

Rescuers set 100-hour vertical drilling target

Official says the target of drilling through 86 metres of mountain can be achieved on time if no hurdles come in the way; authorities worry over the forecast of snowfall and rainfall in Uttarkashi today which could further complicate rescue operations; work on to extricate the auger machine used for horizontal drilling that is stuck amid pipes

Ishita Mishra
SILKYARA

With horizontal drilling to rescue 41 workers trapped in the Silkyara tunnel in Uttarkashi stuck for the third consecutive day, rescuers began vertical drilling above the tunnel, completing nearly 19.5 metres of boring on Sunday.

The teams have set a target of drilling through 86 metres of mountain vertically in 100 hours, if there are no unexpected hurdles.

Briefing presspersons as the rescue operation entered the 15th day, Mahmood Ahmed, Additional Secretary (Technical, Road and Transport), said there could be a need to change the "needle" or the head of the drilling machine after a

point of time and arrangements for it were already in place.

"We should not give targets any more but at the pace with which vertical drilling is going on, I can say we will complete it in 100 hours if no hurdle comes our way," he added.

'Easy at first'

One of the rescuers told *The Hindu* that "the initial few metres will be easier to drill but it will be a challenge when the drilling machine hits the crust [outermost part] of the tunnel".

If this process is completed smoothly, the workers will be taken out in buckets through the vertical hole being bored, he said.

The attention of the authorities shifted to vertical boring when plans to restart the horizontal drill-



Fingers crossed: The earth-boring machine drilling a vertical hole into the Silkyara tunnel. AFP

ing process yet again failed, with workers struggling to retrieve the broken parts of the U.S.-made auger machine, which is stuck

amid the pipes since Friday night. When the machine is completely extricated, rescuers are likely to commence manual hori-

zontal drilling to reach the workers, who are trapped behind 10-12 metres of debris.

In another challenge for

the rescue teams, the India Meteorological Department has predicted snowfall and rainfall in Uttarkashi district on Monday, which is located at an altitude of 3,500 metres above sea level.

The weather will further complicate the operation for the rescuers who are already braving difficult conditions including hilly terrain.

'Arrangements in place'

The NDMA and SDRF officials said that arrangements had been made to tackle the situation as workers at the site are afraid that rainfall will hamper the work.

The Indian Army too has stepped in for the rescue operation.

In Delhi, National Disaster Management Authority (NDMA) member Lieutenant-General Syed Ata Has-

nain said that a unit of Madras Sappers, part of the Corps of Engineers of the Army, will now help in the operations.

"For manual drilling, the Indian Army along with other rescuers will do rat-boring inside the tunnel. They will dig out the debris from inside the tunnel with hands, hammers and chisels and then a pipe will be pushed forward from the platform built inside the pipe," he added.

The NDMA member added that the horizontal drilling from the Barkot side of the tunnel also moved a little on Sunday with rescue teams covering a little over 10 metres after the fifth blast which was done inside the tunnel. The perpendicular drilling by the RVNL is yet to start but machines for the same are on their way.

SC has always been the 'people's court', do not hesitate to appeal, says CJI on Constitution Day

Krishnadas Rajagopal
NEW DELHI

Chief Justice of India D.Y. Chandrachud on Sunday said it was the solemn duty of the current generation to keep afloat the idea of India powered by a Constitution based on the principles of individual liberty, equality, and fraternity.

"When we say today 'we honour the adoption of the Constitution', first and foremost, we honour the fact that the Constitution 'exists' and that the Constitution 'works'," the Chief Justice said in his address at the Supreme Court during the Constitution Day celebrations.

The Chief Justice's words are significant as both the Constitution and the Supreme Court are entering the 75th year of their adoption and founding,



CJI D.Y. Chandrachud and President Droupadi Murmu with others at the Supreme Court of India, in New Delhi on Sunday. ANI

respectively. The Chief Justice said the common man should not fear approaching courts.

The courts were an extension of constitutional governance. For the past seven decades, the Supreme Court had acted as a "people's court". Thousands of citizens had approached its door with the faith that they would get

justice through this institution, the Chief Justice said.

'Unique court'

Citizens, no matter who they are or where they come from, can simply write to the Chief Justice of India to set into motion the constitutional machinery of the Supreme Court to get justice. In this way, the Supreme Court of India

Murmu bats for creating all-India judicial service

NEW DELHI

President Droupadi Murmu on Sunday batted for the setting up of an all-India judicial service as a way to ensure equal representation of India's diversity in the judiciary.

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was unique, he added.

"Citizens came to the court to seek protection of their personal liberty, accountability against unlawful arrest, protection of rights of bonded labourers, asking for guidelines to prevent sexual harassment at workplace, prevention of social evils such as manual scavenging, even hoping for interference to get

clean air, food security, and so many more instances that cannot be summarised in few minutes. These cases are not just citations or statistics for the court. These cases resemble the expectations of the people from the Supreme Court, as well as the court's own commitment to deliver justice to the citizens," Chief Justice Chandrachud said.

Accessible to all

The Chief Justice said the focus of the court has been on making its work accessible to all free of cost.

Besides live-streaming proceedings so that citizens know what is happening inside courtrooms, the Chief Justice said 36,068 of its judgments, as of November 25, 2023, are available for free on e-Supreme Court Reports (e-SCR) platform of the court.

In Iran, Foreign Secretary Kwatra discusses Gaza conflict, Chabahar port

Suhasini Haidar
NEW DELHI

The Israel-Hamas conflict and India's investment in the Chabahar port developments were at the top of the agenda as Foreign Secretary Vinay Kwatra led a delegation in Tehran for foreign office consultations (FOC) with the Iranian government on Sunday.

According to officials, the talks were part of routine bilateral meetings between the two countries, but a detailed discussion on the West Asian situation also took place.

A temporary ceasefire in place in the Gaza conflict as part of a deal to exchange Israeli hostages held by Hamas and Palestinian prisoners held by

Israel.

The talks come following Prime Minister Narendra Modi's call at the G-20 summit on November 22 for nations to "ensure" that the conflict does not "spill over" to the region, and the hijack of an India-bound ship linked to Israel last week by Yemeni Houthi fighters in the Red Sea.

"The two sides reviewed the entire gamut of bilateral relationship, including connectivity projects such as Chabahar port, political engagements, trade & economic matters, cultural exchanges, people-to-people ties, agriculture cooperation, and capacity building initiatives," the External Affairs Ministry said in a

statement about the India-Iran talks, adding that they also discussed "regional and global issues, including developments in Afghanistan and Gaza".

More than 13,000 people have been killed in Israeli bombardment of Gaza following the October 7 terror strikes by Hamas in which 1,200 Israelis were killed and 245 taken hostage.

Israeli leaders have accused Iran of "orchestrating" the attacks, suggesting that they were meant to derail the normalisation of ties between Israel and Saudi Arabia, and other Gulf countries, charges Iran has denied.

The U.S. Ambassador to India, Eric Garcetti, also said last week that trade



Foreign Secretary Vinay Kwatra with Iran Deputy Foreign Minister for Political Affairs Ali Bagheri Kani. X/ARINDAM BAGCHI

and connectivity initiatives in the region like I2U2 (Israel-India-UAE-U.S.) and the India-Middle East-Europe-Economic Corridor (IMEC) launched during

the G-20 summit could see a "pause" due to the Israel-Hamas conflict, although in the long-term, the logic of these engagements would prevail.

During the talks, India and Iran discussed their own regional connectivity initiatives, including the Chabahar project where India is developing a cargo terminal in order to connect trade to Afghanistan and Central Asia, and which is also part of the International North-South Transport Corridor (INSTC) to Central Asia and Russia via rail.

Apart from the FOC talks with Ali Bagheri Kani, the Iranian Deputy Foreign Minister for Political Affairs, Mr. Kwatra, who was accompanied by Joint Se-

cretary J.P. Singh and Indian Ambassador to Iran Gaurav Shreshth, also met Iran's Foreign Minister Hossein Amir-Abdollahian, where they discussed "current challenges" in the region.

"Discussions focused on concretising India's engagement in development of Chabahar port as a connectivity project. Avenues of increasing broader trade and investment ties were also reviewed," the External Affairs Ministry said about the Foreign Secretary's meeting with Deputy Foreign Minister for Economic Diplomacy Mehdi Safari.

Mr. Kwatra's visit followed a telephone call between Mr. Modi and Iranian President Ebrahim Raisi on

November 6, where they discussed the situation in Gaza, and Mr. Raisi called on India to "use all its capacities to end [Israeli] crimes against the oppressed people of Gaza".

Mr. Raisi also took part in the Voice of Global South Summit on November 17 chaired by Mr. Modi, and the Ministry said that during Mr. Kwatra's visit the Indian side "appreciated Iran's participation" in both such summits held this year. Since the violence began, India has not called for a ceasefire.

India abstained from a UN General Assembly resolution that called on Israel to stop the bombardment of Gaza. Most countries in the Global South had voted in favour of the resolution.

Modi to take part in World Climate Action Summit in Dubai this week

The summit is a 'high-level' segment of 28th UN Climate Change Conference, being held under the Presidency of the UAE; a key feature of the event will be the conclusion of the Global Stocktake, a reckoning of actions taken by each country

The Hindu Bureau
NEW DELHI

Prime Minister Narendra Modi will attend the World Climate Action Summit (WCAS) in Dubai during the 28th Conference of Parties (CoP-28), the Ministry of External Affairs confirmed on Sunday.

Mr. Modi will be present on November 30 and December 1 as part of the WCAS proceedings. CoP-28 is being held from November 28 to December 12, under the Presidency of the UAE.

At this event, also called the "high-level segment", world leaders or their representatives are expected to make statements on behalf of their countries outlining their intent and contribution to stemming greenhouse gas emissions. There is no official confir-



At the 26th edition of the CoP in Glasgow, Scotland in 2021, Prime Minister Narendra Modi announced five specific targets. FILE PHOTO

mation yet if the Prime Minister will make a statement.

The Hindu reported on November 10 about Mr. Modi's likely presence for the global event.

The annual climate conference is the most high-profile summit to discuss the challenges posed by climate change and the roles

and responsibilities of the world's governments in addressing it.

India's targets

In 2021, at the 26th edition of the CoP in Glasgow, Scotland, Mr. Modi had announced five specific targets, titled *Panchamrit*, as part of India's climate action plan. These consisted

of committing India to be "net zero", or carbon neutral by 2070; committing at least 500 gigawatts of energy installations by 2030 to be from non-fossil sources; cutting carbon emissions by a billion tonnes, reducing the carbon-intensity of the economy by 45%; and meeting half of its energy requirements from renewable energy by 2030. Many of these goals are inter-related.

A key feature of the forthcoming CoP summit in Dubai will be the conclusion of the Global Stocktake, a first ever reckoning of the actions taken by each country towards achieving targets set at the CoP in Paris in 2015. This was to take steps to keep the globe's average temperature from rising above 2 degrees Celsius and "as far as possible" 1.5 degrees Celsius by the end of the

century.

A spate of recent research reports show that actions collectively promised by countries so far, will see temperatures surge past the 2 degrees Celsius mark.

Climate change was a key priority area of India's G-20 Presidency, the New Delhi Leaders Declaration said this September, committing these countries to "tripling" installed renewable energy capacity sources by 2030.

"CoP-28 will provide an opportunity to take forward these successes," the Ministry of External Affairs added.

During his visit, the Prime Minister will also hold bilateral meetings with other world leaders who will be part of proceedings in Dubai, though these details were not shared.

Supply-demand gap for pulses, oilseeds, fruit to persist over the next seven years: report

Vikas Dhoot
NEW DELHI

Price spikes in pulses this year may have been spurred by dented production prospects amid an uneven monsoon, but India's output shortfalls vis-a-vis demand for the key protein source and edible oils and fruits are expected to persist or even widen over the next seven years, says a new research report by agricultural economists.

Food deficits compel reliance on imports and raise the food import bill in the long run, cautioned the research report on "Prospects of India's demand and supply for agricultural commodities towards 2030", published by the National Bank for Agriculture and Rural Development (NABARD) and the Indian Council for Research on International Economic Relations.

"Commodities like oilseed, pulses, and fruits are expected to experience a supply and demand gap in the coming years. Therefore, there is a need to in-

Output shortage

The table shows the gap between projected demand and supply (in million tonnes) for 2025-26 and 2030-31

Food Items	2025-26	2030-31	Food Items	2025-26	2030-31
Rice	25.5	37.7	Foodgrains	42	70
Wheat	15.4	25.5	Oilseeds	-3	-6
Coarse cereals	3.2	6.4	Milk	31.7	76.2
Cereals	44.2	69.6	Fruits	4	10.6
Pulses	-2.1	0.4	Vegetables	8.3	18.4

SOURCE: NABARD AND ICRIER

crease the level of production and productivity of oilseeds, pulses, and fruits since their demand in the future shows an increasing trend," the report's authors, Ashok Gulati and Shyma Jose, said.

As per capita incomes rise, the consumption basket of people tends to diversify towards nutritious and high-valued commodities, including fruits and vegetables and dairy products and away from staples such as rice and cereals, the report noted. So demand growth for non-cereals and high-valued commodities is expected to exceed the population

growth rate and cereal commodities' growth in coming years, they argued.

The report assumes significance as recurrent high food inflation spells, as seen this year, cramp the room for monetary and fiscal policies to promote economic growth.

Three-year low

Output of pulses, some coarse cereals and groundnut oil seeds could hit a three-year low this Kharif season, as per initial independent estimates for crop output. Retail inflation in pulses accelerated sharply to 18.8% last month, while inflation in fruits picked up

to hit 9.34%. Edible oils have witnessed deflation through most of this year, as their prices had surged sharply last year after the Ukraine conflict erupted.

Oil seeds production is expected to rise to 35 million to 40 million tonnes (MT) by 2030-31.

"Notably, the deficit of oilseeds in the food balance sheet in 2030 is worrisome for the country given the edible oil imports as high as 13.4 MT during 2020-21. A technological breakthrough in oilseeds to increase productivity or area expansion are two possible solutions to improve oilseeds' balance sheet in the long run," the report reckoned.

The report reiterated the recommendation of a 2012 report from the Commission for Agricultural Costs and Prices (CACP) to raise the import duty whenever the import price of crude palm oil falls below \$800 a tonne to protect Indian producers.

However, it also added that attaining self-reliance in water-intensive and

long-gestation crops such as oil palm may not be worth pursuing as a sustainable goal either.

Mr. Gulati, who headed the CACP and is now a distinguished professor at ICRIER, and Ms. Jose, a research fellow at the think tank, projected demand for different farm produce up to 2030-31 based on three alternative growth scenarios that assumed per capita income (PCY) growth ranging from 4.1% to 6.1%. Supply-side estimations were done by assuming that trends will persist in line with those in the last 10 years (prior to 2020-21) or over the previous 15 years.

The report has called for policy attention to ensure a balance between domestic production and the absorption of these commodities, diversification towards high-value commodities that require major investments in market infrastructure, processing, and cold storage and warehousing facilities to build an efficient and reliable value chain.

Far-right turn

The rising tide of ethno-nationalist politics in Europe is worrying

The victory of Geert Wilders, a far-right, anti-Islam populist, in the parliamentary elections has put the Netherlands, long seen as one of the most socially liberal countries in Europe, at a crossroads. According to the preliminary results, Mr. Wilders's Party for Freedom (PVV) has emerged as the single largest party with 37 seats in the 150-member lower house. The Labour-Green coalition won 25 seats, while the incumbent People's Party for Freedom and Democracy (VVD) secured 24. While the PVV is far from the 76 seats needed for a majority, its formidable performance (it won three more seats than what the VVD won in the last elections) puts Mr. Wilders in a position to start coalition talks and on a potential path towards becoming the country's first far-right Prime Minister. Over the years, Mr. Wilders has built an image of himself as one of the most radical far-right populists in Europe. He has called for "de-Islamising" the Netherlands, shutting down mosques, banning the Koran, and closing the borders to migrants from Muslim-majority countries. He made the influx of migrants a strong political issue during the campaign, which appears to have helped him deal the greatest blow to the political establishment.

The PVV's victory is neither surprising nor isolated. Mr. Wilders, a member of the House of Representatives since 1998, split from the conservative VVD in 2004 to form the PVV. Since then, he has been pushing his brand of populism in Dutch politics. In the past, the VVD, led by outgoing Prime Minister Mark Rutte, avoided tying up with the PVV because of the latter's controversial views. But by grabbing the highest number of seats in the House, the PVV has now placed itself at the centre of Dutch politics. It is not certain whether Mr. Wilders will be able to put together a governing coalition. But even if he is kept out of power, the leader of the largest party in Parliament cannot be ignored. His rise is in line with the rise of far-right parties and populists across Europe. In France, Marine Le Pen finished a close second in the 2022 presidential elections. In Italy, a party with neo-fascist origins is in power. In Germany, the AfD, which has neo-Nazi roots, is the second most popular party. This should be a wake-up call for the establishment parties in the West. The far-right is using the immigration and the cost-of-living crises to mobilise the public under its exclusive, ethno-nationalist brand of politics, while the political centre is struggling to hold. Establishment parties should have a clear economic agenda and political vision to arrest the rising tide of far-right politics, which echoes Europe's dangerous and not-so-distant past.

Femicides at a twenty-year peak across globe

In India, dowry-related reasons continue to be the leading cause of femicide

DATA POINT

The Hindu Data Team
CHENNAI

About 88,900 women and girls were intentionally killed worldwide on the grounds of gender-related factors in 2022, a recent study from the United Nations Office on Drugs and Crime (UNODC) and UN Women shows. This is the highest number of such fatalities in a year, in the past 20 years. **Chart 1** shows the year-wise murder of women/girls (femicide) across the globe for gender-related reasons.

The UN study titled "Gender-related killings of women and girls (femicide/feminicide)", published in November, also showed that while the total number of homicides worldwide decreased in 2022, femicide increased.

In general, victims of homicides worldwide tend to be men or boys. As shown in **Chart 2**, men formed 80% of the total victims of homicide in 2022, while women's share was 20%. When the data is examined based on the perpetrators of these murders, a significant disparity becomes evident between female and male victims. Women are more likely to be murdered by their partners or someone known to them. This extends from the fact that women are subjected to physical violence mostly from their immediate family members.

Chart 3 shows that of the 88,900 female victims of homicides in 2022, 48,800 or 55% were killed by family members or intimate partners. Only 12% of male homicide victims were killed by persons known to them.

This trend of women being more vulnerable to gender-related violence by family is prevalent across the globe. **Chart 4** shows the continent-wise split of the share of intimate partner/family-related homicides among all female and male homicides. Across all regions, the share of such hom-

icides among women in which perpetrators are known was higher than in the case of men. For instance, in over half the female homicides in Europe, the perpetrators are partners or related to the victims, whereas among men the share was only 18%. In the Americas, too, the disparity showed (45% among women homicides and 12% among men homicides).

In 2022, there were about 20,000 female victims of intimate partner/family-related homicide in Africa, the highest among continents. The African continent exceeded Asia in femicides for the first time in 13 years. In Asia, 18,400 women were killed by their families during the same period. Notably, while the Americas reported 7,900 such cases, the rate of such femicides per 100,000 female population was 1.5, making it the second-highest after Africa, which had a rate of 2.8. Asia's rate was 0.8.

Data also suggests that there was a general trend of reduction in gender-related killings of women before 2021, though it increased drastically in 2021 and 2022, especially in Africa.

According to three national studies conducted in South Africa across 18 years, the female intimate partner homicide rate halved between 1999 and 2017. But in recent years, the rate increased from 9 victims per 1 lakh women in 2019 to 12.7 victims per 1 lakh women at the end of 2022.

There has been a small decline in gender-based killings in India over the past decade. That said, the killing of women due to dowry-related reasons, accusations of witchcraft and other gender-related factors still persists.

Chart 5 shows the number of gender-related deaths in India between 2016-2021 and the reasons behind it. Dowry has consistently been the leading cause, while honour killings and murder related to witchcraft accusations, formed a small share too during this period.

Women in the cross hairs

The data for the charts were sourced from the report titled, "Gender-related killings of women and girls (femicide/feminicide)" published by the United Nations Office on Drugs and Crime (UNODC) and UN Women



Chart 1: The chart shows the year-wise intentional murder of women/girls across the globe for gender-related reasons

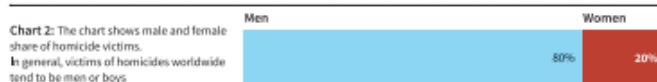


Chart 2: The chart shows the share of intimate partner/family-related homicides among all female and male homicides

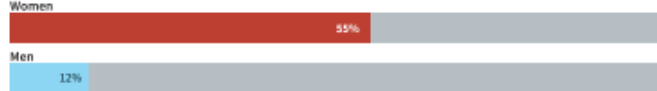


Chart 3: The chart shows the continent-wise split of the share of intimate partner/family-related homicides among all female and male homicides

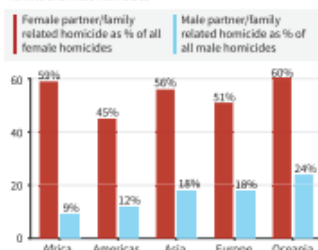


Chart 4: The chart shows the number of gender-related deaths in India between 2016-2021 and the reasons behind it

Why is Bihar demanding the Special Category Status?

What are the benefits which come with the title? What did the Raghuram Rajan Committee suggest?

Kartik Singh

The story so far:

In November 22, the Chief Minister Nitish Kumar-led Cabinet passed a resolution seeking the grant of special category status (SCS) to Bihar. The demand comes in the backdrop of the findings from the "Bihar Caste-based Survey, 2022", which revealed that nearly one-third of Bihar's population continues to live in poverty.

What is a special category status?

It is a classification granted by the Centre to assist the development of States that face geographical or socio-economic disadvantages. The SCS was introduced in 1969 on the recommendation of the fifth Finance Commission (FC). Five factors such as (i) hilly and difficult terrain (ii) low population density and/or sizeable share of tribal population (iii) strategic location along international borders (iv) economic and infrastructural backwardness and (v)

non-viable nature of state finances, are considered before granting SCS. In 1969, three States – Jammu & Kashmir, Assam and Nagaland – were granted the SCS. Subsequently, eight more States including Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura, Himachal Pradesh, and Uttarakhand were given the SCS by the erstwhile National Development Council.

What are the benefits attached?

The SCS States used to receive grants based on the Gadgil-Mukherjee formula, which earmarked nearly 30% of the total central assistance for States to the SCS States. However, after the abolition of the Planning Commission and the recommendations of the 14th and 15th FC, this assistance to SCS States has been subsumed in an increased devolution of the divisible pool funds for all States (increased to 41% in the 15th FC from 32%). Additionally, in the SCS States, the Centre-State funding of centrally sponsored schemes is divided in the ratio

of 90:10, far more favourable than the 60:40 or 80:20 splits for the general category States. Besides, there are several other incentives available to the SCS States in the form of concession in customs and excise duties, income tax rates and corporate tax rates to attract investments to set up new industries etc.

Why is Bihar demanding the SCS?

The demand for SCS for Bihar has been made by various political parties of the State time and again. The poverty and backwardness of the State are argued to be because of the lack of natural resources, continuous supply of water for irrigation, regular floods in the northern region and severe droughts in the southern part of the State. Simultaneously, the bifurcation of the State led to the shifting of industries to Jharkhand and created a dearth of employment and investment opportunities. With a per-capita GDP of around ₹54,000, Bihar has consistently been one of the poorest States.

Highlighting the same in his fresh demand for SCS, CM Nitish Kumar, said that the State is home to around 94 lakh poor families and the granting of SCS will help the government get about ₹2.5 lakh crore required to fund various welfare measures over the next five years.

Do other States also want SCS?

Since its bifurcation in 2014, Andhra Pradesh has asked for a grant of SCS on the grounds of revenue loss due to Hyderabad going to Telangana. Additionally, Odisha has also been requesting for the SCS, highlighting its vulnerability to natural calamities such as cyclones and a large tribal population (nearly 22%). However, the Central government citing the 14th FC report, which made a recommendation to the Centre that no State be accorded the SCS, has repeatedly denied their demands.

Is Bihar's demand justified?

Although Bihar meets most of the criteria for the grant of SCS, it does not fulfil the requirement of hilly terrain and geographically difficult areas, which is considered to be the primary reason for difficulty in infrastructural development. In 2013, the Raghuram Rajan Committee set up by the Centre, placed Bihar in the "least developed category" and suggested a new methodology based on a 'multi-dimensional index' for devolving funds instead of a SCS, which can be revisited to address the State's backwardness.

The writer reads law at RGNUL, Punjab.

DAOs: how these decentralised entities are shaping the future of the digital world

The idea behind Decentralised Autonomous Organisations is to create self-sustaining, community-driven entities governed by smart contracts on blockchain networks. However, the legality and regulatory framework surrounding DAOs remain a topic of debate

Sanhita Chauriha

Decentralised Autonomous Organisations (DAOs) represent a groundbreaking innovation at the intersection of blockchain technology and governance. These digital entities operate without centralised control and are governed by smart contracts and the consensus of their members, often utilising cryptocurrencies as a means of decision-making and resource allocation. DAOs have garnered attention for their potential to change various industries, including finance, art, and governance, by fostering transparent, democratic, and self-executing systems. These entities are not only reshaping traditional business structures but also challenging the way we perceive trust, governance, and collaboration in the digital world.

The genesis of DAOs

DAO is an organisation represented by rules encoded as a computer program that is transparent, controlled by the respective organisation members, and not influenced by a government. The idea behind DAOs is to create self-sustaining, community-driven entities governed by smart contracts on blockchain networks. These smart contracts automatically execute predefined rules without the need for intermediaries, ensuring trust through code rather than traditional authorities. One of the most important aspects of DAOs is their potential to change the idea of collaboration. They enable global, borderless cooperation on an unprecedented scale. Participants, often referred to as token holders, can propose and vote on decisions related to the organisation's goals and resources. This decentralised decision-making process ensures that no single entity holds undue influence.

The various use cases

DAOs are already making their mark across diverse industries. In the realm of decentralised finance, platforms like Compound and MakerDAO have

introduced lending and borrowing services, enabling users to participate in the global financial ecosystem without relying on traditional banks. In the art world, artists are tokenising their creations and utilising DAOs to manage royalties and maintain control over their intellectual property.

Supply chain management is another arena where DAOs are gaining traction, as they offer transparency and traceability in global supply chains, ensuring the authenticity and quality of products. Even in the governance of online communities, DAOs have emerged as tools for decision-making, with platforms like DAOstack facilitating decentralised governance structures for internet communities. These examples showcase the versatility of DAOs, demonstrating their potential to reshape industries across various sectors.

Implications for the digital world

DAOs are ushering in a transformation in the digital world by embodying several key principles. Firstly, they are decentralising entities, shifting power away from centralised authorities and placing it firmly in the hands of the collective. Decision-making within DAOs becomes a democratic process, where token holders have a direct say, resulting in a more equitable distribution of influence. For instance, in a DAO governed community-driven project, contributors worldwide can participate in shaping its direction, diminishing the dominance of a single central entity.

Secondly, transparency and trust are fundamental tenets of DAOs. Smart contracts that underpin DAO operations are transparent and immutable, fostering trust among participants. Rules are predefined and require consensus for alteration, minimising the need for intermediaries. This transparency can potentially disrupt traditional industries by eliminating the opacity often associated with centralised organisations.

Thirdly, DAOs champion inclusivity, democratising access to resources and opportunities. They transcend

geographical and socio-economic barriers, enabling global participation. This inclusivity not only promotes diversity but also fuels innovation, as individuals from various backgrounds collaborate to create innovative solutions.

Lastly, DAOs inspire new forms of collaboration. They facilitate global cooperation, allowing participants with shared goals to unite without the need for intermediaries. This dynamic environment fosters innovation and cooperation as ideas flow freely, unencumbered by hierarchical structures. Together, these principles underscore the transformative potential of DAOs, paving the way for a more decentralised, equitable, and collaborative digital future.

The challenges and controversies

The journey of DAOs has not been without hurdles. The infamous DAO hack in 2016 exposed vulnerabilities in the code, leading to a contentious hard fork (a hard fork refers to a change in a network's protocol that makes previously invalid blocks and transactions valid, or vice-versa) in the Ethereum blockchain. This incident highlighted the need for rigorous security audits and raised questions about the immutability of blockchain systems.

Moreover, the legality and regulatory framework surrounding DAOs remain a topic of debate. Traditional legal systems are still catching up with the decentralised nature of these entities, leaving room for uncertainty in many jurisdictions.

Regulatory uncertainty looms large as jurisdictions grapple with classifying and regulating these decentralised entities. DAO tokens, often representing ownership or participation, can potentially be considered securities, subjecting them to complex regulatory requirements and compliance challenges. Legal liability within DAOs remains elusive, with decentralised decision-making and automated smart contracts making it difficult to assign responsibility for actions taken. Issues like smart contract

vulnerabilities and security breaches introduce questions of legal recourse and liability. Taxation of transactions within DAOs, identity verification, and compliance with Anti-Money Laundering (AML) and Know Your Customer (KYC) regulations further add layers of complexity to the legal framework. Dispute resolution, often relying on code-based solutions, present a unique challenge in the absence of traditional legal mechanisms.

Amongst these challenges, stakeholders are actively working to establish legal frameworks that balance innovation with compliance. DAO creators, participants, and regulators are collaborating to develop guidelines that accommodate the unique characteristics of DAOs within existing regulatory structures. They aim to address concerns such as governance, intellectual property, and cross-border operations while ensuring transparency and fairness in token-based decision-making.

As DAOs continue to evolve and proliferate, it is imperative that legal experts, blockchain developers, and policymakers engage in ongoing discussions to create a legal framework that allows DAOs to harness their transformative potential while adhering to the complexities of the law. Finding this delicate balance is essential for the future coexistence of decentralised innovation and legal compliance.

In conclusion, DAOs represent a pivotal shift in how we organise and collaborate in the digital world. While challenges and uncertainties remain, the potential for DAOs to drive positive change in various sectors is undeniable. It is crucial for regulators, developers, and participants to work collaboratively to harness the full potential of DAOs while addressing their evolving challenges.

These decentralised entities are shaping the digital future, and the possibilities they offer are limited only by our collective imagination.

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