and established an organisation called 'Sanatan Dharm Sabha'.
- The national organisation, 'Bharat Dharma Mahamandal' that also came up during this period stated as its first objective, "to promote Hindu religious education in accordance with the Sanatana Dharma". The term was also used by the Hindu Mahasabha to refer to the Hindu religion.
- The idea that Sanatan Dharma was Hindu orthodoxy, and that it was in opposition to reform was entrenched in the social identities of late 19th century India. In the Punjab Census Report of 1891, the Census Superintendent had noted the tendency of orthodox Hindus to record themselves as "sanatan dharmis".

Toyota showcases flex-fuel prototype



Relevance: Prelims & Mains Paper III; Environment

Why in news?

- Toyota recently unveiled a prototype of the Innova Hycross with a flex-fuel hybrid powertrain, its first car in India with this option, and one that the Japanese carmaker claims is the world's first BS6 Stage II-compliant flex-fuel vehicle.
- Toyota had displayed an imported Corolla flex-fuel hybrid sedan as a pilot project late last year. The pilot was initiated as part of a govt-led push to commercially deploy this technology, which is already in use in markets such as Brazil, Canada, and the United States.



Hycross prototype

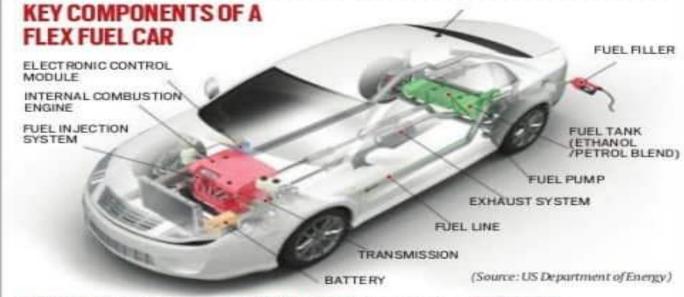


- The Hycross flex-fuel prototype has a 2-litre Atkinson Cycle petrol engine coupled with an electric motor, the same as in the hybrid version of the standard Hycross.
- Toyota claims the prototype can run on petrol with more than 20% ethanol blending that is currently mandated in India, and that its performance would be at par with the standard Hycross hybrid, even with ethanol-blended petrol. It adds that this car will achieve low carbon emissions "on a comprehensive well-to-wheel basis". Like the standard strong hybrid variant, the Hycross flex-fuel prototype would run 60% of the time in the electric vehicle mode using energy stored in the battery pack.
- A flex-fuel vehicle typically has an internal combustion engine (ICE), but unlike a regular petrol vehicle, it can run on more than one type of fuel, or a mixture of these fuels.
- The most common versions use a blend of petrol and ethanol or methanol. Flex-fuel vehicles such as the prototype Hycross can run on blends of ethanol that are far higher than the current standard 20% mix (E20). This is made possible by equipping the engine with a fuel mix sensor and an engine control module (ECM) programming that senses and automatically adjusts for any ratio of designated fuels.
- The flex engines push is part of the govt's broader strategy to cut dependence on imported crude in the medium-to-long run.

How these cars work?

- Most components in a flex fuel vehicle are the same as those in petrol-only cars. But some special ethanol-compatible components are required to adjust to the different chemical properties and energy content in ethanol/methanol, such as modifications to the fuel pump and fuel injection system.
- The ECM is also calibrated to accommodate the higher oxygen content of ethanol. The hybrid engine of the type used in the Toyota Hycross would have separate spark plugs, piston ring tops, and valves to render them more corrosion-resistant, and a modified catalyst in the exhaust system to lower hydrocarbon emissions.
- The vehicle's fuel filter and fuel lines have also been tweaked. As of 2018, there were more than 21 million flex-fuel vehicles in the US, but Brazil was the biggest market and leader in this segment.





BATTERY: The battery provides electricity to start the engine and power vehicle electronics/ accessories

MODULE (ECM): The ECM controls the fuel mixture, ignition timing, and emissions system; monitors the operation of the vehicle

exhaust system directs the exhaust system directs the exhaust gases from the engine out through the tailpipe. A three-way catalyst is designed to reduce engine-out emissions within the exhaust system

FUEL FILLER: Anozzle from a fuel dispenser attaches to the receptacle on the vehicle to fill the tank

FUELINJECTION SYSTEM:

This system introduces fuel into the engine's combustion chambers for ignition

FUELLINE: A metal tube or flexible hose that transfers fuel from the tank to the engine's fuel injection system

FUEL PUMP: A pump that transfers fuel from the tank to the engine's fuel injection system via the fuel line FUEL TANK (ETHANOL/PETROL BLEND): Stores fuel on board the vehicle to power the engine

INTERNAL COMBUSTION

ENGINE: Fuel is injected into either the intake manifold or the combustion chamber, where it is combined with air, and the air/fuel mixture is ignited by the spark from a spark plug

TRANSMISSION: The transmission transfers mechanical power from the engine and/or electric traction motor to drive the wheels

Flex pros and cons



- The use of ethanol blending sharply lowers harmful pollutants such as carbon monoxide, sulphur, and carbon and nitrogen oxides. Blending will also help cut oil imports to fuel vehicles. However, flex-fuel cars typically take a 4-8% hit on fuel efficiency when using ethanol for motive power.
- So, while fuel economy is generally lower with increased levels of ethanol, many flex fuel vehicles have improved acceleration performance when operating on higher ethanol blends. Another problem with ethanol blending is that source crops such as sugarcane are usually very water-intensive.
- In 2019-20, more than 90% of the ethanol produced in the country came from sugarcane, which is also a politically important crop in states such as Maharashtra and Uttar Pradesh.
- The National Biofuel Policy 2018 envisages a 2025 target of 20% blending. Countries such as Brazil can be flexible on the degree of the mix depending on crude prices, varying it when energy prices rise like they did after the Ukraine war.
- In Brazil, nearly all cars are required to be able to handle fuel blends with a minimum of 22% ethanol, and the state-owned oil company Petrobras is mandated to buy ethanol and dispense the mix at retail pumps.
- As a result, almost no light vehicle in Brazil runs on pure petrol. There is also a govt subsidy to narrow the price gap of higher ethanol blends, in order to make the proposition viable. This is a factor that would have to be considered as India steps up its fuel blending plan.

Blending advantages

- The ethanol mix in petrol in India went up from 1.53% in 2013-14 to 11.5% in March 2023. This has helped cut the oil import bill by an estimated Rs 41,500 crore in the last eight years.
- The expected implementation of E20 by April 2025 is estimated to result in annual savings of Rs 35,000 crore in India's oil import bill.
- To overcome the challenges of lower fuel efficiency of flex-fuel vehicles, electrified flex-fuel vehicles are being introduced, which offer the advantages of both a flex-fuel engine and an electric powertrain, as in the case with the Hycross prototype.





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